Climate Change Adaptation for State and Local Governments Achieving Buy-In for Adaptation

Webcast Transcript

March 21, 2013

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Webcast Agenda and Meeting Logistics

Slide 1 and 2: Introduction Slides

Operator: Good afternoon. My name is Phyllis, and I will be your conference operator for today. At this time, I would like to welcome everyone to the EPA's "Achieving Buy-In for Adaptation" conference call. All lines have been placed on mute to prevent any background noise. If you should need assistance during the call, please press star then zero and an operator will come back online to assist you. Thank you.

Ms. Emma Zinsmeister, you may begin your conference.

Emma Zinsmeister: Thank you, and welcome to everyone to our conference call today. This is the first of a three-part series that we're going to be doing on Climate Change Adaption for State and Local Governments.

These Webcasts are being put on by US EPA's State and Local Climate and Energy Program, and today's topic is going to be Achieving Buy-In for Adaptation.

Our subsequent calls will be covering dealing with uncertainty in decision making and then also building a successful funding strategy for adaptation implementation, and there'll be more information about those calls later in today's presentation.

Slide 3: Webcast Agenda

Emma Zinsmeister: We have a very full agenda today so we're going to dive right in. We'll be starting off with some logistical information about GoToMeeting and how you can enter your questions throughout the presentation, and then I'll share background information about our program here at EPA as well as today's topic.

We'll then move into our first featured speaker presentation. Cara Pike from the Social Capital Project will be sharing her insights on the current state of research and practice on climate communications and how to build stakeholder support for adaptation.

We'll then move into a presentation from Cynthia Rosenzweig of NASA who'll be talking about climate change adaptation in urban environment using New York City as an example.

And then we'll hear a case study from Nancy Gilliam and Gwen Griffith about the Climate Solutions University and the works that they're doing with communities across the country to guide them through the adaptation, planning, and implementation process.

And then we'll hear another case study from J. T. Lockman with Catalysis Adaptation Partners, and he'll be talking about their COAST tool to help communities look at projections, sea level rise, and storm surge and make decisions for their adaptation strategies.

After all of the presentations today, we'll have a facilitated panel discussion with our speakers and then we'll go into question and answer using your audience questions and get those entered for you.

And then at the end of the call, when everyone exits out of GoToMeeting, there will be an opportunity to provide feedback. I highly encourage everyone to participate in that survey. We use that information to develop the calls like this and actually, this series that we're offering right now is based on a previous series we held in 2010 and 2011 that covered basic regional climate impact adaptation planning framework and federal resources for state and local adaptation. And we use the feedback from those calls to design the content for this current series. So your feedback is very important to us.

So to get started, I'm going to turn things over to Wendy Jaglom from ICF who's managing logistics today. She's going to run through a couple of points on how to use GoToMeeting and to participate today. Wendy?

Slide 4: GoToWebinar Software Logistics

Wendy Jaglom: Thanks Emma. So everybody will be muted throughout the Webcast to minimize background noise. However, you will be able to submit questions and comments in writing, which I'll cover on the next slide. PDFs and audio files of today's session will be made available for download in a few weeks at the link on your screen. And throughout the Webcast, if you have any technical difficulties, please feel free to contact me, Wendy Jaglom at the e-mail address on your screen, wendy.jaglom@icfi.com.

Next slide, please.

Next slide?

Slide 5: Questions (GoToMeeting)

Great. So if you do have questions, please submit your question to the GoToWebinar question pane. We will compile the questions and ask them during the Q&A session at the end of the Webinar.

We encourage you to please submit your questions for the speakers throughout the Webinar. We would want to hear your questions and make sure the Q&A is as at rich as it can be. Please include the name of your presenter, the name of the presenter that you would like to answer the question. And to submit a question, simply enter your question into the question pane and hit Send.

Next slide?

Slide 6: Optional Feedback (GoTo Meeting)

At the end of the Webcast, as Emma mentioned, a pop-up window will appear when you exit GoToWebinar.

We – please do take a few minutes to respond to those optional questions and provide your feedback. As Emma noted, it's incredibly helpful for us as we create Webcasts down the road.

Next slide.

Slide 7: U.S. EPA's State and Local Climate and Energy Program – Bridging the Gap Across Environment and Energy Decision-Making

Emma Zinsmeister: All right. Thank you, Wendy.

So just to put folks on the line, I wanted to share a little bit about what our State and Local Climate Energy Program is here at EPA.

We really strive to help states and locals bridge the gap in their environmental and energy decision making, and we really focus on opportunities for reducing greenhouse gas emissions and we do this in several ways. Primarily, we are offering best practice information and case studies, analytical tools, communication resources, peer exchange and training opportunities like this Webcast, and all these resources are available at the web link at the bottom of the slide here.

And our focus is really to help states and locals understand the opportunities that they have to reduce greenhouse gas emissions while achieving other program and policy goals and getting other social, economic and health benefits, and things like pursuing energy efficiency as a way to lower the cost of compliance, with air standards and things like that are a big focus for our program.

