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MUNIS IN YOUR COMMUNITY SEPTEMBER 2026

Weathering the storm

Muni bonds fund America's climate defenses

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America's communities face a rising toll from climate disasters, and muni bonds are increasingly how they fund infrastructure to remain resilient. As climate risks rise and the federal safety net grows more uncertain, we believe munis have become an essential tool for state and local governments to protect the communities they serve.

By the numbers

$9.1T	Projected infrastructure needs over the next 10 years[1]
27	Weather and climate-related disaster events in 2024 with inflation-adjusted losses exceeding $1 billion[2]
50%	Proposed FEMA cost-share reimbursement rate, down from 80% – 90%[3]
24%	Share of municipalities using climate data in capital planning[4]
<1%	Share of state budgets tied to FEMA spending[5]

Fiscal reality meets extreme weather

As world leaders gather in New York City for Climate Week, protecting communities from extreme weather has shifted from a future concern to an immediate fiscal reality. For muni bond investors, identifying which state and local governments are building climate resilience is increasingly important to credit analysis.

The numbers are sobering. In 2024, the U.S. experienced 27 weather and climate-related disasters that each caused more than $1 billion in losses — three times the average recorded in the 1980s, even after adjusting for inflation (Figure 1).[2] Yet the majority of our cities are under-prepared to face these disasters. According to the most recent National League of Cities survey, only 24% of municipalities currently use climate data in capital planning, and 70% have not conducted a climate risk assessment of their infrastructure.[4]

At the same time, the federal safety net that state and local governments have long relied on is becoming less certain. Proposed FEMA reforms could cut the federal cost-share reimbursement rate — historically 80% to 90% — to as low as 50%, shifting tens of billions in recovery costs onto states and localities.

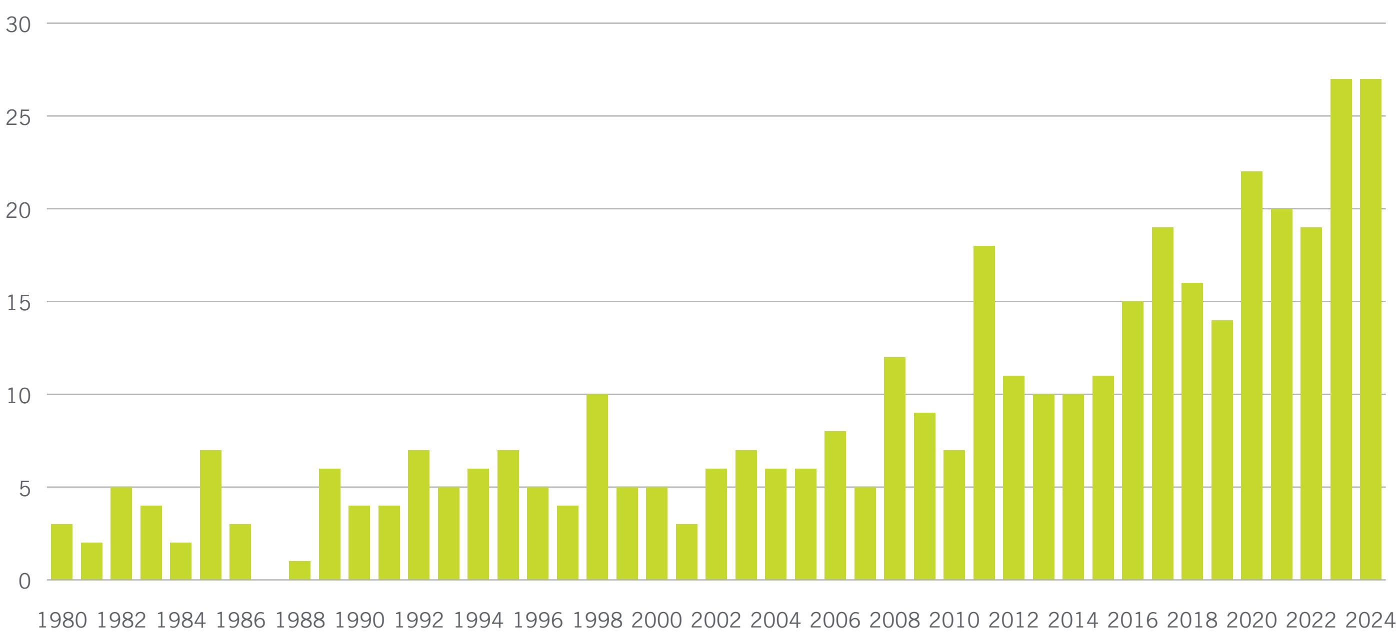
That said, FEMA spending represents less than 1% of most state budgets, suggesting most states have the fiscal capacity to manage the transition. But the burden will fall unevenly, with smaller and more financially constrained governments facing greater stress if disaster costs rise as federal reimbursements shrink.

