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The Resilience Roundup highlights CIRCA's presence in the news, provides links to recent local/state/national news articles related to resilience and adaptation, and announces upcoming events and seminars.

Resilience Roundup

November 10, 2015

A service of the Connecticut Institute for Resilience and Climate Adaptation (CIRCA)

CIRCA in the News

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- **October 29, 2015** - *Malloy Creates Group To Tackle Storm Preparedness In Connecticut*, Hartford Courant

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- **October 23, 2015** - *How Did Hurricane Patricia Become A Monster So Quickly,* HuffPost Green

Announcements

- **November 15, 2015** - Next review date for CIRCA Matching Funds Program. Up to $100,000 available. For more information go to http://circa.uconn.edu/funds.htm
- **November 16 & 20, 2015** - Exploring Climate Solutions Webinar Series. Governor's Council on Climate Change. Upcoming webinars on November 16 & 20. Register here.

- **November 20, 2015** - Notice of Funding Availability from CT Dept. of Housing CDBG-DR Tranche 2, *Planning funds to address improved resiliency to Infrastructure and Public Facilities in Fairfield, New Haven, New London and Middlesex Counties*. Applications due November 20, 2015
- **December 1- 2, 2015** - Registration Now Open. Living Shorelines: 1st National Technology Transfer Meeting and Regional Workshops, Hartford, CT. Sponsored by CIRCA and Restore America's Estuaries
- **April 10-13, 2016** - Save the Date. Keeping History Above Water. A national conference in Newport, RI. More information.

CIRCA in the News

October 30, 2015 - Researchers tackling Flood Maps, UConn Today

Connecticut's vital infrastructure will drown over the next few decades unless the state does something to stop it. And, the first step is improving flood maps, according to UConn's Manos Anagnostou.

Anagnostou, professor of civil and environmental engineering, and his colleagues have been working on a model that can predict inland flooding along creeks and rivers, as well as flooding along the coastline and harbors. Eventually the model should be able to simulate flood risk down to the scale of individual neighborhoods.

Connecticut legislators heard about Anagnostou's project and others during a briefing at the Connecticut Institute for Resilience and Climate Adaption, held Thursday, Oct. 29, at UConn's Avery Point campus.

The maps currently used by the Federal Emergency Management Administration (FEMA) to assess flood risk are like a paint roller compared to the UConn model's fine brush, said Anagnostou, who is also working with the agency to integrate sea level rise into the federal maps.

Legislators said the information generated by research and projects led by the institution would give them another tool to help citizens and regulators understand the risks Connecticut communities face.

"Every time you get a significant storm, you'll get whacked. How do you want to deal with that?" said Rep. Jonathan Steinberg of Westport, which has large tracts of valuable older homes in vulnerable, low lying areas.

Other research projects discussed at the briefing included wave prediction, tidal flow constrictions engineered to be environmentally sensitive, and a proposal to win federal funding in the National Disaster Resilience Competition. The application asks for $115 million to move roads and walkways in low-lying areas to nearby higher ground in order link areas that might otherwise be cut off by rising waters.

In addition to Steinberg, several legislators attended from coastal communities, where Interstate 95 and the railroad tracks used by MetroNorth and Amtrak run by the water, in some cases less than 10 feet above current sea level. They included James Albis, Kathleen McCarty, Lonnie Reed and Deputy Speaker Kevin Ryan, as well as Senate Minority Leader Len Fasano, Sens. Paul Formica, Ted Kennedy Jr. and Andrew Maynard.

"This is part of our new reality," said Robert Klee, commissioner of the Department of Energy and Environmental Protection (DEEP).

Just a few days before the event, Gov. Dannel Malloy signed an executive order making a permanent working group responsible for strengthening Connecticut's resilience to climate change. Several members of the working group are also members of the Connecticut Institute

for Resilience and Climate Adaptation.

The institute is a collaboration between UConn, DEEP and the National Oceanic and Atmospheric Administration. The goal is to bring together experts from a wide range of disciplines-scientists and regulators, lawyers and engineers-to develop smart, effective solutions to practical problems that affect many municipalities in the state.

"It's the most unique state government-state university collaboration I have ever seen," said Jeffrey Seeman, UConn's vice president for research.

October 29, 2015 - Malloy Creates Group To Tackle Storm Preparedness In Connecticut, Hartford Courant

HARTFORD - Gov. Dannel P. Malloy is establishing a permanent working group focusing on strengthening Connecticut's resiliency in extreme weather events, including hurricanes, ice storms and rising sea level.

The Democrat announced Thursday he has signed an executive order creating the Safe Agencies Fostering Resilience Council or SAFR Council. The 12-member group, to include state agency heads and experts, will be charged with creating a Statewide Resilience Roadmap based on climate change research and data.

The council will also advise the state's Office of Policy and Management on creating a state policy on disaster resilience.

