



AGENDA

- Introduction
 - Protection of New York's Critical Assets
 - Project Examples - Water Resiliency of Critical Facilities
 - Lessons That Can Be Learned...

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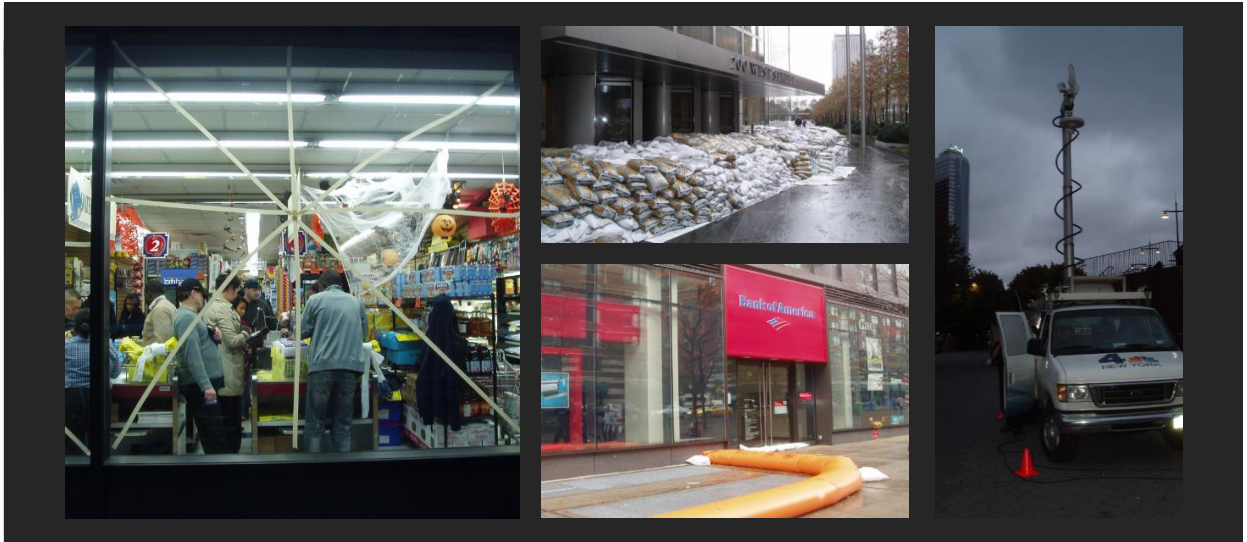
Introduction



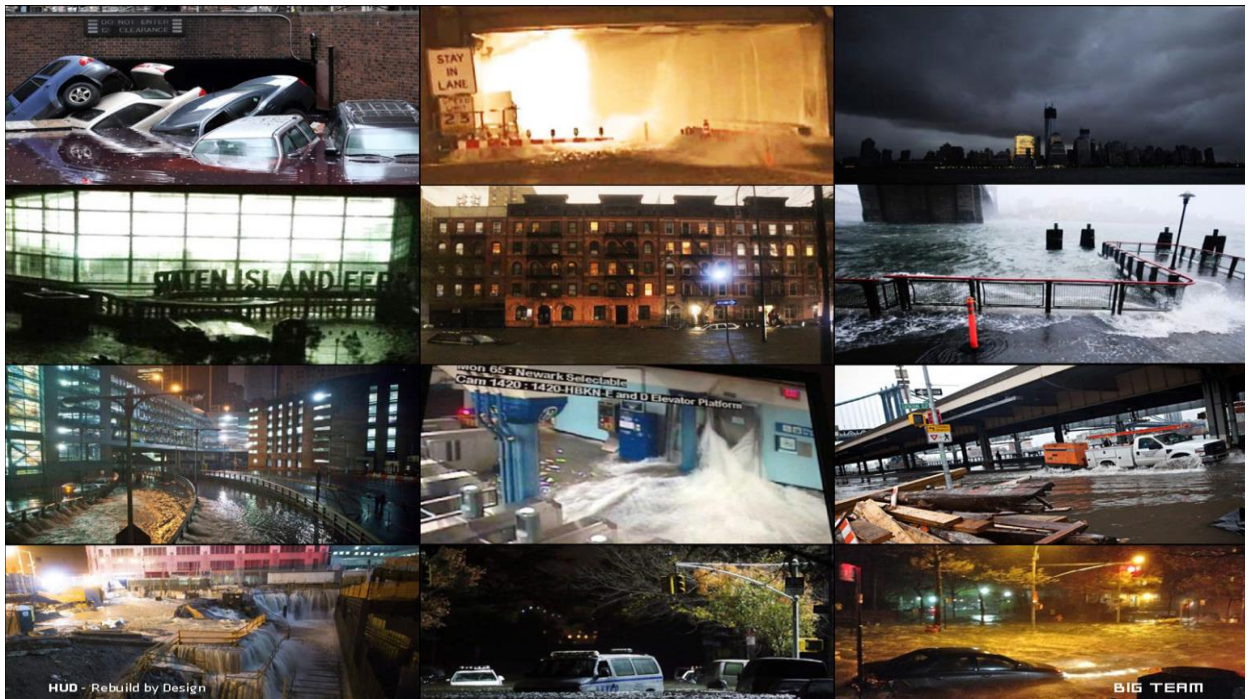
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Manhattan *before* Sandy – Oct. 29th 2012



