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Briefing Transcript

Improving Coastal Resilience in the Northeast: Innovative Solutions to Protect Communities, Property, and the Environment

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Speakers:

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Moderator:

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Daniel Bresette

Alright, good afternoon everyone, thanks for coming today. I'm Dan Bresette, the Executive Director of the Environmental and Energy Study Institute, and very happy to welcome you to this wonderful room. I want to give a special thanks to representative Jared Golden of Maine for being our sponsor, and for helping bring us together today. Today, this is our coastal resilience briefing, the next in a series, today we're going to be looking at the Northeast, but I haven't actually been Executive Director here that long, so I can't take any credit for it, all that credit goes to team EESI, and if you have a briefing that you need to have planned and pulled off with precision and perfection, I hope you all look to EESI. For those new to EESI, maybe newer than me, we were founded in 1984 on a bipartisan basis by members of Congress to help educate and inform policymakers, stakeholders, and the general public about the benefits of a low emissions economy. In 1988, EESI declared that climate change and addressing climate change is a moral imperative, a sentiment that has since guided our work. Today, we are fully engaged in the climate change policy debate and committed to working with Congress to find solutions to what I call the terrible problem of a rapidly warming planet. In the past few weeks, EESI has been increasingly focused on the issue of resilience, and today's briefing is the latest but not the last in that series.

Today, we're going to be looking at coastal climate resilience in the Northeast with a special emphasis on nature-based adaptation solutions, and sharing examples of successful efforts and good ideas from around the country. If you've missed any of our previous briefings, well you're in luck, because you have access to summaries, and the videos of all of our previous briefings at www.EESI.org. The purpose of today is to highlight the work being done by communities impacted by climate change, using innovative ways to collect data and develop adaptation methods, and perhaps most critically, build consensus around resilience goals. Our goals are to inform you about

what's currently being done at the local, state, and regional levels of government, so you can take part in the national debate about how to fund or otherwise support similar resilience programs. In environmental policy conversations, we hear a lot about problems and disasters, and about every horrible thing that could possibly go wrong. But at EESI we want to focus on solutions, what we can do right now to be good environmental stewards, and work towards lowering greenhouse gas emissions to create a healthier planet. And when it comes to our briefings, we do our best to assemble panels of some leading doers in climate policy. And these are three great doers that you're about to hear from in just a moment. This terrific panel of resilience policy experts and practitioners is joining us today, all have traveled and we're really thankful for that, and I'm really looking forward to their insights. We'll leave plenty of time at the end for a conversation and lots of questions after their presentations, so please if you have any questions please hold them until then.

I'm going to get started and introduce our first panelist. Sarah Burns is a water resource scientist with the Massachusetts chapter of The Nature Conservancy. Sarah works with a range of partners and technical experts around Massachusetts to plan, fund, and construct nature based solutions to improve water quality, reconnect aquatic ecosystems, and reduce natural hazard impacts. Sarah is a certified municipal vulnerability preparedness service provider and has a Master's degree in Environmental Science from Indiana University. Sarah will provide an introduction to nature-based solutions and present her work helping Massachusetts communities build resilience to natural hazards. Sarah.

Sarah Burns

Thank you, thanks everybody for coming, I'm gonna talk about a state program in Massachusetts that we call MVP—municipal vulnerability preparedness, and the role that nature-based solutions play in that program. So to set the stage with a little context about Massachusetts, climate adaptation really became part of the statewide conversation in 2008 with the Global Warming Solutions Act. Between 2008 and 2016 there were a few reports and bills and authorizations in the environmental bond of 2014 that really paved the way for the Executive Order 569 that you can see right above 2016, that really got the ball rolling on the programs I'm going to talk about today. You can also see across the top of this chart that a lot of this policy and funding planning happened amidst some pretty intense climate events, and that sort of motivated some of the actions to be sped up and I think contributed to the funding that's available now. So, Executive Order 569 is an integrated climate change strategy for the Commonwealth of Massachusetts. This executive order I think did a great job of highlighting the importance of both emissions reductions and resilience planning. So there's a lot of state initiatives planning for reductions to avoid some of the more dire future potential consequences of climate change, and at the same time there are several funding programs and state efforts to adapt to the impacts of climate change that we're already experiencing, and that are likely to be unavoidable into the future, and I'm going to focus on the resilience planning today.

So there was a state plan, agency vulnerability assessments, municipal support and climate coordinators were all called for in this executive order, and the ball really got rolling on implementation in 2017. So this is when the state started doing three big initiatives. The first up here is the Resilient MA Clearing House, this is a public facing website where the state has posted downscaled climate projections that have been downscaled to the watershed in Massachusetts for two different pathway scenarios out to 2100. So this data is publicly available for municipalities to use in their planning. In 2017, the state also began a process of developing the first in the nation statewide climate change and natural hazard mitigation plan, this is the FEMA-approved Natural Hazard Mitigation Plan that opens the door for a lot of FEMA funding, and Massachusetts made the decision to formally incorporate climate change projections and their synergies and their impacts on every natural hazard experienced by the Commonwealth. This plan was also the vehicle for the statewide vulnerability analysis. All state agencies were instructed to assess their assets and programs against natural hazards and climate change and to prioritize a list of actions to sort of remediate those hazards. And then the rest of my talk today is going to focus on the Municipal Vulnerability Preparedness program which was also launched in 2017.

So MVP is a state and local partnership that is really meant to build resilience for climate change. This takes place in two distinct phases. MVP has first, a planning grant process which leads a community to become a certified or designated MVP community. The way this works is that municipalities are funded to plan for climate change impacts and how those impacts are going to change their experience of natural hazards. This is done through contracting with a state certified service provider who comes in and helps the municipality put on a

workshop and then develop a report based on that workshop. The workshops, they follow a format that's set out and it's called community resilience building, it's a product developed by The Nature Conservancy, and the community resilience building process focuses on strengths and vulnerabilities in relation to natural hazards in the segments of society, infrastructure, and the environment. Once the strengths and vulnerabilities are identified, action items are developed and then they are prioritized and they are sort of planned out through time in terms of how long it will take to implement those action items. That is all written up in a plan which is submitted to the state, and then once this state approves the plan that community is designated as an MVP community. This makes them eligible for priority funding for other state grant programs and it also positions them to be eligible to apply for the second phase of the MVP program, which is the action grant or implementation stage. So these action grants are meant to fund implementation of action items from MVP plans, and in those action grants, nature-based solutions projects are prioritized.

So I'm going to just pause here for a minute and familiarize you with the nature-based solutions definition that Massachusetts uses, this is the definition that's incorporated into the Municipal Vulnerability Preparedness program, it's also in the statewide climate change plan. And in those plans, nature-based solutions are defined as using natural systems, mimicking natural processes, or working in tandem with traditional approaches to address natural hazards like flooding, erosion, drought, and heat island. This definition that the state uses is kind of an umbrella definition that's inclusive of both green infrastructure, like existing ecosystems like the salt marsh that's pictured on the top there, and engineered solutions, or sometimes they're called low-impact development solutions like the living reefs that you can see in the bottom of the screen. I also want to just mention quickly that EESI has posted right now a really great white paper that goes over the definitions of nature based solutions that are used by different organizations, there's not a universal definition, everybody has their own spin on it so it's a good resource. And I also want to say here that EEA, which is the state agency that runs this program chose to prioritize nature-based solutions because they are often more cost effective to build and to maintain over time, especially because living ecosystems have some natural resilience that allow them to respond to events in a way that gray infrastructure cannot do, and because they will provide multiple benefits for people and for nature.

