

# Assessing The Impact of Climate Change On U.S. Municipal Ratings

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# Agenda

1. Overview of S&P Global Ratings' View on Climate Change
2. Corporate's Approach to Assessing Climate Change Risk
3. How Climate Change Risks Factor into Municipal Ratings
4. Importance of Issue to Key Stakeholders
5. Conclusion

# S&P Global Ratings' View on Climate Change



# Overview of USPF and climate change

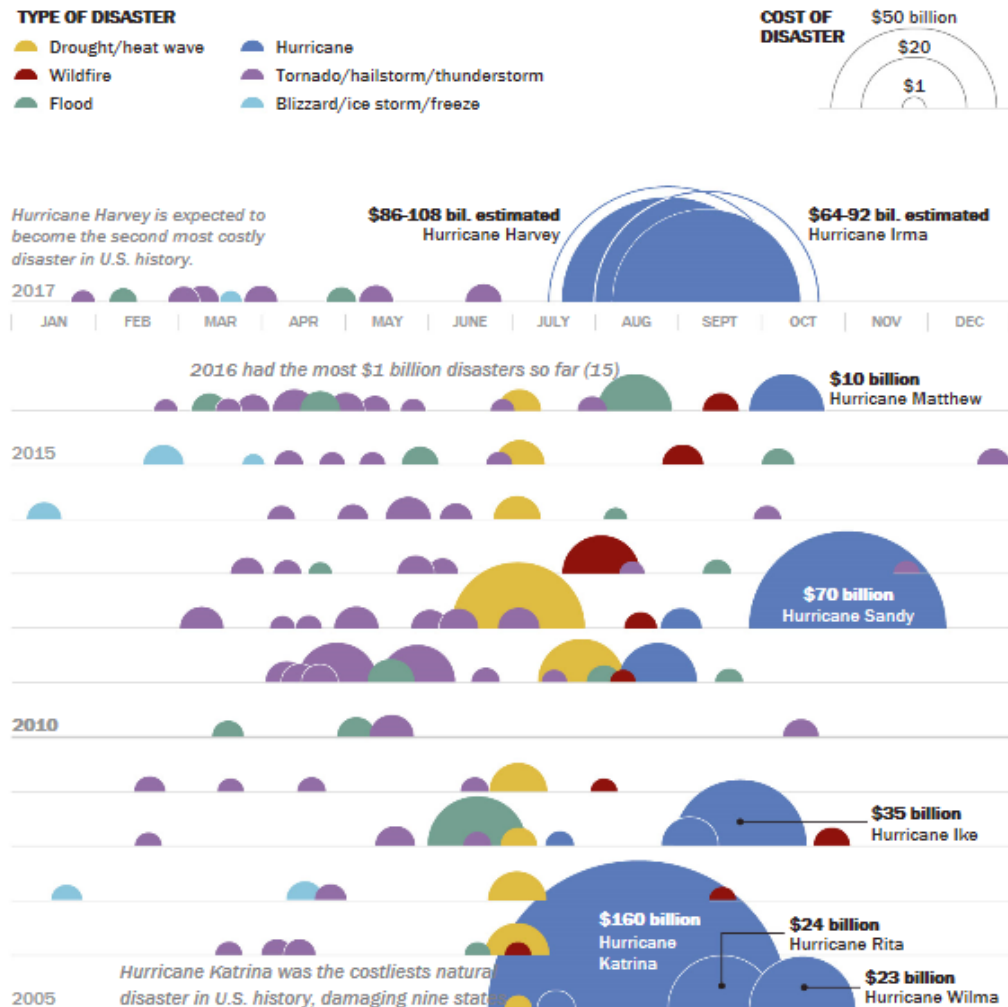
- Episodic weather events increasingly are viewed through the lens of climate change risk.
- Municipal issuers face climate change risks on two fronts:
  1. Growing cost of extreme weather events
  2. Gradual changes to the environment affecting land use, employment, and economic activity



*Source: NASA Global Climate Change*

# Impacts to Date

- \$240 billion a year at least in damage from 2007-2017
- In 2016 there were 15 climate related disasters that cost \$1 billion or more; 16 disasters in 2017.
- Graphic excludes Hurricanes like Maria and 76 wildfires in US in 4Q 2017.
- 2017 cumulative losses estimated at record \$300 billion.