And so, we try to foster collaboration across state and local organizations for this purpose and we have a lot of resources available that we encourage you to take a look at.

And with this series, we're moving into the topic of adaptation since we've heard directly from our stakeholders that this is another area where there's a lot of opportunity and a lot of need for information and resources, and we see this as a chance for us to help states and locals build comprehensive approaches to climate change that integrate both mitigation and adaptation strategies so that communities can help to reduce climate impacts as well as make sure that their communities are prepared and resilient in the face of a changing climate.

Slide 8: Brief Background

So as a background to the topic, the science has made clear that climate change is happening at a very increasing rate. And so when we talk about mitigation, we're talking about efforts to slow the rate of this change which primarily involves reducing greenhouse gas emissions, and the way in which this can be done and see it in local level is through various strategies such as energy efficiency, renewable energy, materials management, community design and transportation efforts.

Adaptation, on the other hand, looks at efforts to moderate the harm or capitalize on the opportunities that are presented by changes in the climate, and this is important because historical data in the past is not necessarily a good indication of what our future is going to look like.

So to make sure that our investments are successful, we have to consider what future conditions are going to look like.

So to adapt states and locals and their partners, we can look at adjusting things like their building and development practices, transportation infrastructures, storm water systems and other things to make sure that they're prepared for changing condition.

Slide 9: Example Adaptation Planning Process

So just as a brief summary of what an adaptation planning process may look like, it involves a variety of steps that may or may not look exactly like this. There are many different planning frameworks. This is just an example. It depends – and it will depend on your community or your state's approach but essentially, it involves some key things such as building support for preparing for climate change amongst our stakeholders, looking at the projected impacts and how those may affect your programs and planning areas, assessing your vulnerability and risk, and then setting goals and deciding what actions to take, and then ultimately implementation and evaluation.

The two resources listed there are excellent guides that provide great detailed framework for you to follow in your adaptation planning efforts. The Preparing for Climate Change guidebook put out by ICLEI is a great resource and actually our speakers today, Nancy and Gwen, had a hand in the development of that. And then also on the state of California has put out a really unique guide specifically on adaptation planning in California and guidance for local communities in their state.

You'll be hearing about other frameworks today from our speakers Cynthia and others.

So certainly, take a look at these resources as you develop you planning strategies.

Slide 10: U.S. EPA Resources

I've listed on the next couple of slides some sources from EPA and other organizations that you may find useful as well. There's a lot of good material here. The slides were circulated before the Webcast today. So please take a look at these links.

I will just point out that the Webcast series that I mentioned from 2010, 2011 is linked to here so you can get those recordings and slides and other EPA programs that offer a lot of resources include the Climate Ready Estuaries Program. The Climate Ready Water Utilities Program has a great planning framework and resources and tools for assessing risk and opportunities to water infrastructure and then we also have our Urban Heat Island Reduction Program.

Slide 11: Additional Resources

Other non-EPA resources are also listed here. These include a variety of databases of case studies, data from the US Global Change Research Program and their National Climate Assessment is very useful. They have regional scenarios that folks may be able to utilize as well. So I recommend that you check up these things.

Slide 12: Adaptation Webcast Mini-Series

And then also, as I mentioned, our Webcast today is part of a series. The next two topics, Overcoming the Uncertainty Barrier to Adaptation and Attracting Funding for Adaptation are meant to build upon the discussion we're going to be having today. So I encourage folks to sign up for our newsletter which is at the link below here where we will be sharing the registration information once that becomes available.

Slide 13: Contact Information

So in closing, I hope folks will take a look at our resources and if anyone has any questions about our program or about any of the resources that I've linked to here, certainly feel free to reach out for me and I'd be happy to assist you.

Poll Question #1

Emma Zinsmeister: So with that, we're going to move into our first poll question for the audience. We hope folks that – you will take just a moment to provide feedback for us. And so Wendy, if you want to pull that up?

Wendy Jaglom: Sure. So the question should be on your screen now, and the question is "What is your level of experience or familiarity with climate change adaptation"?

So there are five choices. If you could take a moment to enter your response and I'll give everyone just a minute or two to enter in their responses.

Emma Zinsmeister: All right. If you want to go ahead and pull up the results?

Wendy Jaglom: Sure.

So it looks like 38 percent of participants have started to take action and identified or initiated a project.

27 percent have considered adaptation but not – have not taken action due to lack of resources.

20 percent have completed at least one project.

Nine percent have considered adaptation but not taken action since it is controversial.

And seven percent is not – are not sure how adaptation is different from mitigation.

Emma Zinsmeister: Great. Thank you, Wendy.

And so hopefully, we'll be able to address the needs in questions highlighted by the results of the poll today as well as through our subsequent Webcasts.

So with that, we're going to move into our first speaker presentation.

Adaptation Communications: An Overview of the Research and Practice

Slide 1: Introduction Slide

Cara Pike is the Director of Climate Access. She developed this network in her role as the Founder and Director of the Resource Innovation Group's Social Capital Project. She was formerly the Vice President of Communications for the leading nonprofit environmental law firm Earth Justice.

