

CASE STUDY: CITY OF NEW YORK

USING XDI PLATFORM FOR ADAPTATION BUSINESS CASE

The XDI Platform has been utilised by New York City to secure infrastructure funding by creating essential business case scenarios. Working with the Climate Program at the City of New York’s Department of Environmental Protection, XDI invigorated and “evergreened” a previous study of flooding impacts for waste water treatment facilities.

Earlier Adaptation Responses

When Hurricane Sandy hit in October 2012, storm surge caused damage to low lying wastewater facilities, resulting in millions of gallons of untreated and partially treated wastewater spilling into the harbour. The City quickly reacted to repair damage and commenced work to develop adaptation options (such as elevating and flood-proofing equipment), to ensure the highest levels of protection from future storms. A study completed in 2013 by Department of Environmental Protection detailed how the infrastructure could be made resilient up until the year 2100.

This report was used to justify the first round of resilience funding.

XDI Platform Evergreens Previous Study Results

XDI worked with New York City to bring together disparate data on land elevations, flood mapping and climate projections into the XDI Platform. Using the analysis from the 2013 study, XDI was able to bring fresh insights into the adaptation pathways available, enabling the NYC Managers to build on past expenditure, and deliver staged risk mitigation at least cost.

Working dynamically within XDI Platform, each asset was assessed for flood risk over its asset life time. The risk cost and failure probability were calculated for each hazard and for every year until 2100.

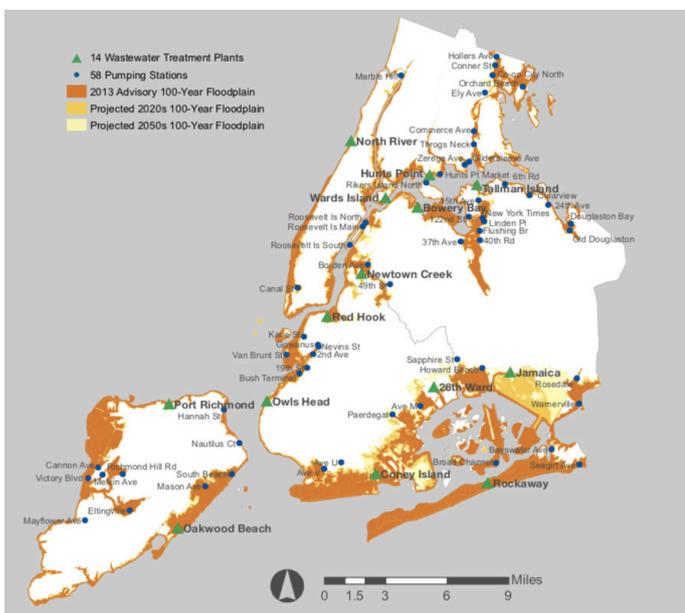


Figure 1: Water treatment plants at risk of storm surge inundation

Source: NYC Wastewater Resiliency Management Plan 2013

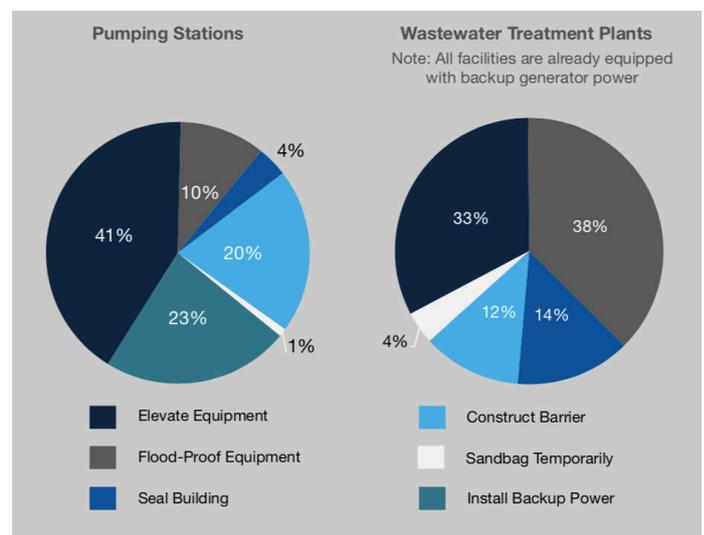


Figure 2: Adaptation strategies for pumping stations and water treatment plants

Source: NYC Wastewater Resiliency Management Plan 2013

Testing Adaptation Options

Several adaptation pathways were identified and tested within XDI Platform. Analysis provided insights to the relative impacts of the pathways, which then formed the basis of a climate change action plan for the sites.