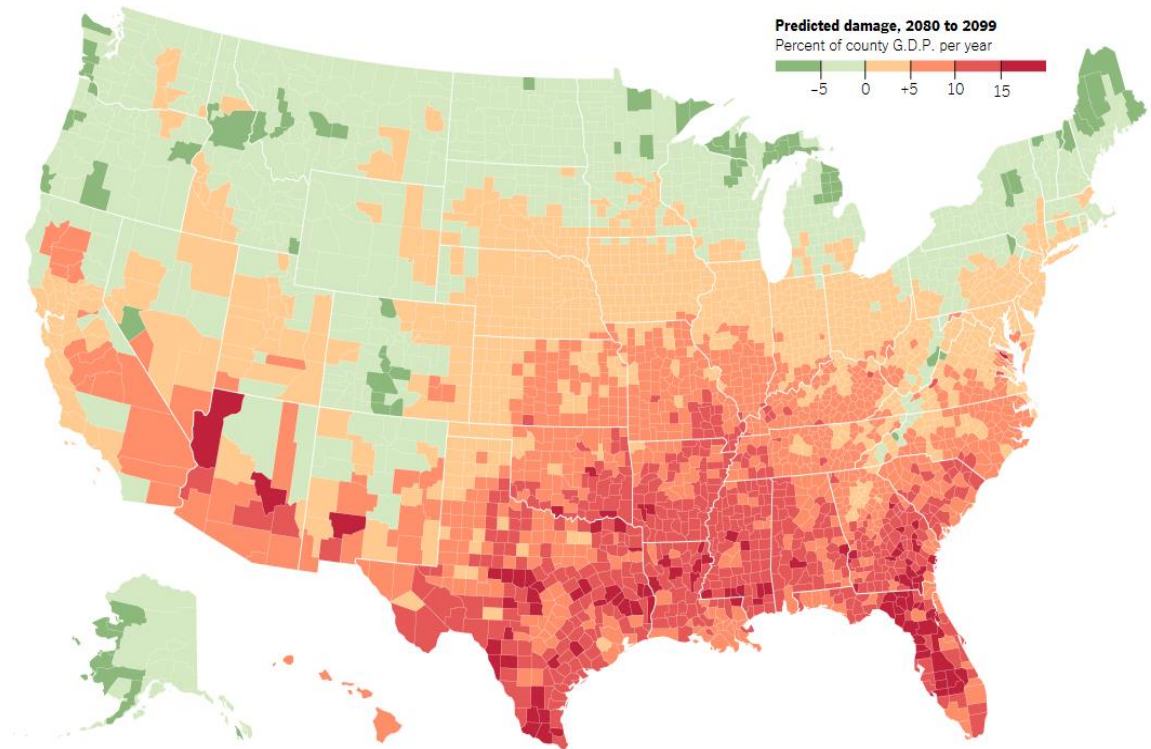


JOHN TOMANIO AND RILEY D. CHAMPINE, NG STAFF.  
 SOURCES: ADAM SMITH, NATIONAL CLIMATIC DATA CENTER;  
 JEFF MASTERS, WEATHER UNDERGROUND; NATIONAL CLIMATIC DATA CENTER



# Projected Impacts

- Estimated \$360 billion a year in climate change related events over next decade
- Coastal and southern states will be hit the hardest
- Damage is expected to be due to a combination of severe climate events and long-term environmental changes