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Mayor Pledges to Rebuild and Fortify Coast

By DAVID W. CHEN
and MICHAEL M. GRYNBAUM

New York City, still reeling from the impact of Hurricane Sandy, will expand its evacuation zones, tighten building codes and look for ways to fortify critical infrastructure like transportation and electrical networks from future natural disasters, Mayor Michael R. Bloomberg said Thursday.

But while the mayor said he would aggressively pursue a rebuilding of the damaged waterfront, he warned that "there are no panaceas or magic bullets" to protect the city fully. And while he did, for the first time, specifically suggest dunes or levees as pro-

TECTIVE measures worth exploring, he again dismissed the use of expensive experiments like sea gates stretching across New York Harbor.

It was Mr. Bloomberg's first major address on what the city should do in a post-hurricane world that, after the end of 2013, will also be a post-Bloomberg world. And the speech, which was televised live from a Lower Manhattan hotel that had been closed for two weeks because of the storm, had the bearing of a future-oriented State of the City event, with accompanying slides and even a surprise guest: former Vice President Al Gore.

Mr. Gore, now an environmental activist, repeatedly lavished praise on

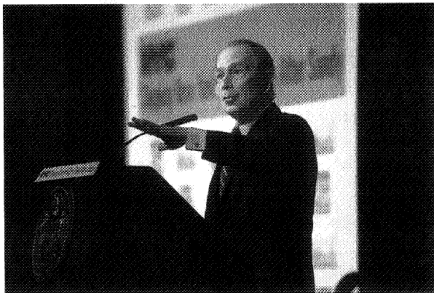
the mayor for his work on responding to climate change, saying he does not "know of anybody who has done more." Mr. Gore, a Democrat, even gently chided the Obama administration: "We cannot have four more years of mentioning this occasionally," he said.

Mr. Bloomberg, an independent, offered a much kinder assessment, saying the federal government had been very responsive to the damage wrought by Hurricane Sandy. But he also repeatedly sought to temper expectations of a quick solution, at one point stating bluntly, "Saying we're going to spend whatever it takes just is not realistic."

Among other ideas, Mr. Bloomberg said the city would consider the construction of dunes, jetties, levees and berms along coastal areas to help reduce damage from future storm surges. He did not specify where such barriers would be built, nor how much these would cost. He also said the city would update its building code to require more stringent protection against floods. In particular, Bloomberg officials said that residential buildings — including

Height restrictions on some residential homes would be relaxed, Mr. Bloomberg said, so owners can elevate their houses above the flood plain. He also said the city would update its building code to require more stringent protection against floods. In particular, Bloomberg officials said that residential buildings — including

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Mayor Michael R. Bloomberg gave his first major speech on post-hurricane reconstruction Thursday in Lower Manhattan. Al Gore attended.