Malloy said the working group has already improved communications and planning within state government. By making it permanent, he said there will be a formal body that can respond quickly to protect infrastructure systems.

PRESS RELEASE

Local & State News Clips

November 8, 2015 - *New Storm Preparation Center Pairs UConn, Power Company*, Hartford Courant

STORRS - Two days before Superstorm Sandy struck Connecticut in 2012, UConn scientists fed measurements from the storm and historical data from others into a computer model they developed and forecast where the most damage and power outages would occur.

Their forecast was very accurate in predicting both the scope and the location of the outages: The model predicted 13,500 damage locations; the storm created about 15,000.

Now, Eversource, the state's largest electric utility, and the university have now teamed up to create a center devoted to studying ways to better predict and prepare the state's power infrastructure for natural disasters.

The Eversource Energy Center at the University of Connecticut officially opened last month after getting approval from the school's board of trustees. It includes faculty and graduate students in environmental, civil, electrical and structural engineering, computer science and forest management.

In addition to storm forecasting, the center's scientists will study the resiliency of the state's electric infrastructure and the trees that grow near power lines.

Eversource has committed $9 million over five years to fund the center, an investment the utility believes will pay off.

"If we can shave hours off small events and days off large events by prestaging the right amount of resources, by making our vegetation management and infrastructure hardening programs better and more cost effective, I think it could pay back several times over," said Ken Bowes, Eversource's vice president of engineering.

Center director Emmanouil Anagnostou, an environmental engineering professor, says the center also will eventually include the university's business school, which will help Eversource with risk analysis, deciding where to spend money on reinforcing the system and creating an optimal storm response plan.

There are other power companies working with scientists at schools across the nation on vegetation or storm forecasting issues, Anagnostou said. But the UConn center is the first to combine multiple disciplines to attack the problems in one place.

He said they hope the center will help attract students and grant money, and give current graduate students some real-world experience that will help them land jobs.

The center will refine the school's storm forecasting model with data from each subsequent event, making it easier to predict where winds, rain, tides, snow and ice are likely to present the most problems, Anagnostou said.

The school put the power-outage forecast model to work last month for a relatively small coastal storm.

"It predicted a midrange of about 350 trouble spots and we ended up with about 400 trouble spots," Bowes said. "So, it's pretty accurate."

For now, the storm prediction model is being shared only between the school and Eversource. But as it becomes refined the center may decide to share its predictions with the public to alert home and business owners in areas projected to be hard hit, officials said.

Scientists at the center also are using laser technology to create 3D maps of the state's electric infrastructure and surrounding vegetation that can show the size of trees and where they are relative to power lines. It also will show whether power poles are leaning and may be vulnerable.

And natural resources scientists are putting computer sensors on trees that measure out how the different species react to wind, rain and ice - whether standing alone or in a forest.

"About 90 percent of our electrical outages are related to down trees or tree limbs breaking," said Bowes. "And we're hopeful that with this research we'll be able to prune and trim the right trees, not all the trees."

November 5, 2015 - *Plan: Protect shoreline's history from storms*, CT Post

When storms like Superstorm Sandy and Tropical Storm Irene strike they can also take wash away part of the state's history.

On Thursday, Gov. Dannel P. Malloy announced a series historic preservation initiatives that will help protect historic sites along Connecticut's shoreline. Projects include items such as surveys of historic neighborhoods and the development of a mobile app for owners of historic homes on the coast.

"This funding will help us respond quickly and strategically should we face another devastating event," Malloy said in a release. "Connecticut is committed to safeguarding the state's unique cultural heritage even as it addresses the coastal resiliency challenges of the 21st century.

These are important, preparatory steps forward, and we're pleased these federal dollars can be used to help so many areas along the coastline."

A phase of the $4.1 million project includes:

Surveys and inventories of historic sites and structures in selected towns, a searchable database of documented historic resources, a resiliency plan for coastal communities, a survey of historic dams and associated resources, re-evaluation of archaeological sites affected by Superstorm Sandy and the identification of sites threatened by future storms and sea level rise, a nautical archaeological survey and assessment of storm damage to shipwrecks in Connecticut waters, development of a geospatial database of historic properties, a history of coastal building elevation in Connecticut and elevation guidelines for property owners, an app for surveys of historic cemeteries and a history of nineteenth and twentieth century architecture in coastal Connecticut.

"Connecticut stands to gain from these innovative projects in many ways," DECD Commissioner Catherine Smith said. "State agencies and municipalities will be better prepared to respond to future disasters, more properties will be eligible for disaster relief funding, and perhaps most importantly, resiliency efforts can be targeted wisely, ensuring historic assets will stand for generations to come and tell the story of Connecticut's history."