Municipal bonds finance climate resilience at every stage — not just recovery after disaster strikes, but proactive investments that reduce risk before an event occurs. From seawalls and stormwater tunnels to wildfire prevention and drought-resilient water systems, we believe munis are one of the most important funding mechanisms keeping American cities functioning amid extreme weather.

Investors need to understand whether a community faces climate risk and how it is managing that risk. As federal support shrinks, that distinction matters more than ever for credit quality.

Figure 1: Costly disasters are hitting the U.S. more often

Number of billion-dollar climate disasters, 1980 – 2024 (CPI adjusted)



Data source: NOAA National Centers for Environmental Information (NCEI) U.S. Billion-Dollar Weather and Climate Disasters, 2025.

Climate plans signal future bond supply

The visible pipeline of climate-related municipal issuance is growing as more governments adopt climate action plans, building climate risk directly into long-term capital planning.

Notably, the gap between infrastructure needs and available funding is substantial. In 2024, 124 cities reported needing $62.7 billion for climate projects but had only $22 billion available — a $40.8 billion shortfall that grew 48% in a single year.[6] As federal funding contracts, municipal bond financing will play an even greater role.

New York City illustrates what structured climate budgeting looks like in practice. In 2022, it became the first major U.S. city to formally embed climate considerations into its budget decision-making through climate budgeting. The city's 2026-2030 capital plan now projects $7.5 billion in funding needed to address flooding from severe rainfall, coastal storms and rising seas — plus another $1 billion targeting extreme heat through expanded tree canopy, public pool access and cooling features across parks and recreation spaces.

For investors, this planning translates into a structured, multi-year pipeline of municipal bond issuance with clear purpose and strong institutional backing.

Issuers turn risk into investment

Beyond these examples, issuers nationwide are tapping the muni market to finance climate resilience. Proactive climate investment takes many forms across issuers, geographies and hazards.

Coastal cities build against rising seas

For coastal communities, extreme weather risk is tangible and growing — and so is the pipeline of muni bond financing addressing it. Miami and Battery Park City in New York illustrate a broader truth about coastal credit quality: The issuers best positioned for the long term are those making structured, funded investments in physical resilience today — not waiting for the next storm or the reimbursements that may or may not follow.

Miami, Florida, faces some of the most acute coastal exposure of any major U.S. city. Sitting at sea level on porous limestone, Miami contends with chronic flooding, storm surge and rising seas. In 2017, voters approved the $400 million Miami Forever Bond program, directing financing toward seawall replacement, flood control pump stations, stormwater management and other community infrastructure.

The bonds are secured by a limited ad valorem tax levy on all taxable property and rated Aa2/AA by Moody's and S&P, reflecting Miami's large, diverse tax base, healthy labor market and well-embedded financial policies supporting strong reserves.

The Battery Park City Authority at the southern tip of Manhattan faces a similar reality. Its 92-acre, fully developed district of premier office space, residential housing, retail and hotels sits along the Hudson River, exposed to storm surge and rising seas. The Authority's Series 2025 Senior Revenue Bonds raised approximately $658 million for capital projects, including the North/West Battery Park City Resiliency Project — a permanent passive coastal flood barrier protecting the district.

The senior bonds are rated Aaa/AAA by Moody's and Kroll, secured by a pledge of ground rents from a diverse mix of properties. The ratings reflect strong debt service coverage, high-quality real estate and management's proven track record navigating disruptions, including Hurricane Sandy. For investors who have reached capacity on more widely held New York credits, Battery Park City offers a compelling, top-rated alternative backed by a unique revenue stream.

Cities invest to manage extreme rain and flooding

Extreme precipitation is increasing nationwide with the heaviest rainstorms — that once qualified as the top 1% of rainfall days — occurring far more frequently and with greater intensity. The Midwest has seen a 45% increase in these extreme storms, according to the Fifth National Climate Assessment.

As this trend accelerates, water infrastructure faces growing pressure. Issuers are addressing capital needs through state-level general obligation programs, special district financing and utility revenue bonds.

Chicago: The Metropolitan Water Reclamation District (MWRD) of Greater Chicago is tackling the combined sewer challenge common to many older American cities, where a single pipe network carries both stormwater and sewage, creating overflow risk that grows as heavy rainfall becomes more frequent.