So, the MVP program has had three rounds of planning grants funded so far. I have some summaries from the year one reports that I can share right now. Year one, many of the municipalities were planning in 2018, which is when we experienced three really serious Nor'easters back-to-back in March, so it's maybe not a huge surprise but it's also representative I think of a longer experience than just 2018. But the top hazards that the municipalities chose to plan for were severe storms, inland flooding, heat and wind. And the top actions that are tailored to build resiliency at the local level were thinking about emergency management, power infrastructure, stormwater management, local regulations and ordinances, and drinking water resilience. So as I mentioned there have been three rounds of planning grant funding to date, this map shows 71 percent of the communities in Massachusetts have participated in this program in some capacity. The light blue of municipalities that have planned already, the dark blue municipalities that have funding to plan right now, and there's another round of applications for planning that's active right now, so we anticipate more areas will fill in. I'm not sure how, you probably can't really see it but there's yellow and green dots on this map also, those indicate the action grants that have been funded. Since the program's inception, there have been two rounds of action grants funded, this has funded 67 projects for a total of $15.3 million. I've already mentioned that nature-based solutions are prioritized for funding, but this list sort of gives you a sense of what else is eligible for funding, communities can do further vulnerability and risk analysis and assessment, bylaw and ordinance review is eligible, education and outreach, redesign and retrofits, energy resilience, chemical vulnerability and safety, subsidized low income housing resilience, and mosquito control districts are all eligible projects for implementation through this program.

So I am going to now run through a few examples of action grants that have been funded in coastal communities in Massachusetts. This is not an exhaustive list but it gives you a sense of some of the things that municipalities are working on in Massachusetts. So this first category is the nature-based solutions for resilience, a few communities who have received funding to do either feasibility studies or implementation from nature-based solutions are listed here. Essex received funding to do what we call a living shoreline feasibility study, where they looked at the climate projections and looked at the marsh and shoreline that protects the city of Essex, and found that marsh creation and enhancement with some reinforcement and also living breakwaters were the best fit to protect the infrastructure in Essex. The coastal storms in 2018 that I mentioned dumped a lot of sediment on the

salt marshes in the area around Essex, as much as what would happen naturally in 15 years. So Essex was also funded to study the impacts of that big sedimentation event to get a sense for how we might plan to help marshes keep up with sea level rise into the future. Newberry was also funded to look at salt marsh restoration opportunities. Falmouth was funded to do a cranberry bog restoration project. Cranberry bogs are becoming less productive over time in Massachusetts and many farmers are looking to retire, if the retirement isn't actively managed a lot of these systems can just revert to an upland forest because of all the management that's been done to the area, so active restoration helps retain the wetland services that these systems can provide like flood mitigation. So this restoration project is focused on coastal resilience and Mattapoisett was funded to conserve 120 acres of watershed land on the coast to retain coastal storm resilience.

The next sort of broad category is coastal resiliency planning for road corridors and infrastructure. Falmouth and Westport both have low-lying roads that run right along a barrier beach that are critical for people to evacuate, and also provide some protective services for the infrastructure behind them so they're doing assessments of long-term, how can they keep those roads active and protect the people who live behind them. Wareham is doing a detailed flood analysis study, and Nantucket which is the island off the coast of Massachusetts is issuing guidance for both residential and commercial development to think about how to be climate resilient and maintain all the historic requirements that Nantucket has for buildings on the island.

And then this final category that I'm going to talk about is wastewater and stormwater resilience planning into the future. The town of Scituate has done a comprehensive wastewater treatment resilience feasibility study that looked at the treatment plant, the pump stations, and the sewer pipe infrastructure and found that it's all pretty susceptible to coastal flood events. In the storms I mentioned already in 2018 they had hundreds of thousands of dollars of damage done to their system and it went offline for a few days. So this assessment has recommended long and short-term interventions that Scituate could take to prevent outages like that into the future. And they're also looking at the role for green infrastructure in stormwater management and resilience for city projects. And then Salem is in engineering for a relocation project to move a sanitary sewer trunk line, which currently is a high hazard risk of failure that runs through the harbor, so they're relocating that line.

This sort of compilation of funding projects is just meant to give you a sense of where municipalities are at, I think it also highlights the importance of pushing this funding and prioritization down to the municipal level because these municipalities have various stages of work that they've already done. Some of them are thinking about resilience for the first time, some of them are funding resilience projects that they have been thinking about for a while, so this funding allows every municipality sort of to move forward from where they are. And finally I'll just say that the America's Transportation Infrastructure Act of 2019, I have them yeah, sorry I have the numbers, but it has a program that they call the Protect Grants which is section 1407 of that proposal. This has passed the Senate committee but when it comes over to Congress, incorporating the Protect Grants as they're spelled out in this ATIA proposal would enable a funding program really similar to the MVP program, and would be a way for the government to allocate money that states can then grant out to local communities to plan and implement their own resilience projects. So with that, I will say thank you and turn it back over to you, thanks.

Bresette

That was great Sarah, thank you very much. We had a lot of people come or come into the room after our first panelist started, so let me say two things: first, thanks, welcome to our briefing today, we know you're busy and thanks for making time to join us for this really important topic, and then second, we are going to have lots of time for questions but we're gonna wait until after our third panelist finishes. Sarah, thank you for the shout out for the nature-based solutions fact sheet, I will repeat it, we have a really great nature-based solutions fact sheet, I think there are copies out on the table, if there aren't or if they're all gone, you can also get those online, it's a great resource. Yeah, that's it, thank you. So there it is, evidence that it existed. It's a great resource, I encourage everyone to download it and take a read, a lot of time and effort went into producing that.

Our next speaker is Kate Boicourt, she is the Waterfront Alliance's Director of Resilience, which means she oversees the organization's portfolio of resilience work, including the convening of a resilience task force and development of a campaign for regional resilience and waterfront edge design guidelines. Previously, she served as the Restoration Program Manager for the New York New Jersey Harbor and Estuary Program, where she focused on cross-jurisdictional coastal issues related to habitat restoration, public access, and climate change. Before that, she led a team of experts to develop a climate change adaptation plan for the state of Maryland and

has held multiple roles conducting and synthesizing research for the public and policymaker audiences. Kate will discuss the unique challenges of building consensus around resilience with over 400 businesses, governance, and civic partners in the New York City metro area and beyond. So please welcome Kate.

Kate Boicourt

Hello and thank you to Sarah because we've been actually looking at the Massachusetts approach, we think they're doing a lot from a planning perspective that we can learn a lot from, in even urban New York and New Jersey. So thank you to EESI for having us and thank you all of you for joining us today. I'm going to talk a little bit about who we are, what we're doing with relation to this issue, the problem from our lens that we see, and a few things that you and as a federal audience can think about and making sure that we are thinking about, green infrastructure solutions as well as gray. And I just, from urban perspective, as much as we've got wetlands in New York City and New Jersey, we've got tons of them, but also the solutions for this that are greener, as much zoning as they are investing in wetlands, so that's a little bit about sort of the range of things that we're looking at. So we are an alliance, over a thousand civic business, multiple stakeholders that have to do with the waterfront, and we cover everything from making sure that we're getting access, public access to and from the waterfront, maintaining our maritime history and working waterfront, and also the water quality and improving the way that we interact and balance all of these different uses.