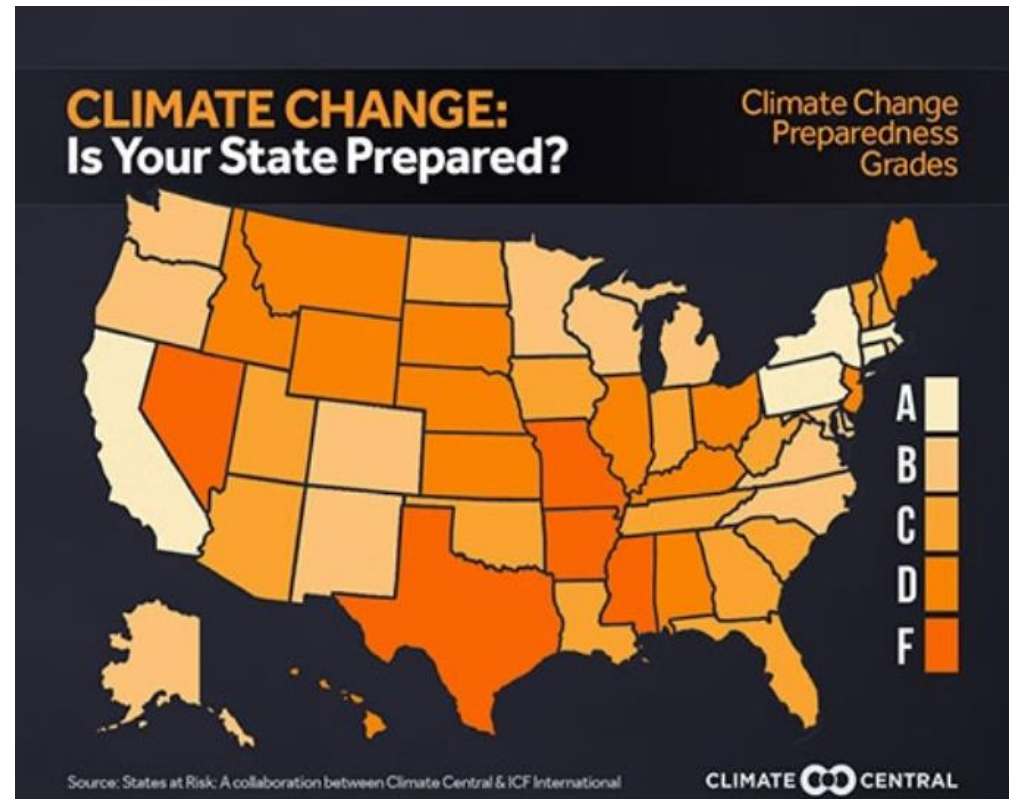


## ***Estimating economic damage from climate change in the United States***

*Solomon Hsiang, Robert Kopp, Amir Jina, James Rising, Michael Delgado, Shashank Mohan, D. J. Rasmussen, Robert Muir-Wood, Paul Wilson, Michael Oppenheimer, Kate Larsen, Trevor Houser*

# Importance of These Issues to State and Local governments and to Investors

- Important to all issuers but more so to those at greater risk
- States are recognizing the importance of this and are taking steps to manage their risk
- Investors will begin looking more and more to the climate change preparedness of states in assessing overall risk



# Corporate's Approach to Assessing Climate Change Risk

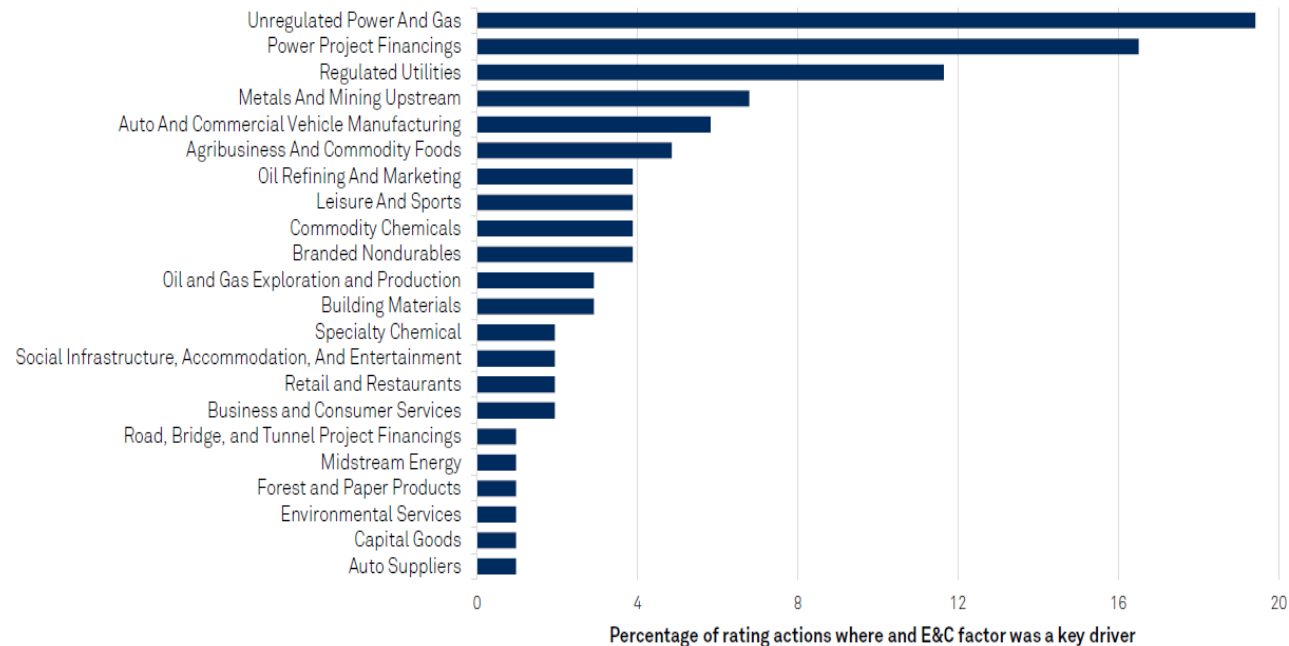




# Assessing Climate Change Risk in the Private Sector

- 717 ratings in which E&C risks were an important factor in the analysis
- ~10% of the nearly 9,000 research updates
- The majority were in oil, mining, and utility sectors.

