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Subject: Great Mitigation/Resiliency Experts for Responding to 2018 NOAA Hurricane Season

Friends,

Most everyone agrees that hurricanes in the US are intensifying, both in frequency and in strength. There are three key events on the radar that will give us a chance to dig into how communities can address the related challenges they are likely to face.

1) Hurricane Preparedness Week – This week is [National Hurricane Preparedness Week](#). Each day this week, organizers are highlighting one planning recommendation that individuals can undertake to ensure their families, homes and pets will be safe in the event of a hurricane or tropical storm. Just as importantly, states, cities and communities can improve upon planning to survive and recover from extreme weather.

2) FAA Reauthorization – This week, the Senate is expected to take up the House-approved, must-pass legislation to reauthorize the FAA. Included in the bill is the Disaster Recovery Reform Act (DRRA), which clarifies existing assistance programs to speed up inspections and ensure that a given percentage is dedicated to pre-disaster hazard mitigation. The goal is producing immediate and demonstrable results in fortifying our structures to withstand the destructive effects of extreme weather events.

3) NOAA Hurricane Forecast – Soon, NOAA will be releasing its widely read 2018 hurricane forecast. To add context to the NOAA forecast, it should be helpful to review the great [research](#) and experts from MIT – yes that MIT – analyzing hazard mitigation options, including initial construction costs (which go up with investments in resilience safeguards) vs. the high price we pay for repairs over the long-term due to damage from hazards.

Key Questions

From how cities and buildings should be structured to withstand extreme weather to helping engineers and developers calculate risk and mitigation costs in advance, community leaders are grappling with critical questions as they consider appropriate responses to intensifying hurricanes.

New Research on Resiliency From MIT

For those of you covering hurricanes, emergency preparedness and response, along with building/infrastructure resiliency, we can connect you with MIT's research and experts calibrating the additional costs of adequate preparation for natural disasters in hazard-prone areas of the U.S.

Between 1996 and 2014, damages in the US due to hazards (hurricanes, tornadoes, floods, earthquakes) totaled over \$377 billion, according to a National Weather Service report.

MIT's **Break-even Mitigation Percentage (BEMP)** calculation provides a risk management tool for communities to determine the break-even point for investments in mitigation. The calculation provides a suggested amount to spend (expressed as a percentage of initial building costs) given the possibility of future damage. [MIT's interactive "dashboard"](#) uses the BEMP calculation to help building designers and owners calculate the risk and level of investment needed to mitigate future building damage in their areas.

Hazard Mitigation Expert Available for Media

If you're looking for a resource to discuss hurricane building resiliency and sustainability, MIT's Jeremy Gregory is available to address key issues and impacts of the hurricane forecast, including how to mitigate the cost impacts of disasters via hazard-resistant materials in building designs that reduce lifetime repair and maintenance costs. [MIT's Concrete Sustainability Hub](#) is pushing the frontier of academic research into building materials, with implications for policymakers, building designers, communities, and the vulnerable residents of hazard-prone areas.

Finally, late last week, MIT experts conducted a webinar that explored some truly cutting-edge ways to help us improve our understanding of a city's resilience—meaning its robustness and recovery time. The approach has enormous implications for hazard preparedness. There is a great summary below.

Let me know if you're interested in any of the above issues. It is great timing to look at this very important issue.

Frank Maisano

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MIT Webinar: Improving A City's Resilience to Disasters

Some cities are laid out in a very orderly fashion, like a grid, and others are arranged more chaotically. This "texture," the term MIT scientists use to describe the layouts, reveals a lot about how a city will respond to high winds in a big storm, or to a major environmental event like a hurricane or earthquake. Their research into hazard mitigation has gone in some fascinating directions:

- Scientists and engineers are applying lessons from physics, looking at cities through the lens of complicated material structures to shed new light on ways to improve energy consumption and help anticipate their resilience in the wake of extreme weather conditions.
- The difference in texture between an orderly, grid-like city like Chicago vs. a widely varying urban landscape like Los Angeles has significant potential to determine a city's resilience.
- More orderly cities actually amplify factors like temperature, wind, and pressure far more than disorganized cities. Disparate outcomes in terms of damage to nearby cities in Florida subject to the same hurricane conditions in 2014 may be explained by their different structures.
- In order to better prepare our buildings for natural disasters and make our cities more resilient, we need to map cities to better understand their textures. A better understanding of the overall texture of a city can lead to more informed decision-making on the part of builders and urban designers.

To view the webinar, "Liquid, crystal, or glass? A new approach to city resilience," click on this [link](#).

For more information on the MIT Concrete Sustainability Hub, visit their site [here](#).

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