So we are focused in northern New Jersey, really from Monmouth County up north to Bergen and New York City, and as I said we want to make sure that we have a great waterfront city, everybody interacts with the waterfront in some way whether they live directly on it or not, and it tremendously impacts them beneficially or negatively, and we need to make sure that we're having this great thing for generations to come. So we were very impacted by Hurricane Sandy in 2012, and that's really shaped our approach. We've been concerned with this issue before then, but adapting to sea level rise and coastal storms has never been more important. As many of our, we've got most of our nation's infrastructure and economy is really at the coast, and especially in New York and New Jersey. So one of the things that we've done is actually to develop guidelines that were just mentioned for waterfront projects, you know how do we incorporate sea level rise and coastal storms, but the thing that we're really working on right now is trying to build consensus and essentially a policy platform at all levels to figure out, how do we sort of align all of these carrots and sticks and programs to make sure that we're moving together towards a goal that's clear and managed and has communities engaged and aware.

So just a brief lens of some stats from our region and nationally, we have over a million in our floodplain today, so that's not even thinking about the future. We are, as you probably know, over $20 billion in debt in our National Flood Insurance Program, and like Sarah said, investing now, particularly in green infrastructure, can save us money in the long run. We also know that we're in an affordable housing crisis, I don't know if you've heard in New York and New Jersey and probably in DC as well, and many of those, this is actually a national report by the Furman Center at NYU and this is a trend that we see across the nation, we have a lot of assets in the floodplain. We also know that NPR did a great report on this, you can listen to it as a podcast if you're busy, this disaster recovery widens wealth gap and along racial lines and it's really stark. We're pretty concerned about equity as we move forward.

We're also, as I said we have a lot of wetlands believe it or not in New York, New Jersey, we got great wetlands, and they're all at risk. We need these resources that we've actually lost and that still protect us in our region. But increasingly you know, we focus on numbers a lot, especially you all that have macro looks to respond to and have to think about stats, but for us it's getting to work, it's playing outside, it's Nathan's hot dogs at Coney Island is in risk, and we need to kind of build that awareness, that it's home and it's home for, I tried to find a picture of an osprey nesting in some of these backyards so you get the full picture. This is actually New York City, this is Broad Channel, so increasingly it's not just about the numbers that we're trying to respond to but what is the future that we want, and I think even at the federal level when we're talking about funding and programs we need to think about that and how we facilitate the local and weighing in on that. So we've been working on building consensus and starting to galvanize our constituency, as I said we've been working with over 400 civic organizations, grassroots communities at flood risk, elected officials, agencies, to build consensus on what needs to be done from federal to local and back up, and we will use that information as an organization to build a coalition and campaign for 2020. And if you're interested in a sneak peek of that policy platform, we'll be rolling it out sort of in draft form by the end of this year, so we can actually get some good input on it and we'd love yours.

So we agree that a resilient future is risk informed, that people are aware, that it's managed. If you think about the governance of anything else that we've seen changes in time, and had to build governing agencies or expand authorities, in similar ways it's kind of bad, we haven't really built our governance around this changing issue fully. We're doing all the work and there's a lot of smart folks that we work with in agencies that are doing great work but we haven't given them quite the tools, the level of resources, and the authority to manage flood resilience. We also want to make sure that it's equitable and just. As I said we have a justice problem when it comes to all of the issues of pollution and climate adaptation, and we've got some strong research to back us up on that. And so how do we tweak those funding sources and other programs to ensure that we're accounting for all people of all economic and racial backgrounds? We also need to make sure that it's funded, we again are starting to increase our disaster, pre-disaster money at the federal level but we're still not really there, and I think in general we need to be really supporting our Federal Emergency Management Agency and others in really moving towards a more proactive investment. So that if you think about the taxpayers ultimately being the risk managers, we are right now, and if we're investing now there's a return on investment in the long term, if that's who's bearing the brunt. And then lastly, again there's a lot of benefits from a green perspective. So we've been working with subcommittees on all of those things to try to come up with the best solutions. So there's no silver bullet to this issue which means it's hard, and I think it's also hard to sell it to the public, they're kind of a little behind where the greenhouse gas mitigation reduction community is, from an adaptation perspective, so we need to kind of figure out how to break the cognitive dissonance between it's a problem and here's how to solve it.

So just to kind of give you, again this is from the lens of green infrastructure, particularly it as well as all of the issues that we need to solve, you know what can we do at a federal level to address this. You know first of all, fund them, there's a couple of bills out there right now, I know Pallone and Booker, Senator Booker and Congressman Pallone have been pushing for a Living Shorelines Act to Climate Stewardship Act, to investing in green infrastructure, but also you know National Flood Insurance Program reform, and there's some really exciting provisions that are being considered. Senator Menendez in New Jersey has been a leader in this along with many of our other Senators that represent our region, and really pushing for not only reform, and really in a nuanced way I think a lot of people in the public are sort of looking at it as a yes or no issue, and it's really nuanced and we can reform and increase our risk-based rating, based on housing burden or other affordability metrics, and we're strongly in support of that. But also we can be funding and supporting state governments to start developing resilience funds, that's something that can help states dip their toe into managing this issue and building their own funding to kind of pair with that, and you can prioritize green infrastructure and other equitable approaches in those funds so that we're really supporting our states to do their programs like Sarah was mentioning, to do planning tied to implementation from buyouts to berms, which these are things that are happening right now in our region. We can also think about reforming our cost-benefit analyses, I think that's something that really we can work on both from an equity and a green infrastructure perspective, we don't necessarily favor equitable solutions or green infrastructure solutions in our cost-benefit analyses, from Army Corps to FEMA, you know when ten 100k houses mean the same as one one-million dollar house from an infrastructure perspective, then you know, maybe we need to think a little bit more about value; from what is it that we care about, and what are the ends that we're trying to solve, are we're trying to save number of people, or infrastructure, both, and how do we really think more granularly about these cost-benefit analyses.

The other thing is sort of building awareness and I think that's something that we can all invest in, and also making sure we're investing in and asking our communities. When we talk about onshore natural measures, these are in people's backyards and urban areas. Okay, so saying you know we can be investing in upfront engagement, and that's something that's really missing a lot of times from federal funding, and I think that that's particularly coming into play with work that's being done in our region to study our risk and how to address it from storm surge perspective. We are excited that the Army Corps of Engineers is studying our region to sort of see what we can do and this is important work that's being done by the Corps, it's you know, the challenges that they're having and that we're having as advocates. Are you guys getting a lot of static in the back? Okay can you hear me?

So, what we're finding, especially this is a big case study actually, and sometimes the limitations with how things are authorized can prevent us from doing the full job. And I think that an issue that we're having locally with a project like this is that we're not looking at sea level rise and stormwater from [inaudible] perspective between different ways to address the issue of flooding, and that's something that's a real challenge, and we need to be thinking both fiscally responsibly, and also from a perspective of, again, what is the future that we want? When we

look at different alternatives for how to address flooding, whether that be sea level rise or stormwater or storm surge, these are all things that are expensive. I think 90 percent of our federal disasters were flooding, and in 2017 alone we had 300 billion in damages, they have to purchase the GDP of Ireland for perspective. So the more that we can be thinking about solving multiple problems at once and engaging folks more thoroughly, we can really come up with better solutions that favor green infrastructure. And again with this project I think part of our challenges are what's included and what they're able to study and the amount of resources that they have to engage the public, it's something that will have a lasting effect for generations to come. So I'm [inaudible].. in discussion but I got a little intro to Twitter and commenting the other day, but I thought it was funny when three New Jersey mayors published something, a report on their flood insurance program report, and we figured out that Ron has solved the problem, so that we didn't [inaudible].. we heard folks on Twitter always have the solutions. Thank you.