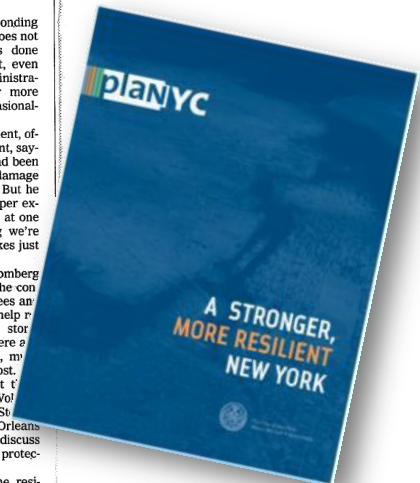
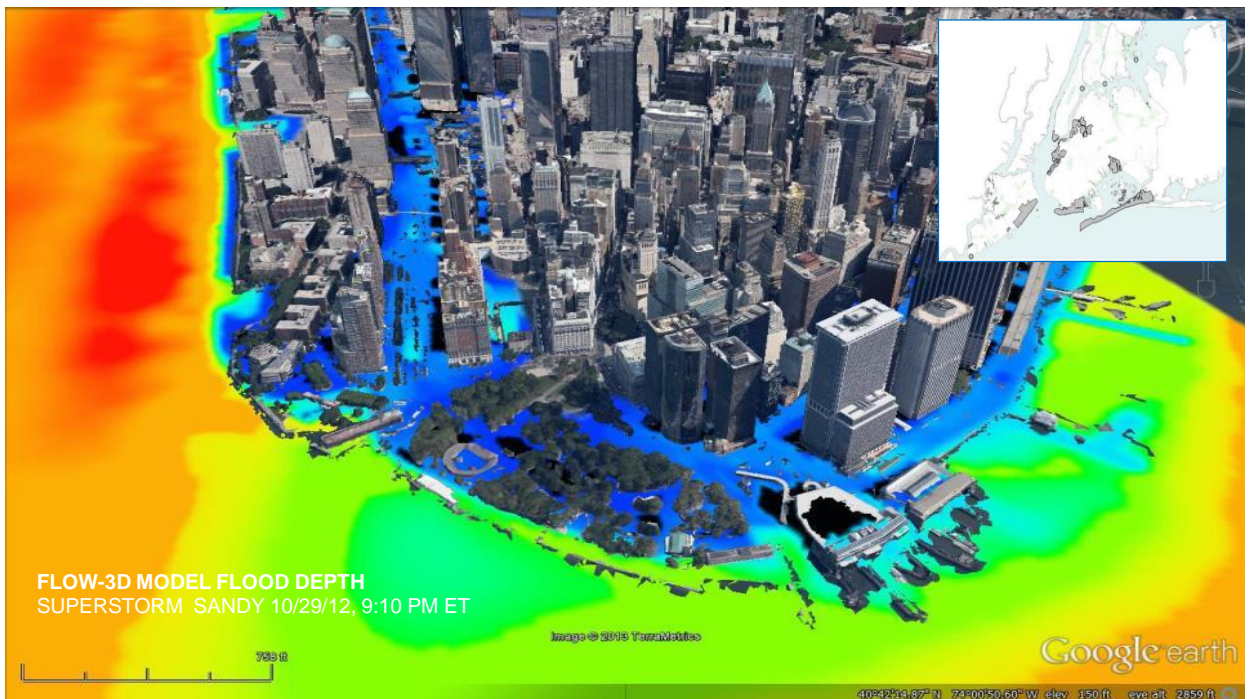