Cara was a founding Board Member of the Global Footprint Network. She is an Advisory Board Member of David Suzuki's Stonehouse Standing Circle and she serves on the boards of Resource Media and the Hollyhock Educational Foundation.

She has a Masters of Science in Environmental Communications from California State University-Fullerton and a Bachelor of Arts in Film and Communications and Environmental Science from McGill University.

So welcome, Cara, and thank you for your presentation.

Slide 2: The Social Capital Project

Cara Pike: Thank you so much for the opportunity to be here today. I'm really looking forward to it. And as was mentioned, I direct the Social Capital Project at the Resource Innovation Group. Some of you may be familiar with research. We also do training and consulting largely with nonprofit and government agencies working on environmental and climate communications.

Slide 3: www.climateaccess.org

And most recently, we launched climateaccess.org which is a network for all of us aiming to build public support for climate policy and behavior change.

Slide 4: Communicating Climate Adaptation and Preparation

So today, I'm looking forward to talking to you about some of the trends from research in the field on adaptation communication and spend a fair amount of time on tips for how to frame the conversation and move people into supporting policy.

The work that – some of the ideas I'll be sharing with you today come from a body of work that we're just engaged in right now. It started, though, back in 2007 tracking both polls as well as academic articles related to adaptation communication, some of them you'll see there on the screen.

So I'll be pulling from these resources to share some ideas as well as what we're seeing from the Climate Access Network and a study we just did on 671 climate communication effort in the US.

Slide 5: Related Fields of Social Science

So just a few of the fields that we're touching on which I think is actually really important to mention because climate – addressing climate is an interdisciplinary effort and the social sciences are no different. So we look across a number of different fields to gain insight.

So let me just talk about a few of the trends that we're seeing and obviously, you're seeing some of these yourselves so I'll just be reinforcing what you might already be experiencing.

Slide 6: Adaptation Comes Home

But since we've started tracking back in 2007, the big shift is that adaptation has gone from being a side issue, if not a publicly contested issue around whether it was appropriate to pursue adaptation and then for concern that it might detract attention from mitigation. But that argument is largely over.

And the other big shift was that when we started looking at the trends 2007, 2008, we saw that climate adaptation was largely an issue of what was happening in other countries, particularly poor country and to vulnerable populations within those countries but it's probably no surprise given the number of storm we've experienced over the past five years that the issue is starting to come home.

Another interesting note on the research side is that the research field is filling out as well. So when we first started looking at this, there was virtually nothing done on climate adaptation in particular but that's starting to change which is a good sign.

Slide 7: The Mitigation-Adaptation Intersection

Another big trend that you can see from the research in practice is the mitigation and adaptation intersections. As I just mentioned, it used to be debated whether you'd pursue one versus the other but now it's really quite clear to many that mitigation alone is just not going to be adequate.

There's still more that could be done to really integrate adaptation and mitigation. In some situations, they're seen as substitutes for one another versus complimentary strategy.

The other thing that is tracked in a number of research studies at this point is that when you start with talking with decision makers or stakeholders or the public about climate impact, what's actually happening on the local level in their community, it can build to interest in mitigation over time because when you start to explore what some of the solutions might be, mitigation starts looking pretty good, particularly in light of a two degrees temperature shift.

Another trend really driving this shift is obviously we have seen more extreme weather events in the U.S. There's been more coverage on that and the polling shows that Americans are starting to connect the dot between storms and climate change.

Slide 8: Linking Extreme Weather to Climate

There're a couple of different things in effect here which I think are quite interesting to point out. The first is that for those who are already somewhat engaged in the climate conversation at either under the poll, either very alarmed or motivated to dismiss the conversation, these extreme weather events provide motivated reasoning. So that's why you're going to get some people who are alarmed saying, "See, I showed you." But if it's a really intense snowstorm, those are dismissed and we're also looking for those clues as well to say how can this be global warming.

I think there's actually something more important going on now though, and it really impacts the Americans who are more in the middle on this issue, and that's the sense that there is experiential learning going on with storm events but also it's really important to point out what just shifts in the growing season, so it doesn't necessarily have to be something directly experienced or at a catastrophic level for that experiential learning, and it's really starting to wake up some of the Americans who perhaps are concerned about climate before but not really sure what it meant for them. It's starting to shift that a bit.

I think one of the challenges that we've seen in light of events like hurricane Sandy is the tendency to be focusing in the short term and reacting to the storm. It's much more difficult to move into a conversation about why and how we should be rebuilding or preparing to avoid these challenges in the future.

Nonetheless, lots of opportunity to leverage those events if it's done properly and one of the key things there is, of course, to never exaggerate the role of any one storm as evidence of global warming but rather to turn to some of the trends.

Slide 9: Addressing Uncertainty

Uncertainty is a really big issue. I know this is a big deal in planning but it's also actually very important when it comes to perception and public perception of the issue.

