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U.S. Municipalities Credit Ratings and Economic Growth Increasingly Vulnerable to Floods, Storms and Drought

New Report from Four Twenty Seven Analyzes Exposure to Climate Hazards in U.S. Muni Market

May 22, 2018 – Berkeley, CA -- Four Twenty Seven, the leading provider of climate risk intelligence for financial markets, today releases its research findings on modeling the exposure of U.S. municipalities and their financial instruments to climate risks. Muni bond investors and credit rating agencies are increasingly considering climate change and past extreme weather events as part of their evaluation of U.S. cities. While this consideration is an important step, their evaluations could be better informed by incorporating forward-looking comparable data on the climate risks that impact these municipalities.

“This new dataset provides a comprehensive suite of risk scores to better inform ratings and pricing decisions,” said Emilie Mazzacurati, Founder and CEO of Four Twenty Seven. “The risk scores will be very helpful for all market participants, including muni bond investors, local governments, and ratings agencies.”

The research results are based on Four Twenty Seven’s market-leading expertise in five major climate categories, including cyclones/hurricanes, sea level rise, extreme rainfall, heat stress, and water stress. Four Twenty Seven’s research evaluates all 3,143 U.S. counties and cities over 50,000 in population (761 cities as of 2015) for their exposure to these categories.

“Climate risk is increasingly a part of our credit analysis for municipal issuers across the country,” said Andrew Teras, senior analyst at Breckinridge Capital Advisors. “The climate risk scores developed by Four Twenty Seven provide a comparable way to evaluate climate exposure and will give us another factor for assessing our investment universe.”

Some of the key findings in the report include:

- **Sea Level Rise:** The mid-Atlantic, particularly New Jersey, Virginia, North Carolina and Florida, has the highest exposure to coastal flooding in the United States, with the Bay Area and Pacific Northwest also highly exposed in several of their coastal cities and counties.

- **Cyclones/Hurricanes:** The majority of cyclone risk in the United States is concentrated in the Southeast, given its geographic proximity to the Gulf of Mexico and the tropical Atlantic Ocean. The coastal Mid-Atlantic and Northeast are also exposed to cyclones, but they tend to be less frequent than in the Southeast and somewhat weaker on average after interacting with land or cooler ocean waters.
- **Extreme Rainfall:** The Midwest is particularly exposed to heightened flood risk due to changing rainfall patterns. Recent advancements in attribution science show extreme rainfall to be the main driver of recent floods rather than 20th century agricultural practices, as was largely believed to be the case until recently.
- **Heat Stress:** The highest heat stress scores tend to be centered in the Southeast and Midwest, concentrated in Missouri and western Illinois and fanning out to the Great Plains, Mississippi River Basin, and Florida.
- **Water Stress:** Key watersheds for agricultural production such as the Central Valley aquifer system in California and the Ogallala Aquifer in the Great Plains are highly exposed to water stress. The agriculturally-dominated areas of Bakersfield, Delano, and Visalia, CA along the Central Valley Aquifer are among the ten cities most exposed to water stress. Similarly, municipalities along the Ogallala Aquifer in the Great Plains also rely heavily on agriculture and are among the most exposed to water stress.

A full copy of the report can be found via this link – [Four Twenty Seven US Muni Report](#)

The authors of the report and Emilie Mazzacurati are available for interviews and to answer any relevant questions.

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ABOUT FOUR TWENTY SEVEN:

Four Twenty Seven (427mt.com) is the leading provider of market intelligence on the impacts of climate change for financial markets. We tackle physical risk head on by identifying the locations of corporate production and retail sites around the world and their vulnerability to climate change hazards such as sea level rise, droughts, floods and tropical storms, which pose an immediate threat to investment portfolios.

Four Twenty Seven's ever-growing database now includes close to one million corporate sites and covers over 2000 publicly-traded companies. We offer subscription products and advisory services to access this unique dataset. Options include data licenses, an interactive analytics platform, and company scorecards, as well as reporting services, scenario analysis, and real asset portfolio risk assessments.

Four Twenty Seven has won multiple awards for its innovative work on climate risk and resilience and our work has been featured by Bloomberg, the Financial Times and the UNFCCC. Four Twenty Seven was founded in 2012 and is headquartered in Berkeley, California with offices in Washington, DC and Paris, France.

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