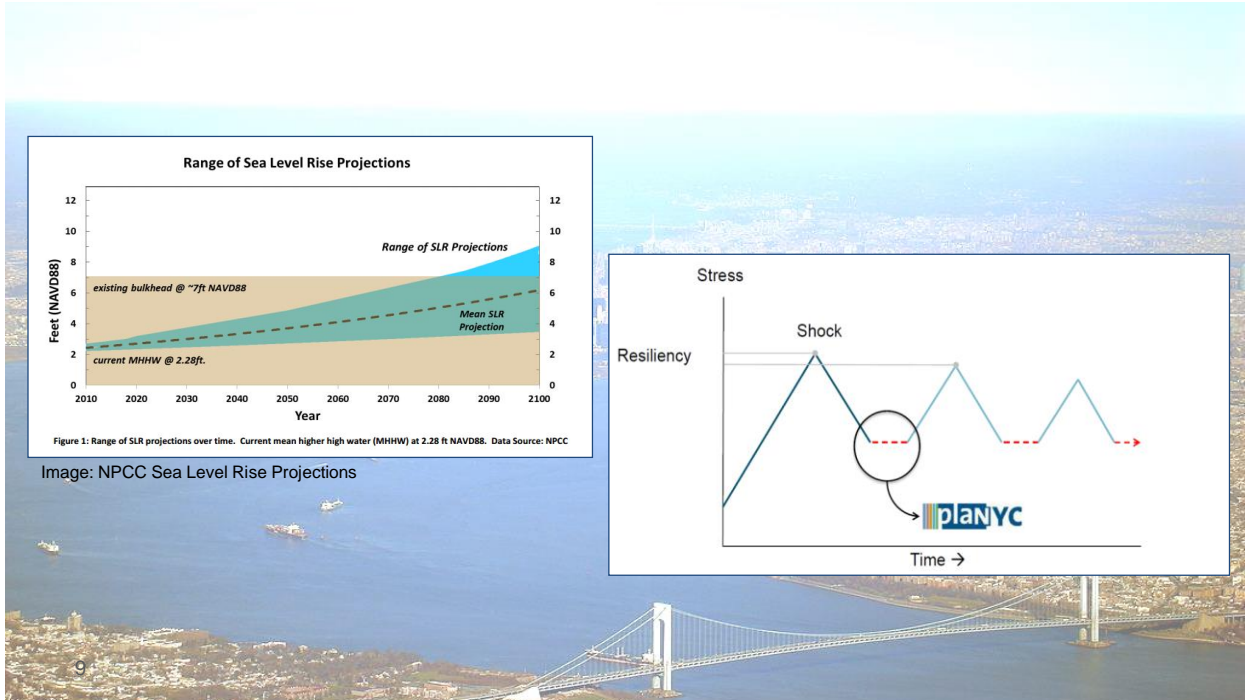
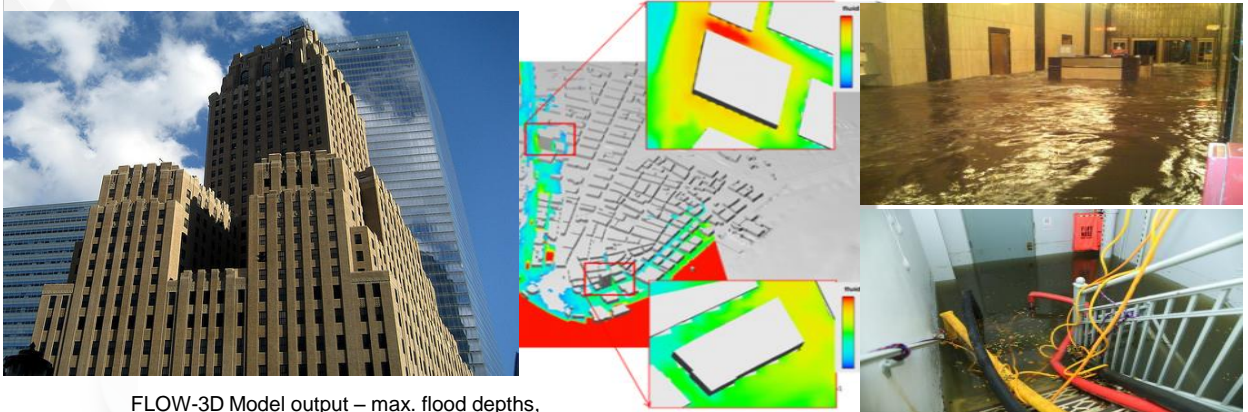