Bresette

You know when you see something personal it puts it in perspective. You had a picture of Nathan's on Coney Island and you know if that's at risk that means the hot dog eating contest is at risk and I hope we can all agree that that's unacceptable, we have to act now before the fourth of July. Now we're gonna have a transition between the largest city in the country, and we're gonna start talking about a state with a lot of small communities, and a lot of small communities that live on small islands which I wasn't really aware was a thing, I'm a Vermonter, we're landlocked. I've been to Maine, but I've never been to the islands, and we were talking this morning that maybe we're talking about 10,000 people across the state living on these small islands year-round, that's really interesting and so I'm looking forward to hearing what our next panelist has to say.

Sam Belknap has worked extensively in both the academic and private sectors and currently serves as the project lead for the sea-level rise resilience in lobster fishery work at the Island Institute, a community development organization located in Rockland, Maine. And if you've never heard of the Island Institute, representatives who represent the state of Maine have, because the same well-known poster is in both of their offices, I can attest to that this morning, maybe you can tell about the sheep going out to the island in Q&A. And I didn't know about it, but that's a great photo. In addition he oversees the Shore Up network, that aims to connect Maine's coastal communities to the planning and technical support they require to best address coastal hazards. Sam has over 15 years of experience working on issues of climate change adaptation along Maine's Coast. He holds Master's degrees in Climate Studies, and Anthropology and Environmental Policy, from the University of Maine's Climate Change Institute. Never one to rest, Sam is now in the process of completing his doctoral research on climate adaptation in Maine's lobstering communities. Comes with a free bib when you get your PhD, right? Sam will discuss building resilience to sea level rise and climate change impacts on fisheries in the working waterfronts of rural Maine. Sam, welcome.

Sam Belknap

Thank you all for joining us today. So as Dan mentioned I've worked in coastal Maine for a long time and I'm thrilled to be part of the Island Institute now. The Institute is a community development organization working to sustain Maine's island and coastal communities, and exchanging ideas and experiences to further the sustainability of communities within Maine and also across the world. We are more than happy to export the brilliant things that are going on in Maine to the rest of the world, and happy to steal the good ideas that are out there and bring them home to benefit our communities. Our vision is that Maine's island and coastal communities can serve as the ideal version of sustainability and resilience, and we're working every day to make sure that's that's the case. And as we mentioned, as Dan mentioned, we're shifting scales a little bit here, we're working in a very rural state, in fact we are the most rural state in the country. 61.2 percent of our population lives outside of population centers, we work with 120 coastal communities, 105 of these are on the mainland and 15 of these are our year-round unbridged island communities. 84 of our coastal communities have fewer than 2,500 people and I think 25 percent of all island and coastal communities have less than 800 residents, so we're dealing at a different scale here, the town manager is your garbageman is the tax collector is your assessor, so people wear many hats and thus we wear many hats.

And I'm glad my fellow panelists talked a bit about some of the green infrastructure work that's going on because it's going to be noticeably absent from most of my conversation for two reasons: one we're not there yet,

and two it has limited applicability across our coast. Some of the ideas of melding traditional green infrastructure with more gray infrastructure practices are applicable but we're a rocky coastline, very high-energy, it's a different story along most of Maine. So why does rural matter? Well in addition to being kind of what defines us as a state from the census perspective, it imparts its real nature and all of the things that happen in our communities. These small communities are under-resourced, they have limited staff, limited time, and very limited finances. I always refer to a conversation I had with a town selectman from St. George, one of the peninsula communities near Rockland, and he said 'Sam, how do you expect me to have a conversation around climate change resilience when I'm faced with this list of deferred maintenance and I'm also battling with the school budget right now', just puts things into perspective. Adaptation and mitigation cost money, and this is money often communities don't have on hand, and we also don't have the population base to tap into traditional taxation structures and payment structures to do some of this work. And the rural nature of our communities has implications, not just in the practice but in the policy world as well. And I point everyone here to some work we did on bridging the rural efficiency gap. This is energy efficiency work, so we're talking about mitigation here, but this has some pretty clear policy and practice prescriptions that everyone should pay attention to if they have constituents from rural districts. The rural communities operate differently, you need to be treated differently and there's some pretty clear solutions here that our work on the mitigation front end should also be considered when we're talking about adaptation, whether that's to warmer waters, whether that's to ocean acidification, or whether that's the sea level rise and coastal flooding.

So our sea level rise resilience team works in three primary ways with our communities, and let me just first say, I was asked earlier today how do I define resilience in the work that I do? And my answer is simple: I don't. I don't have a definition of resilience. We refer to our communities when it comes to resilience in their minds, resilience to us is resilience to the community. What their vision for the future is, how they see sustainability, and we work every day to make sure that happens. And because our coastal communities are at various points in the planning and adaptation spectrum, we start where a lot of communities start, helping them have conversations around climate change and sea level rise. On Monday, a colleague of mine on the sea level rise team spent the day on the Cranberry Isles, which are off the southern part of Bar Harbor, Acadia National Park, many of you may know, they are among the most at-risk islands in the state, facing upwards of 40 percent inundation of their land under some of the higher, the average to extreme sea level rise projections, and similarly, a few other parts of the communities are on the very high end of facing inundation. So they're interested. They just invested significant effort into a broadband network on their island to connect them to the mainland more robustly, and are concerned, how is this going to be impacted by sea level rise, how is their working waterfront going to be impacted by sea level rise? So we're here to help facilitate these conversations. For those communities that are a little bit farther advanced, we provide technical and planning support, we've done a lot of work with Maine's Emergency Management Agency and connecting that to the work that FEMA does on flood resilience, and helping people look at the flood resilience checklist, which is specific to me. It helps people provide a baseline for their communities on where their vulnerabilities are and how to best proceed towards adaptation.

And another example of this is the work we've recently done with Monhegan Island, it's an island off the coast of Maine, 12 miles off, 79 year-round residents, and is made famous by the Wyeth family, a family of painters, so it's a well-known artist colony as well as a year-round fishing community as well. And they're vulnerable in a way we don't often talk about, their fresh water reservoir is the one pinch point on the island that's incredibly vulnerable to sea level rise, and they've been working non-stop and we've been helping them think through how to make their community more resilient. And we also are willing to put our money where our mouth is. We are happy to make small targeted investments to communities who are thinking about planning or looking to implement infrastructure projects. For example, we just invested through our Tom Glenn Community Impact Fund, a modest sum of $10,000 to provide a non-federal match to the community of South Thomaston, that is looking to rebuild one of the bridges that is their only connection to this major lobstering port to the mainland. And this minimal investment was able to provide a match for almost $400,000 in funds through the Northern Borders Regional Commission granting process, so sometimes all it takes is a spark, and we're happy to provide that spark and knowing that there are state and federal partners out there who are willing to also put some money forward makes us even more willing to provide this initial support. And here I have to give a shout out to anyone from NOAA or anyone who works with NOAA and their Coastal Zone Management Program because the funds that come to the Maine Coastal Program through that program are integral to our community's ability to

adapt to a changing environment. So keep that in mind as we proceed, this is a good thing to keep our eye on, these existing federal programs that are slightly underfunded to say the least that can make a huge difference in a lot of these rural communities.