Part of what needs to happen, what you see in risk communication situations is that you recognize that people have their own level of uncertainty as to how something like climate disruption will impact their lives, what it means for them and what they should do about it. And so you really have to start with recognizing that uncertainty and making sure to not use it as a reason for inaction, which has largely have been the case but shifting more to an insurance type mold where it's simply prudent and wise to try and be prepared.

Slide 10: The Preparation Frame

So related to that is there is growing evidence using that type of a preparation frame can work quite well in engaging the public. One of the benefits of that type of a frame is that you don't

have to start with climate. There are so many different ways to start the conversation for the – and for those who may be aren't willing to talk directly, you can talk about preparing for storm events, preparing for more droughts. So we've got to prepare for the changes to our growing seasons that are impacting our local farmers.

But I want to make the point I think it's extremely important to take the time to eventually link the climate because eventually, you need to get into some of the tougher issues related to that.

Slide 11: Vulnerability and Resilience

I also just wanted to make reference to what – some of the issues around vulnerability and resilience, that obviously there are disproportionate impacts that you have to be very aware of and thinking about equity in your outreach. And so, one quick point on that is, well, resiliency might sound good to one community, to another it can sound like an excuse for inaction or denial of expectation that some of the patterns of the past will continue.

Slide 12: Perceived Importance of Protecting Local Resources

So really need to make sure that there's sensitivity to different stakeholder needs. But really, there's a lot of traction around protecting local resources which you can come back to and look at this slide later to see some of the steps, but a lot of opportunities to connect there.

Slide 13: Recommendations: 1. Caution in conveying impacts

So let me just wrap now with mentioning a few recommendations. The first is that you do need to be cautious when you're conveying climate impacts to avoid long lists of overwhelming scary issues, to avoid impacts always being projected far out into the future to make sure you track back to current trends. Very important, folks.

The point there is to focus on direct local impacts and make sure there's realistic hope about what can be done. Acting to protect ourselves in the face of climate disruption can lead to benefit. Also important to not over exaggerate those benefits, though, as well.

Slide 14: Recommendations: 2. Building from extreme weather to action

As I said earlier, building from extreme weather event actions. There has been some – quite a lot of movements on this and movement in the polls over the past year and a half but again, making sure that you start to fill in the advocacy gap which a lot of people feel in the wake of events such as Sandy.

Slide 15: Recommendations: 3. Tap Values

Always important to tap values when engaging the public and particularly when getting into climate impacts and adaptation, which can be quite emotional, to really make sure that we're focusing on the idea of safe prosperous communities that will benefit from preventive action, that prevention does pay, that we do have a long trend in the US around the idea of being

prepared like the boy scouts and girl scouts. So really saying, "Why wait?" Even if there is a hundred percent certainty, why wait and take the risk?

On the other hand, we know that there's more scientific uncertainty on climate change than most issues we address from a public policy standpoint. We also have to be prepared to hold that space as well and balance that.

The idea of readiness, as I've just said, is important, for people's health and well-being. Critic polls are starting to feel the pinch on that in light of some of these changes in weather trends and well, I try and avoid saying we're looking for a clean energy future. We have to make the solutions here. We tend to have concern about the type of world that we are leading – leaving for future generations.

Slide 16: Framing Considerations

A couple of cautionary notes. Urgency can be tricky when talking about climate adaptation around storms is one thing, but when some of the trends go really bad or developed 30 years, it's much harder to think about how to build into a conversation like that. So it's really a point of creating an engagement ladder that starts where people are at and move into some of those more intense deeper issues.

It is also really important when we talk about adaptation to empathize collective action or approaches on the regional level that we don't have one community or one home under – excuse me, one homeowner pitted against another, and really the best way to solve these challenges are by working together.

And finally, it's important to set milestones for success because this is an extremely long-term issue that we're just starting to engage the public on. So we need to make sure we're not approaching it as though we're going to solve the problem entirely, but rather work towards key goals that show progress on the ground.

Slide 17: Contact Us

So thanks again for the opportunity to be with all of you and I look forward to further conversations.

Thanks.

Emma Zinsmeister: Thank you, Cara.

Through the subsequent presentations that we'll hear today, we'll see how some of the principles and strategies that Cara has mentioned will be applied and can be applied and how you maybe able to use them in your own communities.

Poll Question #2

Emma Zinsmeister: So next up, we have a quick poll question for folks. Which groups appear to be natural allies in your state or community for moving forward on climate change adaptation?

If you could please select all of these groups that you think apply in your situation. And we'll give folks just a minute to submit their answers.

OK. If you want to pull up the results?

So it looks like groups such as individual community members rank among the top as groups that engage in natural allies for adaptation. Also educational institutions, they're actually 81 percent, and then elect officials and churches, and the business community, not at the top but 55 percent is still pretty good.

So thank you for your responses there.

Climate Adaptation Planning in Urban Environments

Slide 1: Introduction Slide

Emma Zinsmeister: With that, we're moving to our next feature presentation from Cynthia Rosenzweig.