Image: Mayor Bloomberg announces PlanNYC



Protection of New York's Critical Assets

- Telecommunication Centers

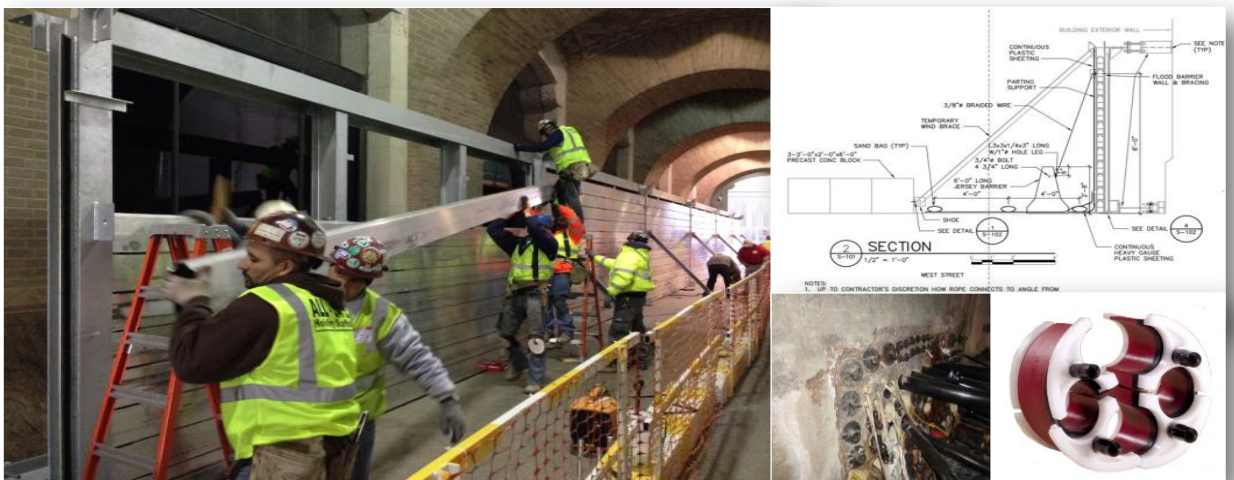


FLOW-3D Model output – max. flood depths,
Oct. 29th 2012, 9pm

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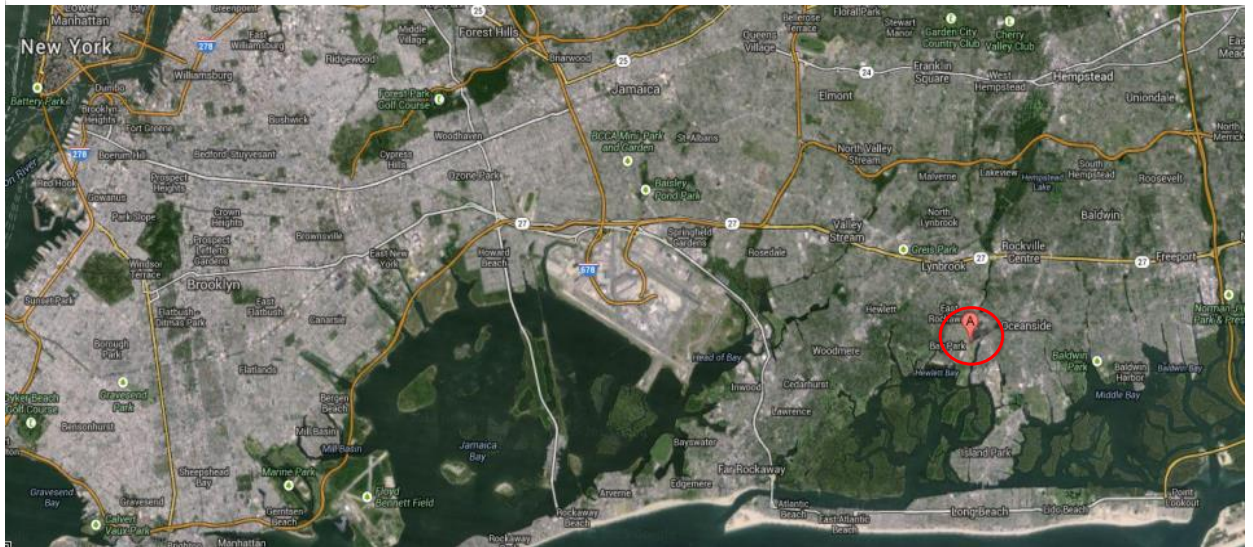


Images: deployment of 9ft removable flood wall - flood wall design – underground utilities and conduit plugs

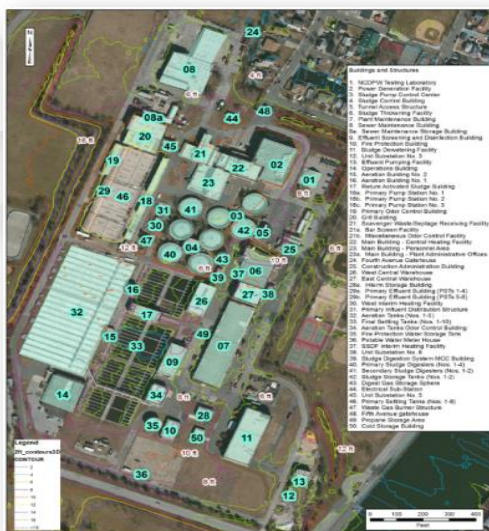
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Protection of New York's Critical Assets