So why do we have a sea level rise team at all? Well, Maine is incredibly reliant on its coast. It is, some would argue, the center of our tourism industry, it is the center of our lobster fishery which provides over $1.5 billion to the Maine economy every year, a small number for some of these bigger cities and bigger municipalities, but it is the linchpin of a lot of coastal communities. And here I just want to mention that sea level rise is only one aspect of the climate change impacts that our coastal communities are facing. So there's one aspect of the work that we do. Warming waters, ocean acidification, increased precipitation and coastal flooding, soon otherwise driven flooding and the impacts that come from there, are all pinching these communities that are heavily reliant on their coastal economy, which is heavily reliant on working waterfront infrastructure which is incredibly at risk from sea level rise and coastal storms. And it's not just municipal problems, this is one of the lobster piers in Portland, Maine, and I believe probably the same nor'easter back in 2018 that you mentioned Sara, but because sea level rise and coastal storms impact municipal property, they also impact private residences, private businesses, and private property. It's really a community issue, so dealing with this takes a community approach. It's not something the town can solve on its own, it takes everyone being part of these conversations and contributing to the adaptation efforts that are going on.

I just wanted to talk briefly about one project that we've had a small part in, really more a facilitating role, and that's the island of Vinalhaven. It is just to the south of the island that representative Pingree inhabits for a good chunk of the year, and this is a lovely picture of the island and its fishing co-op in the summer, and the smaller picture here is its neighboring ferry terminal and parking lot, that is completely inundated during again the same nor'easter back in 2018. This is a pretty bad winter storm. The ferry terminal is the lifeline connecting the island to the mainland. Even on calm days the ferry has had to be cancelled over the past several years just because of high tides, not even having to do with storms. They're starting to see the impacts of sea level rise. And I choose Vinalhaven because it is also the kind of quintessential Maine fishing community. It has 1,150 year-round residents, 55 percent of the residents are sole proprietors of their business, most of them make a living from either directly from the lobster fishery or from the tourism industry often affiliated with the lobster fishery. Roughly 18 to 20 percent of Maine's entire lobster landings are landed in this port. Here the combined landings of Vinalhaven Island, Rockland, Maine, the town of around 2,000 people, and Stonington, a bridged island on the other side of Penobscot Bay, of around 1,200 people, make up more commercial landings value than all of the species landed in New Hampshire, Connecticut, and Rhode Island combined. So to say that the fisheries and the working waterfront in Maine is vital is an understatement. And Vinalhaven is incredibly forward-thinking and has crafted their own sea level rise committee that is working on a volunteer basis to help the town tackle these issues, because, as most small rural towns don't have access to the time, resources, and staff to do this on a full-time basis.

Okay so the reason I chose Vinalhaven, in addition to its forward-thinking nature and its incredible intersection with the impacts of climate change, is because they help us answer one of the questions that we've been grappling with for a while, is how do you put a cost on inaction? Municipalities of whatever size have a pretty good sense of what any particular infrastructure project is or is going to cost, but there's nothing to weigh that against. What costs will I incur if I am faced with doing nothing? So we worked with Vinalhaven, Stonington, and another southern Maine town of Scarborough to pull together publicly available information looking at how properties will be inundated and how that will impact municipal tax rolls under various sea level rise scenarios. And using that information to provide a number, what will happen if we don't do anything, what costs will be incurred, how will this impact our community, how will this shift our tax base from our coastal property landowners to the interior? And it's a lovely story map, I have a link to it which I'll share at the end but it's worth checking out because we worked with them to tell their story and how sea level rise is impacting their community, getting back to that, starting with listening to the communities and what the planning needs to look like and what projects should look like from an adaptation standpoint.

And this is just one example of the work that we do focusing on resilience, we have a ‘what works’ solution library, where we share all of the stories, the success stories, the ‘what can we do’ when it comes to these challenges, and I encourage everyone to take a look because here we don't just tackle the impacts of rising seas, we talk about ocean warming, we talk about energy efficiency and renewable energy work, we talked about

broadband access, the challenges of running small businesses in rural communities. It's a wealth of resources that allows us to share the stories and the successes of Maine out to the world. And one of the things that we've been hearing from our partner communities on a lot of fronts but most explicitly on the conversation around sea level rise, is how do we pay for this? We hosted a conference back at the end of September bringing together municipal leaders and those who have been engaged in adaptation finance for quite some time to start to connect the dots and see what resources are available. And I encourage everyone, it's documented, we live-streamed it on Facebook, so the video of the entire thing is available and if you want to have a real sense of what coastal communities are facing, what rural communities are facing for challenges, and some of the existing financial mechanisms that are currently in existence that are there to help, please take a look at this. Because our communities need direct investments into the state, whether these are through existing federal programs, existing state and federal partnerships, they need capability, they need time, they need money, they need resources, and we can do this through new or novel approaches, or through existing approaches.

I mentioned NOAA's Coastal Zone Management Program and the support that it provides to the Maine Coastal Program, this is vital. We have partnered with them on three different projects, provided seed funding for some of them, but they're limited in putting out about $150,000 in grants a year, that's a drop in the bucket when it comes to planning efforts let alone actually implementing infrastructure projects. So, as our communities are facing the different impacts from climate change, sea level rise, ocean acidification, and warming, they're doing a lot of work. They've gone very far on the planning side of things, they can be looked to for ideas but they're running up against bottlenecks whether it's financing, whether it's capacity, there are mechanisms and opportunities for us to share the stories of these communities and put a face to the challenges of implementing infrastructure projects, and I encourage everyone here to share these stories back with their fellow staffers and the delegates that are representing any rural community. Please share this information, there are solutions that are existing using current processes and we can come up with new and novel approaches, but let's start where we know it works. Thank you all.

Bresette

Thank you, Sam. So I teased it, you didn't quite get to it, but the sheep, so pretty much there's this picture of a boat full of sheep being carted out to an island by another boat piloted by humans, and then the sheep are allowed to roam for the summer, and that just seemed like a really good sheep life. And I thought it was cool, and I saw it twice today. So before we get to our questions and we have a bunch, I just want to mention our next briefing in this series will come in December, and it's gonna focus on communities in the West Coast and the coastal resilience challenges that they face and next Friday the 1st, EESI is partnering with World Resources Institute to present the Global Commission on Adaptation's flagship report *Adapt Now: a Global Call for Leadership on Climate Resilience*. To learn more, talk to one of the members of the staff, and there are lots of people on Team EESI here today who do all this great work, and also sign up for our newsletter, our newest newsletter *Climate Change Solutions* is a great way to stay informed about what we're up to and also just in general the climate policy debate under way.

We're gonna get started with questions now, and I have the moderator's prerogative so I'm gonna get started, and I'm gonna follow up Sam on the points that you were making at the end of your talk, which is, I want to talk a little bit about how we pay for this. So $150,000 is a drop in the bucket. If it's a drop in the bucket for Maine, it's a drop in the bucket from Massachusetts and New York City and New Jersey. So in lieu of grants, in lieu of these sort of federal sources, how are communities in your areas financing or funding the resilience projects that are the coastal resilience projects that they're facing?

Belknap

So I can jump into the main perspective, a lot of town managers are incredibly forward-thinking and they're making investments in infrastructure on an annual basis and planning often 20, 50 years out, and there's a recognition that starting now, squirreling a little bit of money away for later projects because building a road up to code today is not going to serve them well in the long run. And being brave enough to bring up these conversations at town meetings and saying look, we're going to start putting away this money so we can make sure that this many of our population can access their road when we rebuild this bridge, because we're going to build it to six feet of sea level rise which will provide us resilience for the next hundred years, rather than for the

next 10 to 15. So that's one way, but increasingly there's the awareness that we can't be in this alone. Maine is a home rule state and we have a very strong tradition of independence at the municipal level, but independence isn't going to help us solve this problem, working together is, and the town managers that we've been speaking to are recognizing that. So working together to leverage larger funding sources and to come up with broader strategies is going to be key.