- Pumping station adaptation actions included; elevating equipment, floor-proofing equipment and seal building.
- Wastewater treatment plants adaptation actions included; Constructing barriers, temporary sandbagging and installing back up power.

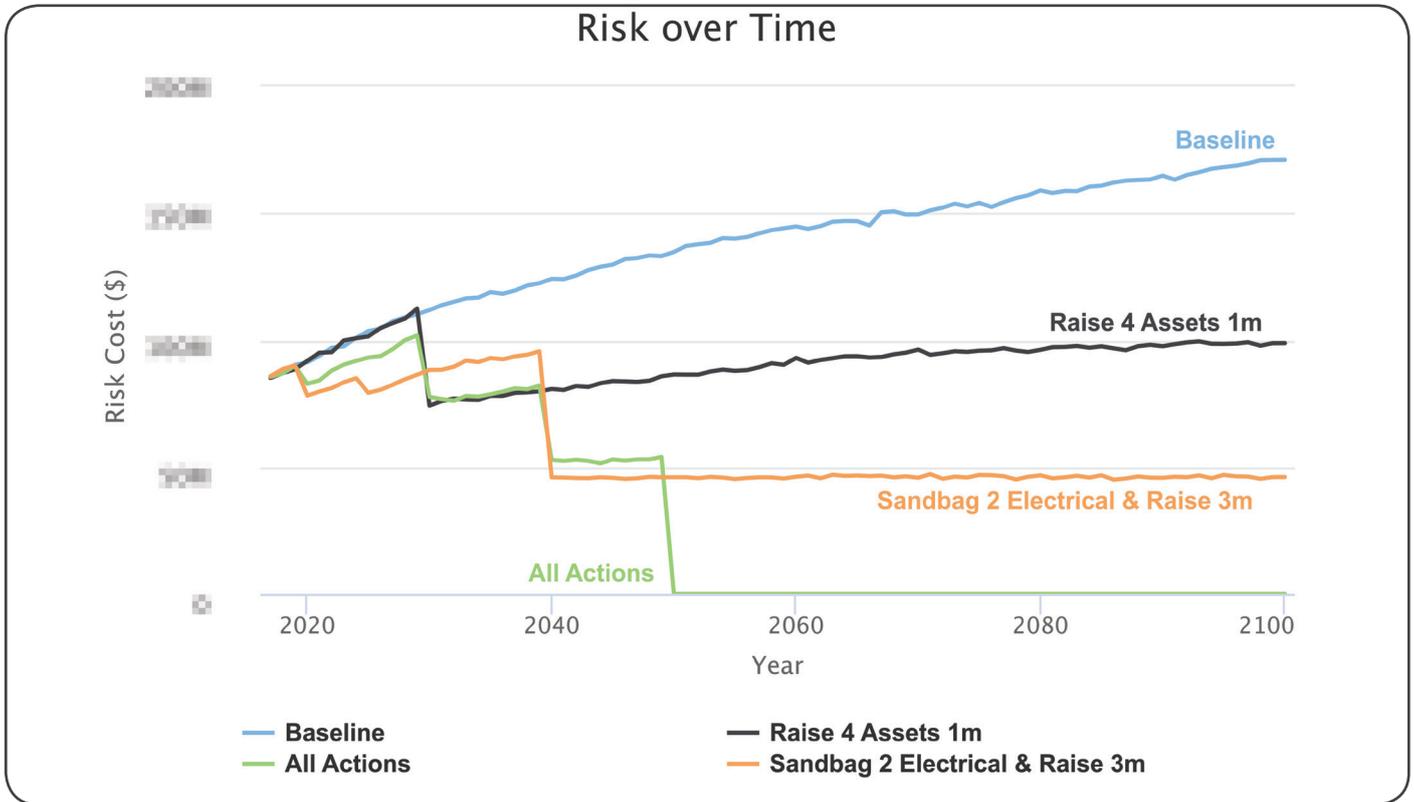


Figure 3: XDI Platform tested adaptation pathways against unadapted baseline to 2100 and provided cost benefit analysis on different options.

The deployment of the XDI Platform can facilitate continued improvement in extreme weather resilience for all New Yorkers.

“We are excited to build our data into XDI – it will keep it alive and current, we see XDI building business cases for infrastructure investment across NYC assets.”

- Alan Cohn, Director of Integrated Water Management for NYC