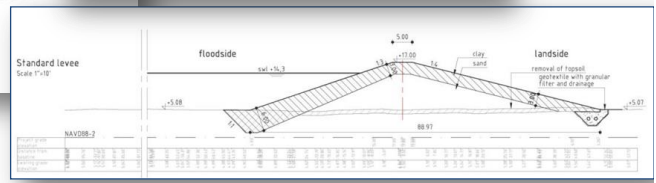
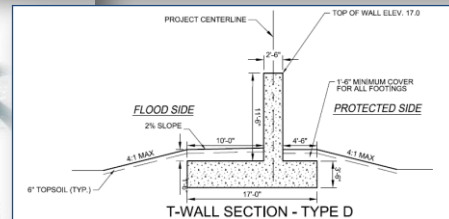
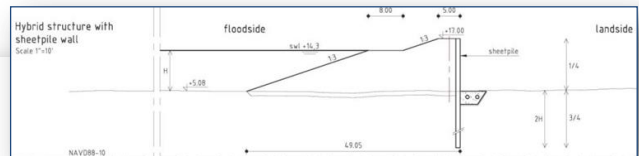
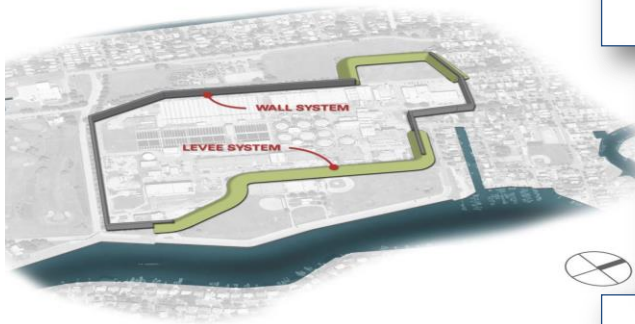
- Bay Park STP, Nassau County



Bay Park Sewage Treatment Plant



Bay Park Sewage Treatment Plant



Images: protective alignment, retaining heights <12ft, 1:500 yr safety level

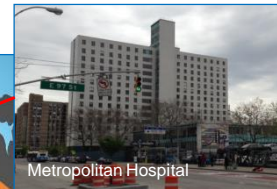
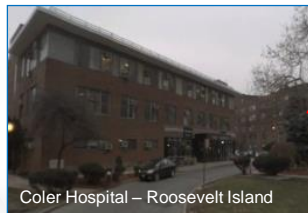
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Bay Park Sewage Treatment Plant



Protection of New York's Critical Assets

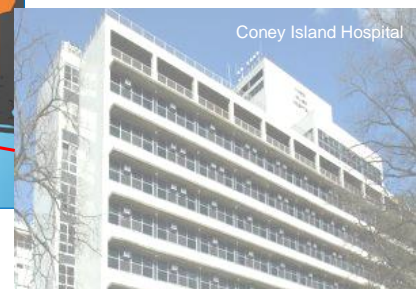
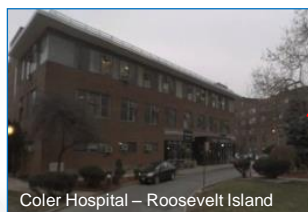
- Hospitals



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Protection of New York's Critical Assets

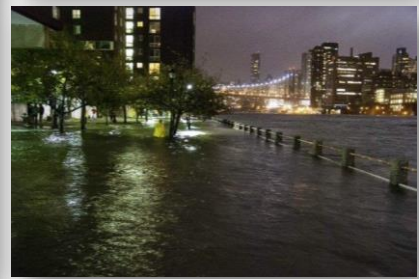
- Coler Specialty Hospital and Nursing Facility



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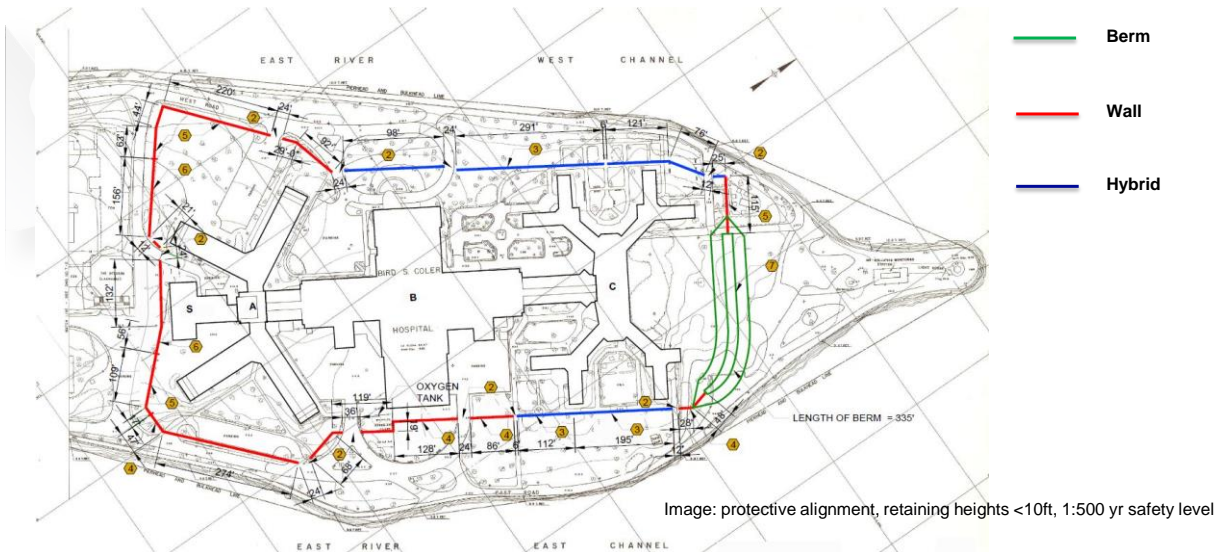
Coler Specialty Hospital and Nursing Facility