Boicourt

Here we go. We're funding it through largely our Congressional appropriation following Sandy, that is the primary source of funding for a lot of our work, and there are some city and state programs that have been in existence for a long time, but again, we don't have that long-term source of funding, we haven't yet established that and that's something that we kind of need, and that you know, our feds can work with us to kind of build towards. A couple of numbers of where that is working, New Jersey Blue Acres program and Green Acres program, they've had a line item for a long time that has supported essentially a managed retreat, floodplain restoration, buyout program for conservation and floodplain purposes. It's been working, it's been around for a long time and they got an influx of funding from the Hurricane Sandy settlement and were able to spend I think 300 million on restoring floodplains. And then I think in New York State, our New York State Energy Resource Development Authority has a surcharge on your electric bill that funds at long-term. And I think the more that we really need to get serious about recognizing that this is something that we're paying for now, already and again and again, every county I think in New Jersey and definitely every county in New York State have had disaster declarations, 90 percent of which were for flood, and yet we have no ongoing source for dealing with those things. And we need to stack federal, state, and local resources and cost-share them in a way that's managed in practice.

Bresette

Kate, you and Sarah may have to share a mic because we're down one, sorry.

Burns

So, just to add on to what Sam and Kate both said, in Massachusetts we often see municipalities just going to town meeting and authorizing funding for the projects that they want to work on. There's a few state programs like the *Community Preservation Act* that communities enroll in and they are authorized to do a little bit of dedicated taxing, and they can use that money to help fund some of these projects. Another source that we aren't currently working on in Massachusetts but that The Nature Conservancy has been thinking about and has successfully funded in, I believe it's Florida, is to work with insurance companies to actually prove the benefits that natural infrastructure provides to the development behind it, and to ensure that natural infrastructure, so that when a storm event happens the insurance pays out a little bit to restore that natural infrastructure, and to continue protecting the development behind it. So that's a model that I think Massachusetts is thinking about, we don't have anything currently in the pipeline yet but we know from some recent studies for example, that salt marshes protected something like $625 million of property just in one town in New Jersey. So building that base of evidence is one way we're thinking about trying to get innovative with the financing.

Bresette

And you and Sam both mentioned Town Meeting, I know what Town Meeting is cause I'm from Vermont, but if you are from New England, Town Meeting is what it sounds like, it's literally a day I think usually in the middle of March and they get together and they solve their problems for the year, it's kind of quaint but it's the way it works. So if you're outside the six states of New England, that's what it is.

Questions from the audience? We have a microphone, it is in circulation or will be in circulation. Oh we have one in the back, and then I'm gonna come up here to the front.

Audience

Hi, I'm Amy Myers with the Subcommittee on Coast Guard Maritime Transportation, I was wondering if you could talk a little bit about mitigating conflict with working waterfronts, you know, open channels, you know three different ports you're talking about here, so could you talk a little bit about how maybe you've collaborated with maritime commerce to make nature-based infrastructure projects attractive?

Boicourt

Sure, I'll take that. And we represent as I said the Port of New York and Newark and New Jersey area, yeah so there's actually a working Harbor Committee, so that's the Town Meeting of the working waterfront world, and it's a place where the Coast Guard, you know we have kayakers and ferries and a whole lot of stuff happening in New York, New Jersey Harbor, so they actually come together through that community. It's less focused on natural resources and natural infrastructure, a lot of that happens through our port authority and because of the unique structure of the port authority being by state and having some funding, they are able to invest some funding in natural infrastructure. There is a question of conflict from air travel, actually there's a bird strike task force that tries to work on how do you manage those attractive nuisances as they call them, you know the wetlands right next to JFK Airport. We've been restoring wetlands next to JFK Airport, and oysters and all of the above, so I think that the solution there has been really just being in heavy communication with each other about projects and how to design them well so that we're minimizing the human-animal and plant conflict there.

Belknap

I got to defer to a colleague who's not in the room today, can happily connect you with them

Bresette

Thanks for the question. One up front? Amber. Sorry, a plant, I'll admit it.

Audience

Hi, I'm Amber. So Sam you mentioned in the beginning of your presentation that you work with communities abroad, and I guess for all of you guys how do you share information with other communities across the country and the world?

Belknap

So one of our strategic priority areas is focused on delivering and sharing solutions. So we have a publication in the state that is the third-widest circulation within Maine called the *Working Waterfront*, we also publish an annual newsletter, and we work heavily to be connected with as many networks as possible doing similar work all across the country and across the world. A few folks on our staff just presented at the virtual Islands Summit, sharing Maine's vision of a renewable future, resilient future. So we pride ourselves on our ability to tell stories because our communities have great stories to tell, and it's those stories that really move people to action and put a face on the needs. So we pursue every avenue we possibly can, we have a series of climate change videos which I would encourage everyone to focus on that we share pretty broadly, bringing in stories from Maine to Pensacola, Florida, to Alaska and beyond.

Boicourt

Yeah, so in a couple different ways we have definitely been involved in helping other organizations kind of get formed. Actually the Georgia Strait Alliance in Vancouver area was heavily modeled after our work in our organization. We've worked with a similar waterfront alliance in Naples, Italy, but I think actually our waterfront edge design guidelines, our wedge program, which is now a nationally applicable standard, has really provided a platform for us to engage with other regions, and so I'm having a call with the Hampton Roads Adaptation Forum which is a phenomenal group in Virginia, they're kind of trying to figure out how they adapt. And we do work with the Bay Area and others to kind of see what folks are doing and learn from them, and then also as we're gearing for a policy platform kind of, okay who can we work together to make sure this message is heard? So flood insurance program,… is doing great work, and I just want to give a shout out to Adam or Andy, who's working for the last National League of Cities, you know there's a lot of networks like that or American Society of Adaptation Professionals, who we can get that message out through.

Burns

And just to add to that, the work that the state is doing in Massachusetts on resilience planning is I believe going to be incorporated into a Learning Lab that the U.S. Climate Alliance States will be putting on, they have a

learning lab to look at the role for natural systems in storing carbon and now they're going to focus a little bit on what these client states can do to enhance resilience locally. And then I just sort of more generally, The Nature Conservancy has networks of scientists and resilience planners and we try and share the work that we're doing with each other, and the model for MVP has so far been transported to Rhode Island.

Bresette

Thanks. We have another question up here in the front.

Audience

My name is Dr. Catch for the Water Citizen Foundation, I've been to the Waterfront Alliance Festival with the cardboard canoes which is awesome, if you're going to get a chance to go definitely go see the Carberry canoe races, went to school at Dartmouth and —

Bresette

Is it a short race? It's a cardboard canoe?

Audience

They're cardboard canoes, and you can watch them the video on Water Citizen News and it kicks butt. All these kids are figuring out how not to sink ideally, but you know it's in the summer so it's warm. But, yeah you know it's it is so important to be able to share these experiences and just to let you know one of the things that we're getting ready to launch for the Water Citizen Foundation is our WaterSummit.org Virtual Water Conference Center, which you know especially for some of the rural communities or even in urban centers where it's hard to get across town to be able to have no travel to get to a conference and connect interactively, experientially across the world.