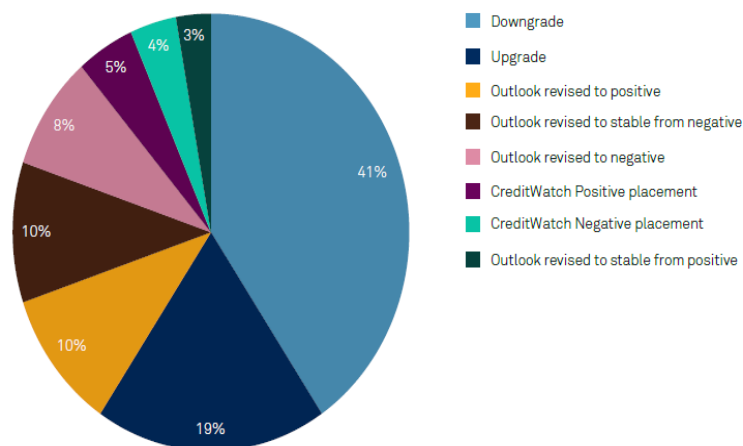
Rating Actions Related To E&C Risk By Referenced KCF



# Rating Actions Taken Due to E&C Risk

- Of these 106 research updates that listed a E&C as a key driver to the rating change:
  - 41% were downgrades
  - 44% were in the positive direction
  - 56% being in the negative direction

Rating Actions Related To E&C Risk



Source: S&P Global Ratings.

Table 1

Rating Actions Where An E&C Factor Was Key

Positive rating actions		Negative rating actions	
CreditWatch Positive placement	5	CreditWatch Negative placement	4
Outlook Revised to positive	11	Outlook revised to negative	9
Outlook revised to stable from negative	11	Outlook revised to stable from positive	3
Upgrade	20	Downgrade	43
Total	47	Total	59
Percentage of total actions in the positive direction	44%	Percentage of total actions in the negative direction	56%

Source: S&P Global Ratings.

# How Climate Change Risks Factor into Municipal Ratings



# Sources of Information/Disclosures

Recommendations And Supporting Recommended Disclosures			
Governance	Strategy	Risk management	Metrics and targets
Disclose the organization's governance around climate-related risks and opportunities	Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material.	Disclose how the organization identifies, assesses, and manages climate-related risks.	Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.
Recommended Disclosures			
a) Describe the board's oversight of climate-related risks and opportunities	a) Describe the climate-related risks and opportunities the organization has identified over the short, medium and long term.	a) Describe the organization's processes for identifying and assessing climate-related risks.	a) Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.
b) Describe management's role in assessing and managing climate-related risks and opportunities.	b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.	b) Describe the organization's processes for managing climate-related risks.	b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.
	c) Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a two degrees celsius or lower scenario.	c) Describe how processes for identifying, assessing and managing climate-related risks are integrated into the organization's overall risk management.	c) Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.

Source: The Task Force on Climate-related Financial Disclosures, Recommendations of the Task Force on Climate-related Financial Disclosures, June 29, 2017.

- Currently limited disclosures by municipalities on E&C risks/mitigation plans
- Task Force on Climate-related Financial Disclosures (TCFD) provides outline of recommended disclosures
- Eleven recommendations sorted into four focus areas: Governance, Strategy, Risk Management, and Metrics/Targets

# Factoring climate change risk into ratings

- Overall focus on management effectiveness and planning
- Sectors have unique E&C risks that apply to their assets or revenue sources
- Often a qualitative assessment when lacking detailed information



Municipal Sector	Sector Specific E&C Factors
Water/Sewer Utilities	Drought planning
Electric Utilities	Carbon Fuel Concentration
State/Local/Municipal Enterprises	Financial and Capital planning
All Sectors	Potential impacts to property values



# Assessing Municipal Resiliency

- Positive Resiliency considerations:
  - Long-term management plans with adequately funded emergency funds
  - Proper insurance coverage for the climate related risks for the region
  - Deeper and more diverse economies

“Resilience is the ability of a system and its component parts to **anticipate, absorb, accommodate, or recover from the effects of a potentially hazardous event** in a timely and efficient manner, including **through ensuring the preservation, restoration, or *improvement of its essential basic structures.***”

-IPCC 2012

# How Rating and Outlook Time Horizons Align with Long-term Climate Change Risks?

- We assess credits on a forward looking basis
  - < 2 years for speculative grade ('BB+' and below)
  - < 5 years for investment grade ('BBB-' and above)
- Many climate-related risks extend far beyond our credit ratings/outlooks
- Climate related policy will only be factored in when policy action is highly likely



# Conclusion

- Climate Change will be increasingly considered in our rating analysis.
- Challenges remain with time horizon matching and disclosure of information
- Opportunities exist for municipal entities to mitigate climate change risk through proper planning and improving system resiliency



# Q&A



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Reminder: you can submit questions to Kurt via the interface in the webcast window.