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Green Bonds Rise as Tool for Water Infrastructure, Resilience.

Environmentally conscious green bonds are a tool more issuers use to finance various means of purifying drinking water and buffering against rising seas.

Municipal issuers from transit agencies to small cities and towns have sought to manage water more effectively — notably after Hurricane Sandy struck in 2012 - with varying degrees of success.

Larger agencies with bonding capability, such as New York's Metropolitan Transportation Authority, have earned praise from climate experts and municipal analysts alike.

Other municipalities are still struggling.

"Municipalities have not figured that out yet," said storm financing expert Alan Rubin. "Unlike municipalities, the MTA can do it because they have their metrics and their own bonding without having to go through a referendum.

"Municipalities can use green bonds to purchase this kind of equipment," said Rubin, nicknamed the "Hurricane Czar" after working extensively in Miami-Dade County, Fla., when Hurricane Andrew caused more than \$30 billion in damage in 1992. While working in Lehman Brothers' investment banking division, Rubin also helped design and underwrite the catastrophe fund for hurricane relief.

According to Rubin, municipal options include partnering with corporations and manufacturing firms, or working with other communities under shared-services arrangements.

Also on the table is matching state and federal grant and loan money. "[Andrew] Cuomo's got a lot of money available," Rubin said of New York's governor, who on Jan. 9 called for spending \$2 billion to improve the state's water infrastructure.

According to S&P Global Ratings' Boston-based credit analyst Kurt Forsgren, water projects still represent about half of all par issued for green bonds as well as half of all issues in 2016 from January through August.

"One challenge is balancing the need for global consistency across and within asset categories while serving the often unique features of local infrastructure providers in different markets," said Forsgren. "For example, many U.S. municipal water utilities operate as combined enterprises with water, wastewater and storm water assets as part of an integrated system. Other water and wastewater utilities operate as separate enterprises."

London-based Climate Bonds Initiative is working to group similar asset classes into broader categories.

MTA post-Sandy initiatives included the issuance of a \$200 million catastrophe bond late in 2013, the first bond that covered storm-surge risk arising from named storms.

The MTA, which operates New York City's subway, bus and commuter rail systems plus several bridges and tunnels, has beefed up capital spending, including \$2 billion alone to seal off water entry points. Other actions have included launching a catastrophe fund, repairing several tunnels and rebuilding the South Ferry station in lower Manhattan – built below the water table, renovated in 2009, and which Sandy hammered in 2012. MTA officials expect to reopen South Ferry later this year.

"The MTA has figured it out. It has done a very, very good job," Rubin said of the authority, one of the largest municipal issuers with roughly \$37 billion in debt.

In addition, the MTA took proactive steps by shutting down in advance of the storm and moving subway trains, commuter rail cars and buses to safe storage locations.

Water management includes preserving the quality of drinking water to buffering against sea surge. The sea level rose to 14 feet during Hurricane Sandy.

Municipal management of water is a different story, according to think tank Brookings Institution.

Only a handful of drinking water utilities in the largest cities performed well across six indicators of financial health, Brookings said in a report. Metrics, culled from American Water Works Association data, included operating and debt-to-asset ratios, and monthly residential water rates.

Brookings examined local water infrastructure investment in the U.S., notably large drinking water facilities. "As concerns continue to ripple from incidents in Flint, Mich., and beyond, cities remain at the forefront of many investment challenges, yet they often do not have a clear sense of where they stand relative to it."

Brookings cited a disconnect between investment demand and institutional capacity. According to Brookings, while more than 88% of Americans believe some kind of action is necessary to grasp the country's water infrastructure challenges and many analysts agree that the time is ripe for more infrastructure investment, only 17% of utilities are confident that they can just cover existing service costs – let alone necessary upgrades — through rates and fees.

"Publicly owned and operated utilities are increasingly running up against tight budgets, debt obligations and other barriers to investment as user charges, municipal bonds and traditional financing tools fail to keep up with the level of need," said Brookings.

Sea level rise, meanwhile, continues to threaten the tri-state New York region, which holds about 23 million residents with roughly 3,700 miles of tidal coastline.

"Relatively little has been done to address the inevitable permanent inundation of buildings, infrastructure and communities," transit-oriented organization Regional Plan Association said in its own report. According to RPA, the region could realize one foot of sea-level rise by 2050, possibly by the 2030s. Six feet of sea-level rise is possible early next century, the report said.

That, said RPA, could threaten the region's three major airports plus Teterboro Airport in northern New Jersey.

For MTA, the surprise nature of Sandy – the eye of the storm veered from sea and right-angled into metro New York – provided opportunity on two fronts: to improve its water resilience and to grasp overall operational flaws.

"My sense is that the structural deficiencies and other deficiencies were brought to light as a result

of Sandy,” Stuart Lerner, vice president of MTA contractor Stantec, said at a Jan. 10 workshop at the New York Transit Museum in downtown Brooklyn. “Sandy provided a whole new opportunity to solve two problems at once, which were water resilience and structural defects.”

Compounding the MTA’s difficulties was the corrosive salt in the water that gushed through the tunnels.

“Millions and millions of gallons of salt water are a bad thing for a 110-year-old legacy system,” Iain Watt, director for recovery and resiliency at the MTA’s New York City Transit unit, told the Transit Museum gathering.

Much of the damaged equipment was deep in the bowels of the subway tunnels. “Pumps, fan controls, signal systems, emergency equipment ... much of it dates back longer than anyone in this room,” he said.

According to Watt, the MTA is spending \$2 million of its capital funds to seal off 3,600 water entry points, basing its work as suitable for a Category 2 flood zone, based on a National Weather Service model.

Entry points, beyond the obvious subway entrances, include “stairwells and manholes, some of them with our name on it, some with Time Warner’s,” said Watt, while structures also varied widely by nature of abutting property.

New equipment, said Watt, was tailored for MTA contemporary needs. “Nothing off the shelf,” he said. “All of it was designed for us.”

The Bond Buyer

By Paul Burton

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