The program is administered by the Department of Economic and Community Development's State Historic Preservation Office, in partnership with the National Park Service. Following damage the state experienced from Super Storm Sandy, Congress awarded Connecticut $8,014,769 for disaster relief projects in the coastal counties. Funds were granted to SHPO through the Park Service's Historic Preservation Fund.

October 30, 2015 - *Greenwich's salt marshes may be drowned in the sea, report says*, Greenwich Times

Rising sea levels will "drown'' the salt marshes that protect Connecticut coastal communities by 2080, causing marsh areas to advance inland and flood existing roads, homes and businesses, according to a new study.

The study, "Salt Marsh Advancement Along Connecticut's Coast," was prepared by the Nature Conservancy to examine different environmental outcomes related to rising sea levels. The report, according to its authors, is designed to help "decision-makers explore flooding scenarios from sea-level rise and/or storm surge."

The report looks at the conservation of marshland as "a cost effective, long-term part of the solution that will protect people, infrastructure and natural systems from extreme weather and climatic change."

The loss of salt marshes could cause major problems in Greenwich, says Sue Baker, a marine biologist and educator. According to a Nature Conservancy study, Greenwich has 863.8 acres of marshes.

"We have already had kind of an assault on our salt marshes in recent decades. We've lost some of them already," she said. "They're so important. They're the border between the land and the sea."

Loss of salt marshes will make inland flooding more extensive, Baker said.

The new study shows that in 65 years, even sections of Interstate 95 may be routinely flooded twice a day at high tide.

According to Baker, a former teacher at Greenwich High School, the loss of salt marshes would open the way for more flooding in lowland areas in Greenwich.

"They create a wonderfully spongy substance, they're a wonderful barrier," Baker said. "Flooding will definitely be a problem."

Aside from their properties to absorb storm surges, Baker notes, "They're a really valuable habitat, for all kinds of wildlife."

The Nature Conservancy report says coastal cities will face major challenges if sea levels rise. Some cities, like Bridgeport and New Haven, have structures that may have to be abandoned or relocated in the coming years. A portion of I-95 that runs along the Long Wharf area of New Haven could be regularly flooded by 2080.

The environmental organization said preservation of shoreline habitats should be a public-policy priority. The organization cites a study that found every $1 spent on preparation can save taxpayers $4 in natural disaster costs.

The report includes maps of the projected coastal impact in Milford, Stratford, Bridgeport and other shoreline Fairfield County communities.

Preserving open space to allow new marshes and dunes to be created will afford more protection for inland areas from extreme weather, but much of the land needed for that is currently developed, the study found.

October 29, 2015 - *Survey: 7 in 10 Americans believe in solid evidence of global warming*, Hartford Courant

Severe drought affecting many parts of the nation is convincing skeptics of global warming to reconsider their position on the matter.

For the first time since 2008, 7 out of 10 Americans indicate that there is solid evidence of global warming, according to a report from the National Surveys on Energy and Environment. This is a 10 percent increase from last fall and just behind the record 72 percent in 2008. More than 60 percent of those who believe global warming evidence cite severe drought as having a "very large effect" on their stance.

Dr. Nancy Selover, the state climatologist for Arizona, said there is good science supporting the public's belief in global warming, "We're seeing warming in different areas and in some cases we're not necessarily seeing evidence of extreme events, but continuously warmer temperatures," she said, adding that drought is not a good indicator of global warming.

"We have cycles of drought that come and go. In the 20th century, we had a 37-year wet period that followed an extremely short dry 10 years ... and now we're in a 21-year dry period," said Selover.

Regardless of whether drought is proof of climate change, environmentalists are encouraged by the study's finding of increased acceptance of global warming.

"The misinformation that came out confused some people for a bit, but eventually people figured it out. A lot of that is due to good scientists getting that information out," said Sandy Bahr, director of the Sierra Club Grand Canyon Chapter.

"It's hard to get action if people don't think there is a problem. No matter what the problem is, you have to acknowledge that there is one. Then, the next step is to figure out the kinds of actions that we can take to address it," said Bahr.
The report also found:

56 percent of Republicans believe there is solid evidence of global warming, up 9 percent from 2014. Seventy-nine percent of Democrats and 69 percent of independents believe in global warming.

Of those who believe in global warming, a record 65 percent say they are "very confident" in their belief.

Of those doubtful of global warming, a record 34 percent say local weather observation has "no effect" on their views. In previous surveys, "large majorities of Americans who do not believe there is evidence of global warming have pointed to local weather observations as the basis for their position."

Larky Hodges, who speaks to groups about climate change, related the issue to the tobacco industry.

"You know how long it took people to understand that cigarettes cause cancer. And you know that was all a misinformation campaign. It's the exact same problem," he said.
Hodges said the issue should transcend political affiliations.

"If you see a flood coming down the road, you're going to be sandbagging with all of your neighbors whether they're Democrats or Republicans," she said. "We should all be in this together and people just have to look past the partisan politics and say what's best for me and my children."