- Roosevelt Island



Coler Specialty Hospital and Nursing Facility

- Flood Mitigation Concept A



Coler Specialty Hospital and Nursing Facility

- Flood Mitigation Concept B



Coler Specialty Hospital and Nursing Facility

- Preferred Long Term Resiliency Strategy

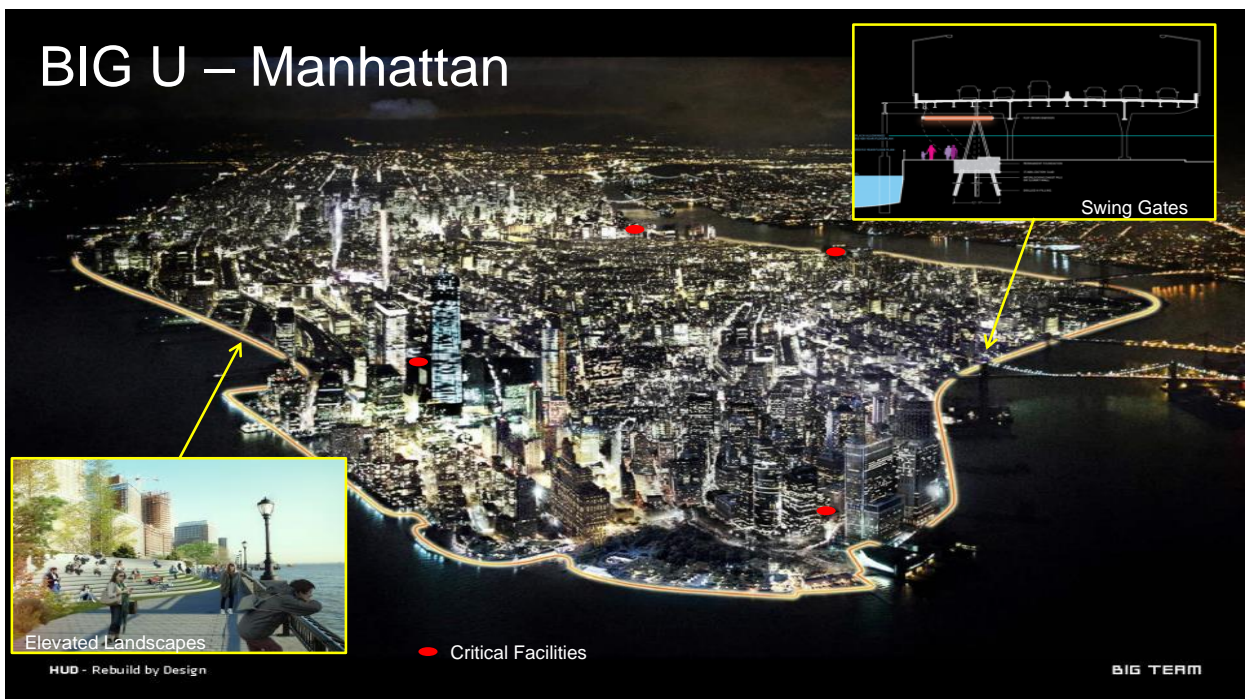


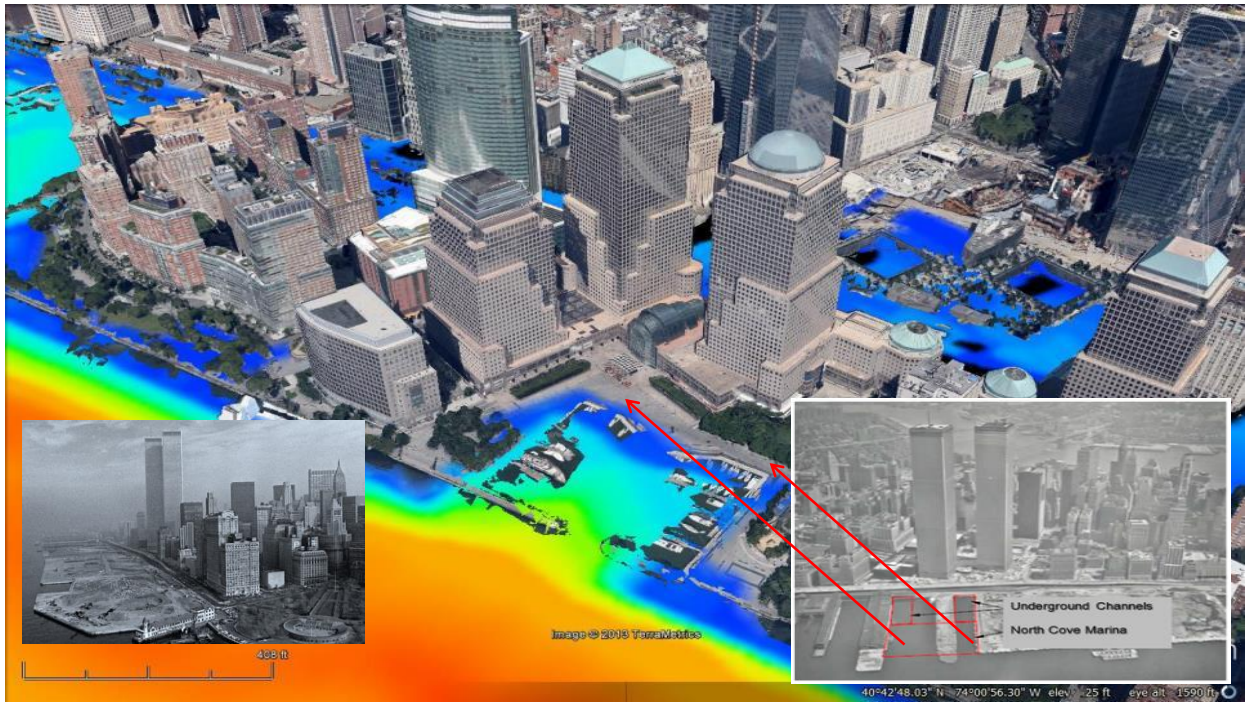