MWRD's Tunnel and Reservoir Plan (TARP) addresses this through a deep tunnel and reservoir system that has already reduced combined sewer overflow incidents. The project will provide approximately 20 billion gallons of storage capacity when complete in 2029.

Rated Aa1/AA+/AAA by Moody's, S&P and Fitch, MWRD is an independent regional service provider serving approximately 12.7 million people across 128 Cook County communities, with a $785 billion tax base and a low direct debt burden of 0.3%.

For investors, MWRD's top-tier credit quality combined with a modest yield pickup relative to other high-grade credits makes it a compelling way to gain exposure to a well-funded infrastructure program addressing a growing risk.

San Francisco: The San Francisco Public Utilities Commission (SFPUC) favors prevention-focused green infrastructure, including rain gardens, permeable pavement and green bulb-outs. SFPUC serves approximately 2.7 million people across San Francisco and three surrounding Bay Area counties.

Its bonds are secured by net water system revenues, and the organization is recognized as a pioneer in the green bond market, having issued more than $4 billion in certified climate bonds since becoming the first U.S. municipal issuer to certify under the Climate Bonds Initiative's water criteria in 2016.

SFPUC's bonds are rated Aa2/AA by Moody's and S&P, reflecting the essential nature of the utility, its willingness to raise rates and its demonstrated commitment to system resilience. However, these strengths are tempered by a substantial $3 billion 10-year capital plan funded primarily through additional borrowing.

For investors, that growing leverage could translate into wider spreads and more attractive entry points as new supply comes to market.

Western states confront water scarcity

Across the American West and Southwest, climate change is intensifying water scarcity, prolonging drought and extending wildfire seasons, placing communities under growing physical and fiscal strain.

Together, Texas and California show how state-level GO and revenue structures can serve as powerful vehicles for large-scale climate investment. For investors, the breadth and scale of these programs translate into a consistent, sizable pipeline of highly rated paper — offering liquid, diversified exposure to issuers taking action on climate resilience.

> From Chicago to Texas, munis are financing America's water resilience.

Texas faces one of the most acute long-term water challenges in the country. By 2070, the state projects a 9% rise in water demand alongside an 18% drop in supply — a gap that, left unaddressed, threatens up to $153 billion in annual economic losses.[7] The Texas Water Development Board (TWDB) launched a plan a decade ago to finance the state's 50-year water strategy. Since 2015, Texas has issued $11.5 billion to fund water supply projects ranging from reservoirs and aquifer storage to conservation and reuse infrastructure.

TWDB bonds carry AAA/AAA ratings from S&P and Fitch, reflecting the program's constitutional backing and the critical nature of the infrastructure it finances.

For investors, these bonds offer exposure to a large, well-structured state program addressing a long-term challenge with direct implications for Texas's economic vitality.

California is also funding one of the most comprehensive climate financing programs in the muni market, spanning nearly every dimension of the state's physical climate exposure. In 2024, voters authorized up to $10 billion in general obligation bonds for wildfire prevention, extreme heat mitigation, water resilience, natural lands protection, coastal protection, clean energy and agriculture.

California's GO bonds carry the full faith and credit pledge of the state, rated Aa2/AA-/AA by Moody's, S&P and Fitch.

Not all climate risk is priced equally

Climate risk is not confined to a single corner of the municipal market. General obligation and tax-backed bonds, utility revenue bonds, transportation credits, housing finance agencies, land-secured bonds and higher education issuers all carry exposure to physical climate hazards, with credit implications varying significantly by sector, geography and issuer.

The capacity to respond to that exposure is unevenly distributed across the country (Figure 2). Some communities have invested heavily in physical resilience and emergency preparedness, while others remain highly vulnerable.