Cynthia is a Senior Research Scientist at the NASA Goddard Institute for Space Studies, where she heads the Climate Impacts Group. She recently co-chaired the New York City Panel on Climate Change, a body of experts convened by the mayor to advise the city on adaptation for its critical infrastructure. She co-led the Metropolitan East Coast Regional Assessment of the US National Assessment of Potential Consequences of Climate Variability and Change. She was a coordinating lead author of the IPCC Working Group II Fourth Assessment Report. She's also the co-editor of the Urban Climate Change Research Network's First Assessment Report on Climate Change in Cities, which she'll be talking about a bit today in her presentation. That assessment is the first ever interdisciplinary and cross-regional science-based assessment to address climate risks adaptation, mitigation, and policy relevant to cities. She was named as one of Nature's top 10 people who mattered in 2012 by the Science Journal Major, and she's also a recipient of the Guggenheim Fellowship, and she's also a professor at Columbia University's Earth Institute.

So with that, Cynthia, I will turn it over to you for your presentation.

Thank you.

Wendy Jaglom: Hi, Cynthia. This is Wendy. Do you see the drop down menu on your screen? There we go, perfect. It looks like we can see your browser right now.

Emma Zinsmeister: You may also be on mute.

Cynthia Rosenzweig: Yes. OK. Hi. What do I need to do to start it?

Wendy Jaglom: So if you can just pull up your presentation?

Cynthia Rosenzweig: So I show my screen?

Wendy Jaglom: Yes, I think we're already seeing your screen.

Cynthia Rosenzweig: OK, and how do I get to see it?

Wendy Jaglom: If you can just pull up your PowerPoint presentation on your computer?

Cynthia Rosenzweig: Oh, oh, OK. Got it. Got it, got it, got it. OK. And you'll – you're going to advance it?

Wendy Jaglom: No, you'll be in control of the slides.

Cynthia Rosenzweig: OK. I'm not sure. I don't – sorry, I'm very sorry, I don't think this is working.

Wendy Jaglom: Yes, we can see it. You can see the PowerPoint now, so if you just put it into a fullscreen mode now?

Cynthia Rosenzweig: All right, hold on. No, I'm sorry, I don't see it.

Wendy Jaglom: So…

Cynthia Rosenzweig: Let's see. I don't – sorry, it's not on my screen.

Wendy Jaglom: OK. But we saw it.

Cynthia Rosenzweig: So can – if I – I have a copy of it ready, so can – will you advance it for me? Is that possible?

Wendy Jaglom: Sure, just one second.

Cynthia Rosenzweig: OK, let's do that. So the NASA person is challenged technologically. Sorry. Great. OK. So are you ready?

Wendy Jaglom: Just one second.

Cynthia Rosenzweig: OK.

Wendy Jaglom: OK. Can you see it now?

Cynthia Rosenzweig: Hold on. No, but that's OK. I'll let – if it's on, I'm just – I will advance the slides, OK? I think this'll work if everyone can see it. So let' – so we can start?

Wendy Jaglom: OK. Just let me know when I should advance the slide.

Cynthia Rosenzweig: OK, great. Sorry. So I'm very happy to be on the Webinar today sharing some experiences in New York City and also in cities around the world in adaptation planning.

The next slide.

Slide 2: New York City Adaptation Process 2008 - 2011

This is a schematic of the New York City adaptation process that started in 2008, emphasizing some of the key elements.

The first is leadership, and in New York mayor Bloomberg is a very strong leader in emphasizing to the residents of, not only New York City but the region, how important it is to prepare for a changing climate.

Then within the city, their administration, there is an Office of Long-term Planning and Sustainability which performs the very important role of coordination on climate change adaptation planning. So that's another key element.

Then on the left – bottom left hand side, the various agencies who are responsible, this is focused on infrastructure planning, then got together and were part of a Climate Change Adaptation Task Force across energy transportation, water and waste, and communication systems.

And then finally on then – then the other –last part of the process has to do with the climate information and the climate risk information. So we – the mayor convened a panel of experts, but now with the National Climate Assessment now being presented in draft form in which will be coming online, basically, every community around the - and region around the country will have climate risk information that they can use in their process.

So, the next slide. Please?

Slide 3: NPCC Approach

This is about creating an approach that can be shared and communicated as Cara was saying and this is one of the ones that we - the main one we presented in New York which is presenting client-based issues of climate adaptation as a Climate Risk as a Risk Management Issue and then Developing Flexible Adaption Pathways Over Time. And what this slide is showing is the blue wavy line is acceptable level of risk that the people in the region have, and that if we just do very rigid and one-time thing, we will cross those levels of risk, that's the blue and the orange line, but that, really, we have to be acting both in adaption and mitigation, the yellow and green wavy lines, over time to maintain our systems below the acceptable level of risk. And the key part also is because climate is changing - and climate conditions are changing, that monitoring and reassessing are – of the climate risk and the adaptations and the efficacy of the adaptations needs to – need to be part of the program.

Next slide, please.