Bresette

Thanks Tiffany, a follow up from the panel on that? There was just a great piece of information, yeah good shout out. We have a question over here at the table, and then we'll come to you and I think you're the rep from National League of Cities? Okay great.

Audience

Good afternoon, great panel, John Board with the National Society of Professional Surveyors, NOAA has a project called the Digital Coast, and I know that TNC is a member of the Digital Coast partnership and Sam mentioned a newer connection you know, discuss a little more about surveying and mapping and geospatial data sets and what that means to the discussion today.

Burns

Yeah I can start with that. I don't work directly with the program that you described, but I think having the data available spatially is incredibly important for this conversation. I didn't spend too much time talking about the planning process in the MVP program, but it's a community-based workshop where town officials get together with citizens and they point at maps and talk about their problems, and having the flood projections and heat projections and sea level rise projections really, really, really shapes having good action items developed. So that's just sort of my general thought on the importance of the spatial planning.

Boicourt

Yeah we use spatial planning and maps that are available online all the time, especially when we're talking to design engineering professionals who are saying what on Earth am I supposed to do if I'm building on a lot, so we're providing them guidance that exceeds code in advance of you know, as getting there with with policy and we refer them to a couple of different things, certainly a sea level rise viewer, surging seas, and locally Rutgers has a good tool that gives total water levels which for a designer is very important. And also New York City has I think one of the easiest to understand if you're actually, although they're not for engineering purposes, they are useful for understanding future flood and in a very clear way. So it's tremendously useful to planning and design.

Belknap

Got it. So two answers to that question. One, having the maps available are phenomenal, the NOAA sea level rise projections and that mapping capability directly fed into the Maine Geological Survey's ability to come up with community specific, Maine-specific scenarios for sea level rise which was a game changer in our ability to think about these things. The second part of the answer is availability isn't enough, because our towns are under-resourced and most don't have the capability of dealing with GIS, just a fundamental statement. We lost our state planning office eight years ago, the previous administration and our regional planning bodies, several have dissolved, one is dissolving so communities have few places to turn to and that's one of the reasons why we're engaged in this work because they're turning to us, and that's not our job, so coming up with robust federal support for the state and that is going to be key.

Bresette

Great question, thanks. A friend from NLC here in the middle.

Audience

Hi, thanks for putting on this panel, it's really great. So apologies, Sarah I missed your presentation so I'm not sure if this is relevant to you, but one thing that I've not quite heard addressed yet in terms of coastal adaptation is the issue of retreat and climate migration and climate gentrification, so as kind of, I guess quasi-regional organizations, Sarah and Kate, how are you guys approaching this issue, are you thinking about it? Are people within the organization and your communities thinking about this? Would love to get your take on that, this is something I'm working on at the moment.

Belknap

Sure. So as I mentioned, we think about it when our communities ask us to think about it. If no one is really quite at the managed retreat stage yet, there are conversations about what type of infrastructure investment should we be thinking about making elsewhere now, but no one's really having a conversation squarely around where do we move people when the seas get higher. One interesting piece of information is our islands and much of our coasts are desperately starved for workers, and some of the town managers that I've had the privilege of speaking with says we would happily contribute to solving that climate migration and climate refugee crisis, if they can be willing to come here and start families and help us develop our workforce, so that's interesting to hear.

Boicourt

Absolutely, we talked a little bit, or I talked a little bit about the public housing in the floodplain and the affordable housing crisis that we're in, and I think that these two things are very intertwined, if not directly yet, in the longer term will be. And we are still building affordable housing in the Rockaways and so thinking about you know, what that means long term is important. So a couple of different ways that we can address that when investing in quality, affordable, nearby options and really thinking together about zoning for affordability and for climate resilience, all of the different things that we need to at once, where can we bear more density and where can't we, and thinking about these things more comprehensively and ensuring that there are affordability and equity metrics in that decision-making. Rezoning is not a popular conversation in New York City or New Jersey particularly, but I think that what we're missing overall is how we communicate about these things, and all the challenges that we face and increasingly well. Another option is I think to Sam's point, you know we don't have long-term funding for city and state buyout programs or managed relocation, although relocation is not yet part of those, I think it is somewhat in New Jersey, and the funding that we will, I think that there's gonna be a lot more need for funding that we have in New Jersey over time. So investing in those, and also thinking about one other thing that we shared with our Congressional electeds related to National Flood Insurance Program reform, is looking into things that we can do with FEMA, as well, are there advance planning opt-ins that maybe somebody's way of life is at the coast and they don't want to change that now, but they don't want their kids to bear that brunt so can they opt in ahead for a flood insurance discount or other kind of benefit that kind of helps them get a

pre-disaster buyout, again with that lens of equity, for now we haven't fixed that yet, but those are a few different ways that we can look at it.

Burns

And so thinking about managed retreat, first there are a few examples of property buyouts in Massachusetts, there was a community on an inland tidal river that had to be evacuated by boats from their neighborhood every time there was like a two-year flood event. FEMA funding was used to buy a portion of the properties in that neighborhood and demolish them and return that land to, I think, a state agency, runs a park nearby. Some of the coastal communities in Massachusetts particularly Scituate have had a few property buyouts that have successfully happened. I talked about the Municipal Vulnerability Preparedness program in Massachusetts, which is a facilitated conversation at the municipal level. Managed retreat has come up, generally it's been brought up in my experience at least, by someone who works for a state agency rather than a local resident. The local residents may be thinking about it but it's not something that I've experienced people are really ready to bring up themselves with their neighbors and their town officials. There's funding authorized for it in Massachusetts' most recent environmental bond.

And then the other thing I wanted to point out to your point about climate migration. The town of Holyoke in Massachusetts has a population I believe of 2,000 people who migrated from Puerto Rico after the hurricane that just recently happened, they received funding from the MVP program to interview those residents and do a study on managed, no not managed retreat but the climate migration and the shared vulnerability that Holyoke now has with Puerto Rico. That report is available online. I think that's all I wanted to say, thanks.

Boicourt

Yeah I forgot to mention zoning solutions, we talked a little bit about zoning, but again, this is not a sort of, this is a gray issue, it's nuanced, and so the solution for lower Manhattan might not be the solution for Broad Channel where I showed that picture of a little girl walking in a high tide event, and it'll change over time, so the more that we can have flexibility and account for an increased demand for that over time is really critical. From a zoning perspective, one thing New York City is doing is not allowing any increased density in areas where they will be permanently inundated by 2050, 2080, and it's a small thing but it is significant in increasing density in areas, so they are somehow doing a little bit of that and I think we stand to see more of that.

Bresette

Thanks for the question, we have another one in the back.

Audience

Hi my name is Alice, I'm with the U.S. Green Building Council and I also go to school right near Holyoke in Massachusetts. So I'm curious of what the outreach has been for the MVP program to other communities that haven't joined yet, and then also I noticed there were a few regional partnerships on the map and so I'm curious, if you could talk more about those, thanks.