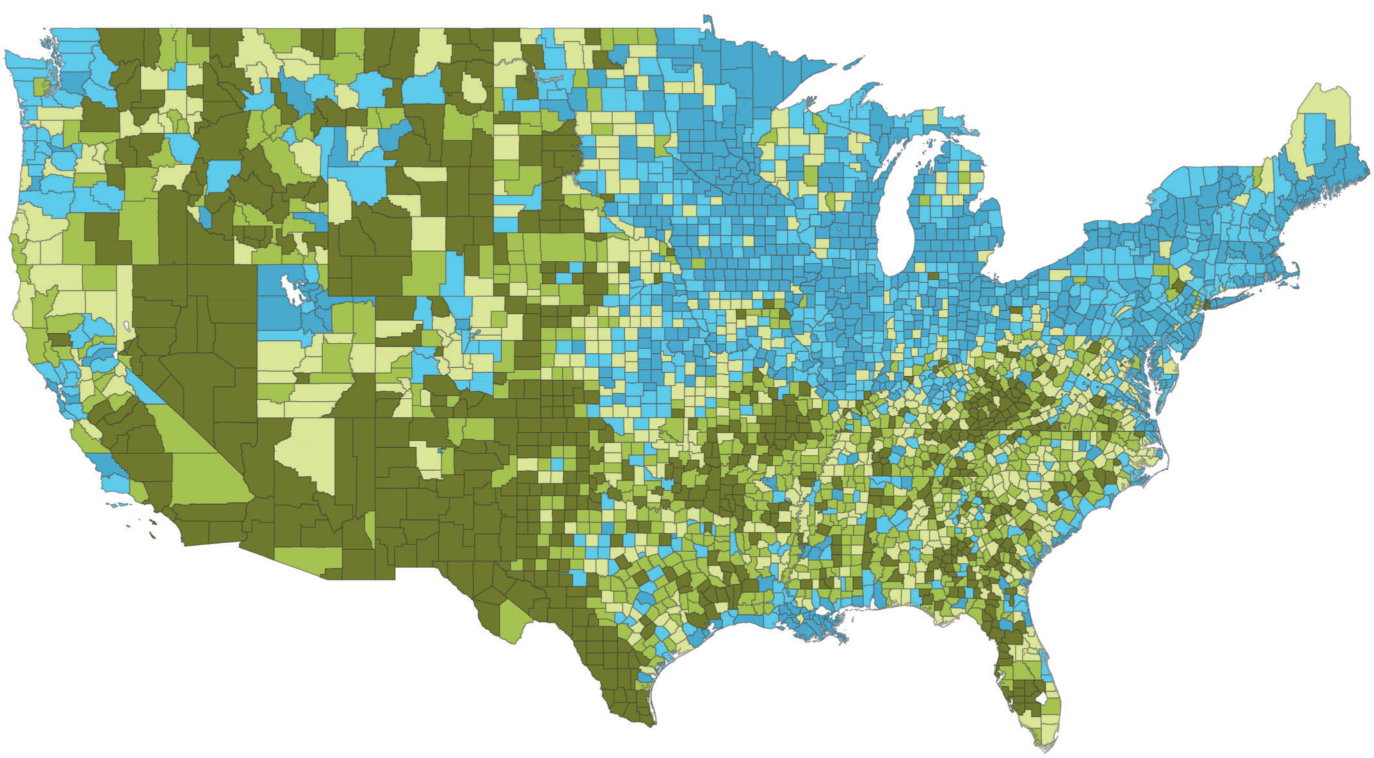
The muni market has been slow to price these risks relative to other asset classes. Salt Lake City, for example, ranks highly on community resilience measures, but that capacity does not offset its well-documented drought and water scarcity exposure that current pricing does not fully reflect.

Proposed FEMA reforms will make the fiscal consequences of climate exposure more immediate than in prior decades. One proposal alone — raising the threshold to qualify for a federal disaster declaration — would have eliminated 29% of all declarations and $1.5 billion in federal funding had it been in effect from 2012 to 2025.[8]

In this environment, we feel the issuers best positioned for long-term stability will be those that have invested proactively in physical resilience and maintain the fiscal capacity to absorb costs Washington no longer covers. Identifying those credits — and distinguishing them from issuers whose ratings reflect historical stability rather than forward-looking risk management — is where rigorous, issuer-level research adds the most value.

Figure 2: Climate readiness differs widely across the country

FEMA National Risk Index — Community Resilience Rating



Data source: FEMA Resilience Analysis and Planning Tool, National Risk Index, County-level Community Resilience Rating, 16 Dec 2025.

Preparedness is becoming a credit differentiator

Municipal bonds are a key funding mechanism for America's climate resilience infrastructure, in our view. The seawalls protecting Miami's waterfront, the tunnels beneath Chicago capturing billions of gallons of stormwater, the coastal flood barriers defending Lower Manhattan and the reservoirs and reuse systems stretching across the American West all share a common thread: They were financed through the municipal bond market, putting capital to work in communities planning ahead.

A growing divide is emerging among municipal issuers — those making structured, funded commitments to climate resilience and those that remain underprepared. As that divide widens, its relevance to credit quality becomes increasingly material.

For investors navigating this landscape, sound analysis goes well beyond reading a credit rating. Understanding how an issuer funds its long-term capital needs, manages physical risk and is positioned relative to a changing federal framework requires rigorous, issuer-level research. That is the work that allows investors to act with confidence in a market where climate risk is becoming increasingly difficult to ignore.

> In a market where climate risk is hard to ignore, we believe credit ratings alone aren't enough—rigorous research is what matters.

For more information, please visit nuveen.com.

Endnotes

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