Slide 4: Information and Tools

So what we did in New York was we created a set of information and tools. We did with foundation reports with background knowledge, brought forward best practices, provided resource guide, and then specifically made some workbooks for stakeholders which showed the climate risk information for the region, how an adaptation process could go forward and then also began to raise the issues of climate – well, climate protection levels or the potential for changes in standards and regulations in local areas, and we tried to provide the projection of the risk in very user-friendly form such as in tear sheets as are shown in the bottom.

Next slide, please.

Slide 5: Developing Climate Scenarios

And what - this is about how we actually handled the uncertainties in - at the very first stage of the adaptation process, which is we did use global climate model to downscale for the region but we also used a lot of the local climate information as well, what are the observed data showing? Start with where we are, it's very important.

And then when the climate model projections are robust enough, we can use those in a quantitative way but also there're qualitative statements that can be made as well that can help develop the first set of climate risk factors for any given region which are the real way to get going.

These are identifying the most important climate hazards for the region.

So in New York, they are warmer temperatures in many places, I think, around the country. Certainly, warmer temperature is more frequent and intense heat wave. Also - there's also – heavier downpours is another one, and then for coastal areas, sea level rise and coastal flooding.

Next slide.

Slide 6: Design Adaptation Process

This is the adaptation process that was followed in the New York region. In this, there's lots of variation on this and basically, I think each community and municipality can develop their own. But basically, these are the elements of an adaptation process to identify the current and future hazards, conduct an inventory of the vulnerabilities so that those can be identified, the infrastructure assets characterizing the risks of the - putting together the climate hazards and that inventory to say, well, what are the risks and what are the most important risks? There could be many, there are many but prioritizing on just several is probably a good place to go.

And then developing an initial list of strategies, identifying opportunities for coordination, very important so that we don't get siloed in our responses, and then prepare and implement resilient plans. And then don't forget number eight, monitor and reassess. That has to be built in from the beginning so we can learn as we go.

Next slide.

Slide 7: Framing Adaptation

So with adaptation, you know there're a lot of different parts to it and it can be the - sometimes you know, it's - it can be very fine grained but what should we do for this bridge or this road that are - this train station? But just to be – it just – I think it's always good to frame at the beginning of the process with the first of all what are the goals? To reduce the level of physical, social, and economic impacts of climate and to take advantage of new opportunities if there are.

So it's good to think about different types of adaptation in terms of - there's lots that can be done just in management and operations today.

In New York, we always give the example of clean the drains before the snowstorm on the roads and in fact, now the crews are out doing that whenever there's projections of whether we have weather forecast of storms and that's very, very helpful of all and has – already we're having less road flooding with our intense precipitation events.

Of course, there's much larger and more expensive physical components of infrastructure that what we say there is to use the cycle of – of the capital cycle for the repairs as those come in and then, of course, policies such as the standards and regulations.

And these adaptation actions can be done by different groups of course, both public organizations, local, municipal, county, state, and national but also, again, some of the private sector as well.

And then there's lot - there's the varying levels of effort. Look – I think it's very important – it was very important in New York, too, to develop some incremental actions that can be taken right away while they're planning for large shift can get going and that's another thing very much to think about to match the length of time, for example, of the infrastructure and the adaption short-term, less than five years. That's really the climate variability of today. Medium-term and long-term, then those are beginning to get into where the projections are starting.

As always, we do need to be prepared for abrupt changes too, though, in terms of tipping point, policy triggers as we, for example, are experiencing in New York City with the recovery from hurricane Sandy right now, and I'm going to talk about that in a few moments.

Next slide.

Slide 8: Hurricane Sandy – Forecasting the Storm

In fact, here's the next slide.

It said tipping point for – is the response to hurricane Sandy is being a tipping point for responding to changing climate risk.

So just a very brief recap of the storm that on the science side, it was well-forecast in advance and this was, I think, it was a great sort of lesson about well, you know, the science of our extreme events of today. It's certainly improving and it is also improving in the future as well.

Next slide, please?

Slide 9: Hurricane Sandy – Forecasting the Impacts

And so, it's not – but it's not only the climate part of the storm that was forecast well. Actually, from the work that has been done in - for example in the first National Climate Assessment and following on from that, the impact of the extreme event of the hurricane here were also well-forecast and we really see in these – of these – over - from over 10 years ago that the issues of both the vulnerable communities and the interdependent critical infrastructure systems have been highlighted in the report and this is another thing I think that's very important as we have - and now we have the National Climate Assessment in the regional work so that we have this foundation of the knowledge both of the science and of the impact.

The next one.

Slide 10: Hurricane Sandy – Links to Climate Risk Responses

And so, what we're doing in New York is linking hurricane Sandy to climate risk responses. There were some actions already, so that green streets, vegetation, observing storm water had been put in place, getting advanced library data for helping on the coastal – characterize the coastal risk, incorporating sea level rise into the comprehensive waterfront plan and there were – and there had been already Enhanced Emergency Response and Preparedness Program which actually then contributed to the evacuation during hurricane Sandy.

What's happening now is that post Sandy, these efforts are being intensified.

So it's really important that we start ahead of time, have plans and information foundation knowledge in place so that, you know, when these terrible events, and we hope that they will be avoided in all your communities across the country but they do happen, and that then we're ready to intensify efforts afterwards.