October 28, 2015 - *Strong winds, flooding roads remind residents of Superstorm Sandy*, News8

EAST HAVEN, Conn. (WTNH) - The relentless Wednesday winds have died down in East Haven, but that's not stopping residents there from remembering a storm that brought so much damage and devastation to areas around the Northeast.
It has been three years since Superstorm Sandy hit the Connecticut shoreline. While the damage from that storm destroyed homes and businesses, most of the damage Wednesday was contained to vehicles in the area.
Residents on the shoreline tell News 8 that they haven't seen flooding like this since Sandy touched down. "It came in so fast. I went out to run an errand and when I came back the water was already up, so it was bad," said Dave Levenduski.
In the aftermath of Sandy, residents rebuilt their homes and had them elevated up to 15 feet, which helped contain the property damage to vehicles.

October 28, 2015 - *3 years after Superstorm Sandy, what's fixed and what's not*, CTpost

Boardwalks have been rebuilt, sea walls erected, bays cleared of debris and thousands of homes restored three years after Superstorm Sandy pummeled coasts of New Jersey and New York. Yet the rebuilding effort is not finished. Many homes still need to be repaired or rebuilt. Crucial work to shore up infrastructure is ongoing, or still hasn't started.

HOMES
Many seaside communities hit hard by Sandy show few obvious signs of the disaster. But look closer and you can still find stray buildings with boarded-up windows and sandy lots where houses were demolished and never rebuilt. Neither the federal government nor the states keep reliable statistics on how many damaged homes and businesses are still vacant or in need of repair. More than 8,000 homeowners remain active in New Jersey's main rebuilding grant program. In New York City's Breezy Point neighborhood, 62 of the 355 homes destroyed by flood and fire have yet to be rebuilt. Thousands of homeowners are still fighting with their insurance companies over the cost of repairs. Many homes along the coast have been elevated to get them out of harm's way for the next big storm, but many more have simply been rebuilt as they were, leaving owners vulnerable to both future storm surges and rising insurance premiums.

TRANSPORTATION
Sandy's salty floodwaters did lasting damage to the tunnels that carry trains and cars beneath

New York City's rivers. Manhattan's destroyed South Ferry subway station is still being rebuilt and won't reopen until 2018. A vehicle tunnel linking Manhattan to Brooklyn will be closed on weeknights for the next three years for rehabilitation. Of nine damaged subway tunnels, seven still need major work. The Metropolitan Transportation Authority, which runs the subway system, is spending $3.8 billion on repairs and anti-flooding measures. The Port Authority of New York and New Jersey is still evaluating long-term repairs to its road and rail tunnels beneath the Hudson River. Amtrak was been warning that its tunnels in and out of Manhattan also need major rehabilitation. Taking them out of service for repairs in the coming years could cause major disruptions in rail service on the corridor between Washington and Boston. New Jersey has rebuilt Route 35, the second-busiest north-south highway along the Jersey shore.

TOURISM
All but one of the Jersey shore's famed beach boardwalks have been rebuilt; the last one, in Long Branch, is underway. They were among the first tangible signs of recovery; shore towns made rebuilding the walkways a priority to show residents things were getting back to normal. (A storm-wrecked boardwalk in Seaside Heights, where the MTV show "Jersey Shore" was filmed, was rebuilt twice; part of it caught fire in 2013). In New York City, the Rockaway Beach boardwalk is still being rebuilt, this time with flood defenses that include baffle walls to hold back the surf. Manhattan's South Street Seaport is still being rebuilt. The National Trust for Historic Preservation recently put the district on its list of most endangered historic places in the country because of the ambition of the redevelopment plans.

FLOOD PROTECTION
Many billions of dollars are now being spent to protect critical infrastructure from future storms, including electrical utilities and water and sewage treatment plants. In Sea Bright, New Jersey, repairs are being made to a damaged oceanfront rock sea wall, but other hard-hit communities' storm protection plans remain on the drawing board. The cost of storm-proofing low-lying urban areas could be astronomical. The federal government sponsored a $1 billion contest to promote innovative protection systems, including breakwaters, berms and drainage canals that can keep water out of low-lying parts of New York City, and riverside New Jersey cities like Hoboken and Weehawken.

HEALTH CARE SYSTEM
A slew of hospitals, nursing homes and clinics that had to be evacuated and temporarily closed because of the storm are back in business, but many are still restoring damaged infrastructure or replacing it with something more flood-resistant. The Federal Emergency Management Agency has given New York City hospitals more than $2.7 billion to restore their campuses and do things like build new floodwalls and relocate emergency generators. One damaged full-service hospital, in Long Beach, New York, never reopened after the storm, although the island now has an emergency room.