Flood Mitigation Hospitals vs. Long Term Strategies

- Coney Island Hospital vs. Coney Island Creek



Image: Coney Island Creek, PlaNYC's Tidal Barrier & Wetlands Initiative





Lessons (to be) Learned: Integration is the Innovation!

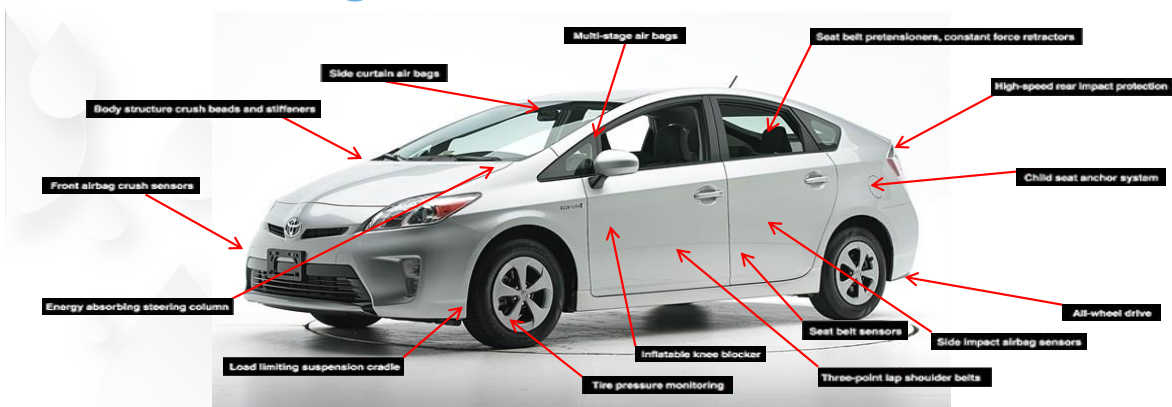


Image: Integrated Multiple Lines of Defense, the 2014 Toyota Prius

Thank you!



 ARCADIS