Slide 11: Conclusions

So in just concluding, I have three more slides. Just a conclusion on the New York part and then I just wanted to just end with telling a little bit more about cities around the world.

So there are lots of adaptation process examples. We've seen some on the first two presentations but basically, this basic process of what was done in New York is available and many – and others are too so that it's – these things don't have to be invented from scratch anymore, that there's lots of material including what we did in New York and we're very happy to share with what worked for us and what didn't work too.

Response actions are already underway in New York City and did help to reduce the damages from hurricane Sandy.

We recommend a portfolio approach of adaptation to have climate risk management occur in operations in management on a day to day basis, infrastructure plan on the longer term and then addressing policy issues in terms of beginning to still include increase in climate risks into standards and regulations.

And then finally, to not to forget the mitigation part of climate change, that really to create robust and resilient communities, we need to do both, adapting to the current climate exchange, preparing for those increasing climate risks but also interactively mitigating as well with reduction of greenhouse gasses so that the ultimate level and rate of change and magnitude of the risks are minimized through mitigation.

So that's on the New York City side.

Slide 12: Key Message

I just want to just give a – Emma asked me to just end with saying that what we found in New York and Seattle and some of the other cities around the country have been first responders. We are finding these all over the world that cities are emerging as first responders to climate change both on the mitigation side and the adaption side.

This slide is showing the planned cuts in greenhouse gas emissions for cities around the globe that they have voluntarily – with ICLEI and other groups agreed to set targets and time tables among themselves. So that's a very exciting finding that these communities, state and local levels, are really an important level of governance for the actual pragmatic responses. And they are emerging as adaptive – as first responders in adaptation as well.

Slide 13: Urban Climate Change Research Network

And the final content slide is that what we've done on the research side is create, with researches from cities all over the world, a lot in U.S. but a lot elsewhere as well, an Urban Climate Change Research Network so that we are creating a foundation knowledge and assessment process similar to the IPCC and the National Climate Assessment, but for cities around the world. And we're working on the second one right now and we are – we will be hoping to share that – the knowledge that comes from that, seeing what other cities are doing not only in the United States but up from cities around the world.

Slide 14: References and Links

And with that, the next slide is the references and the links and it was great to be able to share the New York's experience and some experiences from cities around the world with you today.

Thank you.

Emma Zinsmeister: Thank you, Cynthia.

The New York example is a great illustration of the opportunity for framing adaptation issue around preparedness, as Cara highlighted and the connections that you made between mitigation and adaptation are really excellent and thank you for sharing this with us.

Poll Question #3

Emma Zinsmeister: So before we move in to our next presentation, we have one more poll question for you.

Which of the following factors is the primary motivation for your community or organization to pursue adaptation?

So if you could just take a moment and let us know what motivators are important to you.

All right, if we can pull up the results?

All right, and I think we may have expected these results but currently experiencing the impacts of climate change has come across as one of the strongest motivators for adaptation efforts, and I think you'll hear from the speakers that we have online today that that is really what resonates with folks and communities across the country and can really build stakeholder support. And being a leader among our peer entities is also in second place, which I think is also very important as you heard Cynthia emphasize that cities are really emerging as leaders on the forefront of adaptation and so, that's something I think that's reflected in these results.

So thank you for you responses.

Climate Solutions University: Forests and Water Strategies

Slide 1: Introduction Slide

Emma Zinsmeister: We'll next move into our presentation by Gwen Griffith and Nancy Gilliam on the Climate Solutions University.

Gwen Griffith is a Program Director with the Cumberland River Compact, a regional nonprofit watershed organization serving Kentucky and Tennessee. She works with Nancy Gilliam as co-founder of the Climate Solutions University Program and now serves as the Curriculum Director for the program. Gwen holds a Doctor of Veterinary Medicine degree and a Masters Degree in Large Animal Medicine. She has 20 years additional training and experience in ecosystem health, environmental policy, science communication and including an AAAS Fellowship position with the US environmental – the US Senate Environment Committee and the US Agency for International Development.

Her co-presenter today, Nancy Gilliam, initiated the Model Forest Policy Program in 2000. She's been the Executive Director of that program since then. She holds a Masters Degree in Counseling and a PhD in Psychology and brings over 30 years experience in organizational development. She's led the community planning climate planning effort in Bonner County, Idaho and she is the co-founder with Gwen of the Climate Solutions University.

So I turn it over to Nancy and Gwen.

Gwen Griffith: Thank you very much. I'm Gwen Griffith with the Cumberland River Compact.

Nancy Gilliam: And hi, I'm Nancy Gilliam with the Model Forest Policy Program and we certainly appreciate this opportunity.

Gwen Griffith: We do.

Nancy and I are very appreciative of the opportunity to share with you information about our stakeholder buy-in activities related to Climate Solutions University.

This program was founded through a partnership between the Model Forest Policy Program and the Cumberland River Compact to address the urgent need for climate resilience around forest and water resources and the need for addressing multiple communities at one time because of the escalating impacts of climate that we are experiencing.