October 26, 2015 - *Study: Parts of Conn. Coast To Be Underwater by 2080*, WSHU Public Radio Group

A new study finds rising sea levels will put thousands of acres of land in coastal Connecticut underwater at high tide by the year 2080.

The study, released Friday by the Nature Conservancy, says by 2080, about 24,000 acres of currently dry land in coastal Connecticut will be underwater twice a day at high tide.

Adam Whelchel, Director of Science at the Nature Conservancy, said nearly a third of that land is developed. That means during high tide, sea water will get into buildings like schools, churches and houses in the 29 Connecticut cities and towns that border Long Island Sound. It'll also reach parts of Tweed New Haven Airport, the Millstone Nuclear Power Plant in Waterford, and sections of I-95.

"What the future will involve is a lot of water in a lot of different places, and learning to accommodate water and living with daily tides in places where they don't exist now in these coastal municipalities," he said.

Whelchel said to accommodate that water, Connecticut will need to raise roads and build stronger drainage systems. In places that haven't been developed, he said cities and towns might have to reconsider whether to allow anything to be built there at all.

The study is based on projections from NASA climate scientists. It's part of a series of coastal resiliency studies the Nature Conservancy started in 2007. Whelchel said a study showing the same information for Suffolk County on Long Island is planned to be released early next year.

National News Clips

November 2, 2015 - *New York Prepares for Up to 6 Feet of Sea Level Rise*, Climate Central

LaGuardia Airport is about to be rebuilt in New York City, but by the end of the century, fish could be swimming where airplanes once parked at the terminal. That's because sea levels in the area could rise by as much as 6 feet over the next 75 years, according to new predictions released by the state of New York.

New York State environment officials announced Friday that they're creating new sea level rise regulations that will help coastal communities build more resilient homes and other buildings that will be better able to withstand storm surges and other flooding made worse by rising seas driven by climate change.

The new regulations will require developers in New York City, along Long Island and on the shores of the Hudson River to prepare for sea levels that could rise between 15 and 75 inches by 2100. At the far end of that scale, many of the areas hit hard by Hurricane Sandy - the Rockaway Peninsula and the shores of Staten Island, for example - could be underwater.

In addition to increasing temperatures and more frequent extreme weather, rising seas are expected to be among the most destructive effects of climate change. If greenhouse gas emissions are left unchecked, most of the U.S. population could be affected by rising seas, submerging some of America's most famous icons, such as Wall Street, New Orleans and the Everglades.

About 500,000 people live on the 120 square miles of land that lie less than 6 feet above the mean high tide line in the state of New York. More than $100 billion in property value exists in that area.

The sea level rise projections were created as part of New York's Community Risk and Resiliency Act of 2014, which requires the state to set official sea level rise projections for the end of the century. It also requires many building permit applicants to consider future flooding risks posed by rising seas.

The sea level rise range the state uses comes from a study conducted by Cornell and Columbia universities and Hunter College showing that rapid melting of the Greenland and Antarctic ice sheets could raise sea levels much faster and much higher than previously expected.

The study projects that sea levels could rise between 15 and 72 inches at Montauk Point on the eastern edge of Long Island, and between 15 and 75 inches in New York City. The level of the Hudson River near Albany, more than 150 miles inland from New York Harbor, could rise by up to 71 inches.

Cynthia Rosenzweig, study co-author and senior research scientist at the NASA Goddard Institute for Space Studies and Columbia University's Center for Climate Systems Research, said the state's use of the study ensures consistency between resilience planning at both the state and city levels because New York City's climate change panel is using the same methods to determine the threat from sea level rise.

"The New York State sea level rise projections, developed using state-of-the-science methods, will provide the best available climate risk information for decision makers throughout the state," she said.

Daniel Zarrilli, director of the New York City Mayor's Office of Recovery and Resiliency, said in a statement that accurate science is critical to effective climate adaptation.

"These coordinated projections, which also inform the city's investments, will support critical work of making investments in climate adaptation and resiliency across the entire state," he said.

October 29, 2015 - *Norfolk, pushed by sea-level rise, re-thinking the future of the city*, The Virginian-Pilot

Norfolk has earned a dreary distinction of late. It's become one of the top destinations around the world for journalists seeking a poster-child city for the perils of sea level rise.

But city leaders Wednesday verged on embracing that notoriety with the unveiling of a strategy to tackle the problem harder.

One goal of the plan: Build an entire new industry around engineers and other experts who figure out ways to adapt to rising seas right here and then export that expertise worldwide.

That idea is among a slew of initiatives outlined in what's being called Norfolk's "resilience strategy." The 60-page document was published Wednesday on the city's website and outlined at the Slover Library downtown at an event that drew some 100 business and community leaders and city officials.

A Rockefeller Foundation program paid for the effort. Norfolk is one of what eventually will be 100 cities worldwide in a Rockefeller initiative to help communities develop strategies for overcoming major problems. It's the third, behind New Orleans and New York, to put its strategy into a document.