Burns

Yes thanks. So your first question about outreach to other communities is actually a little relevant to some of the topics that Sam has brought up today. The program has been around for three years and there's been an uptick in people signing up every year, but we're getting to a point now where it's the regional communities that really don't have much dedicated staff that are struggling to access the program. And one of the things that we talk about a lot when we're talking with municipalities and with groups in Massachusetts is that watershed groups and local land trusts and other outreach organizations can really play a key role in helping municipalities understand and access the program. And one of the ways that that's happening actually is through regional partnerships, so if there are communities out in western Mass, like you might know called the Hilltowns that really don't have dedicated staff, so there are partner organizations now looking at helping them submit a regional application so that the staff they have can go towards a combined effort and then lay some groundwork for developing some of the plans that other municipalities have, like open space plans for example, that can sort of help advance the project along. I think the other key thing to point out about the regional partnerships is that a lot

of the hazards that communities experience are based on regional assets like rivers and drinking water, aquifers and things like that, so the capacity to plan regionally is really important and communities are able to apply for Regional Action Grants regionally, even if they didn't plan regionally together, so even on the back end if they decide like oh look at that, we have the exact same vulnerability because of the river that we share, they can decide to work regionally after that.

Bresette

That sounds pretty smart to get people that option. There was another question here sort of in the back of the front set.

Audience

I want to go to your Town Meeting because we don't always solve problems at ours.

Bresette

I haven't lived there since I was 18, I never actually went to one.

Audience

Do we buy a new grater, or do we fix the blade for another 10 years? So it's really wonderful to hear all these New England inspiring examples for adaptation work. And I wanted to maybe end on this note, or just build a little bit, there's a fair amount of psychology around climate change that talks about that in the United States, at least it's easier to talk about adaptation than mitigation at the personal level, and I'm just curious in all three of your programs, do you find in the community engagement work you're doing, does mitigation come up? And if so, where have you seen it go?

Belknap

We've actually been working on mitigation far longer than we have been on adaptation. A lot of our most well-known work over the last 10 or 15 years has been on the energy efficiency side of things and renewable energy work. Granted, it was started as a way to reduce costs for island and coastal communities, but as we all should know I hope, mitigation is way cheaper than adaptation. So we've been able to kind of build up that understanding that what we've been encouraging you to do in order to save money is a really effective strategy at mitigating the impacts of climate change, so it provides for us it's returning to a conversation that our communities are familiar with so, it's been less of a challenge. And I think often because individuals are able to look at solutions like that and see what they can do on their own rather than towns having to talk about planning infrastructure projects, it's a lot more actionable, so that's been our experience.

Boicourt

We've actually been having the reverse problem. I mean New York state just passed pretty aggressive climate legislation, and New Jersey has been supportive and moved forward on greenhouse gas reduction legislation, so at least regionally, and you know, as a nation 70 percent of people think that climate change is a problem. Especially with adaptation, we find that there's a real cognitive disconnect between, I think there's a perspective that it's going to get solved or not at the greenhouse gas reduction end, and they do not realize that we are locked into four or six feet of sea level rise by the end of the century. So it does come up but actually we're fighting to wave our hands seven years out of Sandy with our electeds and communities but you know, communities get it but I think it's not reaching the top in terms of priority.

Burns

Massachusetts has some pretty proactive mitigation goals, I think they're working right now on actually making an actionable plan for the 80 percent reduction by 2050, so they are working on that and you know mitigation comes up in the resilience planning a little bit, people often want to know that mitigation is happening, to kind of get a handle of on what Kate was saying, about like how bad do we really think it's going to be, and give a sense that we're being proactive to try and prevent some of the the worse potential future outcomes.

Another way that mitigation has come up is just conversations around where solar panels are sited and how the development of the infrastructure to reduce our emissions go in, and then I think the last thing I'll say about that is that something that Massachusetts is also thinking about which is exciting is the carbon sequestration benefits of some of the existing natural infrastructure, and I think being able to talk both about the resilience benefits of things like forests and also the long term carbon sequestration is really going to just continue to open doors to helping people think about how they manage their land.

Belknap

I've been thrilled to see the direction that Maine has taken with the formation of the Governor's Climate Council that's been charged with looking at those exact type of issues, not just what are our natural resources, what are the vulnerabilities, but what are the opportunities for carbon sequestration and mitigation, both inland and coastal Maine, so I'll have a better answer for you in a couple years as these conversations progress.

Bresette

Thanks. Alright, well unless anyone has any other questions I have a last one, we'll end here, and it actually it's a bit of a doozy but you kind of just presaged it a little bit. So let's say EESI has a follow up Northeast Coastal Resilience Briefing part two in three to five years. What are some of the success stories that you would like to be able to tell that future audience that you've been able to achieve in the intervening years? And Sarah I will start with you this time because Sam had the last word on that last question.

Burns

Okay so that is a really good question, thank you. I think within three to five years, I would be excited to see, so the things that we're thinking pretty actively now about how to advance and resilience planning, are getting municipalities and implementers to be thinking about pretty bold projects like being innovative and really trying to get out ahead of the problem. I think Sam mentioned this earlier, but it's really tough especially Massachusetts is also a home rule state, a lot of municipalities I think have real challenges with just deferred maintenance problems and operating budgets and you know how are they going to afford to be compliant with their storm sewer, the MS4 requirements, so there are a lot of today problems that have funding needs, and I think if we can work to help get beyond those today problems and incorporate the future resilience planning into those and help with funding, that would be a great success.

And then just one other thing to add to that, Massachusetts is working on climate justice and equity and making sure that that's incorporated into the MVP program, there's extra money available for outreach and there's other incentives sort of baked in, but I think that updating on that work and engaging those communities and being really mindful about how we do equity considerations in this planning, especially to Kate's point about where vulnerable populations live now, an update on that in three to five years and making some good progress on that would be fantastic.

Boicourt

Alright okay, so you know number one that we would have a clear governance structure for flood resilience in a fund tied to it at the state level for a couple reasons. One, equity, you know we can't have this Hoboken over here who's wealthy and you know one next to it not adapted, and we need to broaden that risk and recognize the you know, how we have to kind of approach that as a state and federal government. So a clear manager, a clear funding source that is well communicated and well connected to federal and local funding sources, and also you know a real leadership that acknowledges we are going to start a statewide MVP-like process where every community has a chance to adapt. We have two programs, the climate smart communities in New York state, and an emerging program that New Jersey DEP is doing with a Resilient NJ grant process that are trying to bring together multiple communities there in New Jersey and in New York State. We need an MVP-like climate smart communities through all of our regions really, and possibly tied to a flood district so that there's clear management over time on the watershed scale, or sub watershed scale, so that we sort of have clear targets, clear governance, you know who to call and it's funded.

Belknap

I'd love to be able to report that the climate council has made significant recommendations and we're well on our way to making to meeting our 80 percent reductions by 2050, that the communities are on board with that, and doing so, not just because of the threat of climate change but because they recognize that it makes good financial and planning sense for their communities, and more importantly that our communities are working together more closely to support each other with the support of some future entity that can provide the technical and planning support that they don't have the capacity to meet on their own.

Bresette

Thanks for those answers. We are just about out of time, I'd like to thank our panel, Sarah, Kate, and Sam, thank you very much for traveling to be with us today and for enlightening all of us, I certainly learned a lot so thank you very much, I think they deserve a hand. Thanks again to team EESI, there are lots of folks here and everyone had a hand in today's briefing except for me, I kind of just showed up, but thanks to everybody who put a lot of work into this, this is a great briefing. The next one is on the West Coast, it comes in December, December 4th, thank you Amber, and we have one next Friday on the Global Report, I hope you'll join us for that. The website is here, please retweet us, whatever you'd like to do, please feel free to just talk with any of us on the team after this, or give us a call or an email later if we can be helpful. With that, thanks everybody for taking the time out of your day to join us, hope to see you next time, and thanks again to our wonderful panel, thank you.