Nearly two years' worth of workshops, surveys and one-on-one conversations with neighborhood leaders and other movers and shakers helped shape the Norfolk plan, into which the Rockefeller program estimates it has invested $1.7 million.

In Norfolk's case, sea level rise is problem No. 1. But Christine Morris, the city's chief resilience officer, said the strategy goes well beyond that issue: "There's a huge opportunity to rethink the future of Norfolk."

In its document, touted as the first stab in what will be a continually developing plan, the city enveloped dozens of initiatives, some under way, some about to launch. They range from beefing up programs to encourage entrepreneurs to start businesses to overhauling the zoning code so neighborhoods can develop more unique personas.

Part of the process of developing the strategy, city leaders said, was fessing up to Norfolk's shortcomings. In addition to rising seas, the city is plagued by the region's highest level of income inequality: Nearly 1 in 5 residents live in poverty. And Norfolk, overly dependent on a shrinking military, is lagging toward the bottom among cities nationwide in job growth.

Mayor Paul Fraim and other leaders said Norfolk has an opportunity to take some of the problems and turn them into gains.

In redesigning the city to adapt to surging tides, neighborhoods that have become isolated can be reconnected, Fraim said. A new industry whose focus is adapting to sea level rise could help create jobs to replace those lost should the military presence continue to shrink, suggested Andrew Salkin, chief operating officer of the Rockefeller Foundation's "100 Resilient Cities"

initiative.

Along with the strategy, Norfolk launched a program called "Resilient City Builders" that recognizes agents of positive change. Among those announced Wednesday was Cheryll Sumner, president of the Chesterfield Heights Civic League. She worked with representatives of the nonprofits Elizabeth River Project and Wetlands Watch to develop a plan that aims to reduce persistent street flooding in her neighborhood. It includes holding rain runoff in planters, barrels and yards and replacing concrete sidewalks with brick pavers, through which more water can percolate.

"Instead of trying to move the water away, they figured out a way that the water and the structures can work together," Sumner told those at Wednesday's event.

Norfolk's acknowledgment of the problems facing it and the resolve city leaders and others have shown so far to overcome them have been noticed by other communities in the Rockefeller program, Salkin said. Cities from Rotterdam to Bangkok have begun regularly including Norfolk in consultations on flooding issues, for example, he said.

"Your influence is going to be and has been felt by others," Salkin said.

October 28, 2015 - *Think Beyond Homes and Roads to Better Prepare for Climate Change*, The New York Times

With natural disasters, as with wars, we tend to fight the last one. While preparing for another Katrina or Sandy is important, we also need to be ready for future climate change impacts, such as heat waves and droughts. This means developing climate change scenarios and using a range of planning, design, and economic investment tools to increase the resilience of our homes, businesses and infrastructure.

The communities and neighborhoods that cope best with disasters are those with effective community organizations and neighbors who watch out for each other.

For instance, in New Orleans, thanks to multibillion dollar investments in levees, sea walls and pumps, the city is now better protected from floods. But it's still vulnerable to storm surges because of the loss of hundreds of square miles of protective wetlands.

We can work to restore wetlands and use now-vacant lots as "rain gardens" - catching water during intense storms. Such nature-based approaches would both buffer New Orleans from surges and support wildlife habitat, commercial fisheries and recreational opportunities.

New York City is creating protective parkland and making important changes in building codes and local regulations post-Sandy, such as elevating buildings and requiring mechanical and electrical equipment to be moved from flood-prone basements to higher levels. Through its OneNYC Plan and with federal support, the city is also making improvements to public housing - targeting resilience efforts to support low-income communities, which are often disproportionately affected by extreme weather.

But we need more than new investments in infrastructure. The communities and neighborhoods that cope best with disasters are those with strong "social capital" - things like effective community organizations and neighbors who watch out for each other. That's why coping with climate change means building stronger communities outside times of crisis. New Orleans now has lists of those needing rides out of the city for themselves and their pets in future evacuations, and has partnered with the nonprofit Evacuteer to create 17 "EvacuSpots" around the city to help those who need rides to safety. Chicago is targeting outreach to the most vulnerable people and neighborhoods facing heatwaves like the one that killed more than 700 people in 1995.

One more key step: better federal policies. Federal rules often prevented communities from rebuilding in better and stronger ways because funds could be used only to pay for exact

replacements of buildings and roads. Still, with new federal standards for building in floodplains and innovative competition such as Rebuild by Design and the National Disaster Resilience Competition, it's encouraging to see federal disaster recovery dollars being used more wisely.

October 27, 2015 - *Historic high tides from supermoon and sea level rise flood the Southeast coast*, The Washington Post

Ocean water surged into neighborhoods on the Southeast coast on Tuesday morning during high tide, pushing gauges well beyond predicted levels. Seemingly overnight, spurred by sea level rise, we've entered an era where king tides compete with hurricanes in the water level record books.

Tuesday morning's high tide peaked at 8.69 feet in Charleston, over a foot and a half higher than the predicted level. The highest crest on record in Charleston was 12.56 feet on Sept. 21, 1989 - the day that Hurricane Hugo made landfall in South Carolina.

The water level near Savannah, Ga., reached 10.43 feet, which was the third highest on record for the station. The top two records are 10.47 feet on Aug. 11, 1940, when a Category 2 hurricane made landfall on the Georgia and South Carolina coast, and 10.87 on Oct. 15, 1947, when Hurricane Nine made landfall in the same location.

Residents are saying Tuesday's high tide was worse than South Carolina's "1,000-year flood" in early October.

A combination of factors led to the inundation, including peak astronomical tide during a supermoon, onshore winds, a slowing Gulf Current and sea level rise.

According to a recent sea level rise report by the Union of Concerned Scientists, days with tidal flooding in Charleston have increased from two or three per year in the 1970s, to 10 or more now. NOAA reports that less destructive, "nuisance" flooding has increased by 400 percent in Charleston since the 1960s alone.

And the future is even wetter. Charleston is "also expected to face extensive flooding from tides alone by about 2030, because of sea level rise," the UCS study says. "In places such as Charleston ... less than half a foot of sea level rise will mean that high tides alone could flood substantial areas up to two dozen times per year."

The same flavor of record-breaking coastal flooding has inundated parts of the Miami area over the past month, says Brian McNoldy, our tropical weather expert and Miami resident. "Since records began in 1996 at Virginia Key, the top four high-water events have all been associated with nearby hurricanes, and typically ones that coincided with the September and October king tides," McNoldy wrote. "But on Sept. 27, the fifth highest water level was measured at the location, and there was no influence from a hurricane."

Tides will continue to run higher than normal along the East Coast through Wednesday as the supermoon goes completely full, but the worst flooding is likely over for the South Carolina and Georgia coasts.

October 23, 2015 - *How Did Hurricane Patricia Become A Monster So Quickly?*, HuffPost Green

WASHINGTON (AP) - Hurricane Patricia zoomed from tropical storm to record-beater in 30 hours flat like a jet-fueled sports car.

Why? The Pacific storm had just the right ingredients.

Plenty of warm water provided the energy what meteorologists call explosive intensification. The

air was much moister than usual, adding yet more fuel. And at the same time, upper-level crosswinds - called shear - that restrain a hurricane from strengthening were missing for much of Thursday, meteorologists said.

"I was really astounded," said MIT meteorology professor Kerry Emanuel. "It was over the juiciest part of the eastern Pacific."

El Nino's fingerprints are all over this, meteorologists agreed. And while it fits perfectly into climate scientists' theories of what a warming world will be like, they say global warming can't quite be blamed - yet.

At 10 p.m. EDT Wednesday, Patricia was a tropical storm off Mexico with 65 mph winds that forecasters expected to intensify rapidly. In fact, one forecast gave it a 97 percent chance of getting stronger fast.

But it strengthened so quickly that many were surprised, said Robert Rogers at the National Oceanic and Atmospheric Administration's Hurricane Research Division.

By 4 a.m. EDT Friday Patricia's winds were a record for hurricanes: 200 mph.

"Incredible. You don't see many like this," said former hurricane hunter meteorologist Jeff Masters, meteorology director of the private Weather Underground. "In fact in the Western Hemisphere, we've never seen anything like this."

In the Eastern Hemisphere, satellite estimates measured Typhoon Nancy at 215 mph in 1961 and Typhoon Violet at 205 mph also in 1961, but satellite measurements aren't as precise, Masters said. (Hurricanes, typhoons and cyclones are all the same thing with different names.) Super Typhoon Haiyan that devastated the Philippines in 2013 was measured at 195 mph via satellite. However, most storms don't have accurate measurements because most don't get planes flown into them unless they are a threat, Emanuel said.

He's part of an experiment with the U.S. Navy, dropping measuring devices from planes into Patricia for the past three days.

Worldwide, this is the ninth Category 5 storm this year, which is tied for the second most on record, Masters said. Normal years are around five to six. A Category 5 storm has winds of 157 mph or higher.

The eastern and northern Pacific regions have had more tropical storms than usual this season; the Atlantic has had less.

That's a classic signature of the weather pattern called El Nino - with warmer waters to feed storms and favorable winds in the Pacific and unfavorable winds in the Atlantic, Masters and others said.

Patricia is being fueled by near-record warm 87-degree Pacific waters at the surface that ran warm unusually deep.

Climate science theory says that as the world warms, the most extreme storms will get even stronger and wetter.Patricia's record strength is "consistent with what we say" but there are too few examples to make a scientifically accurate connection, Emanuel said.

Patricia and Haiyan from 2013 may be "warning signs that, hey this could be the future," Masters said.

Announcements

November 15, 2015 - Next review date for CIRCA Matching Funds Program. Up to

$100,000 available. For more information go to http://circa.uconn.edu/funds.htm

The CIRCA Executive Steering Committee is excited to announce its fourth round of funding under the Matching Funds Program - up to $100,000 is available. CIRCA will consider requests from Connecticut municipalities, institutions, universities, foundations, and other non-governmental organizations for matching funds for projects that address the mission of the Institute. To be funded, a successful Matching Funds request must have a commitment of primary funding within 6 months of the CIRCA award announcement, or have received a waiver from the CIRCA Executive Steering Committee. CIRCA Matching Funds will provide up to 25% of the primary funder's contribution other than municipal or State of Connecticut funds to enhance the likely success of project proposals that advance CIRCA research and implementation priorities. In evaluating proposals preference will be given to those that leverage independent funding awarded through a competitive process.

November 16 & 20, 2015 - Exploring Climate Solutions Webinar Series. Governor's Council on Climate Change. Upcoming webinars on November 16 & 20. Register here.

The series explores innovative and successful climate change solutions across Connecticut and the nation. The webinars provide first-hand accounts of high-profile municipal climate programs, climate initiatives in the corporate world, new greenhouse gas reporting frameworks, statewide sustainability programs, low-carbon fuel initiatives, and other programs and projects that help reduce greenhouse gas emissions and/or improve climate resilience.

The webinars are free and open to the public. Registration required. Attend scheduled webinars from any computer connected to the web. During the webinars, attendees may submit questions for the presenters to answer.

Portland, OR, Equity Work Group (new date)
November 16, 1:00 to 2:00
As a part of the city's Climate Action Planning, the Equity Work group was tasked with identifying opportunities to enhance the benefits of climate change programs and policies for all residents -- and avoid potential negative impacts or missed opportunities for communities of color and low-income populations.

California PATHWAYS Project: Long-term Greenhouse Gas Reduction Scenarios
November 20, Noon to 1:00
PATHWAYS is a project to develop scenarios for how California can achieve its goal of reducing greenhouse gas emissions 80 percent by 2050.

November 20, 2015 - Notice of Funding Availability from CT Dept. of Housing CDBG-DR Tranche 2, Planning funds to address improved resiliency to Infrastructure and Public Facilities in Fairfield, New Haven, New London and Middlesex Counties. Applications due November 20, 2015

State of Connecticut Department of Housing NOTICE OF FUNDING AVAILABILITY

Community Development Block Grant- Disaster Recovery- Tranche 2
Planning funds to address improved resiliency to Infrastructure and Public Facilities in Fairfield, New Haven, New London and Middlesex Counties

Deadline for Submission of Application: November 20, 2015

READ MORE

December 1- 2, 2015 - Registration Now Open! Living Shorelines: Sound Science,

Innovative Approaches, Connected Community 1st National Technology Transfer Meeting and Regional Workshops

When: December 1-2 2015
Where: Hilton Hartford Hartford, CT

Restore America's Estuaries, in partnership with the Connecticut Institute for Resilience and Climate Adaptation, is pleased to announce a first-of-its-kind living shorelines event! This Summit - Living Shorelines: Sound Science, Innovative Approaches, Connected Community - will feature nationally-relevant issues and discussions along with region-specific workshops.

Whether you call them "soft shorelines," "living shorelines," "soft armoring," or "soft stabilization projects," you belong at this gathering!
Follow on twitter @LSSummit2015
Contact Jeff Benoit - jbenoit@estuaries.org
Any Questions? Contact Suzanne Simon - ssimon@estuaries.org

April 10-13, 2016 - Save the Date. Keeping History Above Water. A national conference in Newport, RI. More information.

Keeping History Above Water will be one of the first national conversations to focus on the increasing and varied risks posed by sea level rise to historic coastal communities and their built environments. This is not a conference about climate change per se, but rather about what preservationists, engineers, city planners, legislators, insurers, historic home owners and other decision makers need to know about climate change-sea level rise in particular-and what can be done to protect historic buildings, landscapes and neighborhoods from the increasing threat of inundation.

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The *Resilience Roundup* highlights CIRCA's presence in the news, provides links to recent local/state/national news articles related to resilience and adaptation, and announces upcoming events and seminars.

The Connecticut Institute for Resilience and Climate Adaptation's (CIRCA) mission is to increase the resilience and sustainability of vulnerable communities along Connecticut's coast and inland waterways to the growing impacts of climate change and extreme weather on the natural, built, and human environment. The institute is located at the University of Connecticut's Avery Point campus and includes faculty from across the university. CIRCA is a partnership between UConn and the Connecticut Department of Energy and Environmental Protection (CT DEEP).

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