Slide 2: Climate Solutions University: What We Do – Climate Resilience

The Climate Solutions University today is a multiyear distance learning program that generates climate resilience for forest water and economics. We – in year one, we worked with four to six communities as a group and take them through a planning process starting with team engagement and then a climate risk assessment process followed by adaptation planning. And then in year

two to five, we offer an implementation support program for Climate Solutions University communities that have developed plans with us and also for other communities that have adaptation plans developed through other mechanisms. To date, we've worked with 24 communities across the country and including one in Alaska and our presentation today is going to draw from the experiences of those communities that we've been working with since 2008.

Slide 3: Factors for Achieving Buy-In

This is a high level list of some of the factors that we've identified as being effective and helping achieve stakeholder buy-in.

Seeking stakeholder input enthusiastically is really important, going beyond regulatory compliance to really engage at multiple levels and that goes along with integrating with existing processes and taking advantage of cooperative efforts with the nonprofit and government sectors working together. And then it has been mentioned before, really focusing on contemporary impacts and local stories really helps motivate action and then finally, bypassing resistance and participating in a support network so you're not reinventing the wheel is also important.

Nancy?

Nancy Gilliam: And I'm going to talk to you at the end a little bit about what we've learned the hard way about the tips below that we'd suggest you avoid.

Gwen Griffith: So we're going to illustrate these factors with a couple of quick case studies in the brief 10 minutes that we'll be speaking with you today.

Slide 4: Bonner County, ID 2008

We're going to start with Bonner County, Idaho which was our first pilot community where we tested our process and it happens to be home-base for Nancy. So she's going to talk a little bit about this case study.

Nancy Gilliam: Thanks Gwen.

So Bonner County is in Northern Idaho and we were asked to test how do you prepare for climate change, that document that Emma had, and really see what does it take to put that planning process on the ground using water and forest as the focus.

And where I live, it's rural, it's near Sandpoint, Idaho up towards British Columbia, heavily forested with a real strong tourism economy. And the climate risks that we found pertained to invasive species into Lake Pend Oreille, that was milfoil; we were seeing more floods; our forests declined; snowpacks were certainly declining; and we had very weak riparian zones.

Slide 5: Bonner County, ID 2008

We found then two windows of opportunities that our nonprofit took advantage of.

First, we saw that the county was reviving its land use codes and so we joined the citizens' subcommittee to participate in giving the climate input into that process.

The second window was that it was a presidential election year and we chose to put on a climate candidates forum.

In using that approach, we maximized that buy-in locally by having a really close partnership with the local government. So it was an NGO and local government partnership doing this work together. And finally, we took advantage of the stakeholder group that we put together. We used their talents. We had some that wanted to do strictly climate education, others wanted to work on climate policy, and we had a third research group that helps get the data together for us.

Slide 6: Bonner County, ID 2008

The result of that is that we found the county commissioner as a champion and he helped us really navigate that political process. Through that, we were, through the land use code revision process, we were able to really strengthen that riparian protection. We were also able to build public and government support via that climate candidates forum and then we were able to highlight some pretty scary extreme temperature data that was going to, is, and was affecting our fishing economy and particularly endangered species.

So, Gwen?

Gwen Griffith: Thanks, Nancy.

Slide 7: Cookeville, TN 2009

So I'm going to share a brief case study from Cookeville, Tennessee which happens to be in my area in the middle Tennessee region which served as our Southeast pilot community.

This is a beautiful community, small, about 30,000 population on the Cumberland plateau region and this was led by Will Paddock. Working for the Model Forest Policy Program, he led the Stewardship Project.

Will's background is an MBA so he took a risk management approach in sort of a business orientation to interacting with the community, providing educational forums and working with the local leadership towards climate adaptation planning.

Slide 8: Cookeville, TN 2009

The timing was good and that it was linked to the comprehensive planning process that the City of Cookeville was going through at that time, and the climate risk findings were very helpful in forming that process.

Some of the major risks that were identified were related to extreme weather events, floods in particular, as well as storm events. Health impacts from heat waves and from waterborne illnesses and then finally and significantly, one of the risk factors they've identified was this population growth predicted from climate migration as more and more people move in-land from the coastal regions over the next few decades.

So Will talked about this as an opportunity for Cookeville to position itself as a sustainable community by taking very progressive growth management actions, and the mayor of Cookeville at that time saw this as an opportunity as well and became a local champion and even launched his own Keep Cookeville Cool campaign about the same time as this planning was going on. So the winner and loser came up saying that Cookeville can be a winner with proactive planning at least in the short term.

Slide 9: Cookeville, TN 2009

And so, the final results of this case study were that the planning commission put together strong climate provisions in their new comprehensive plan and they were the first in Tennessee to do so.

The economic message really appealed to planners and elected officials and they became local credible messengers for support of the plan.

Slide 10: Summary: Factors for Achieving Buy-In

So summarizing these factors for achieving buy-in that have – we've learned from these two case studies and the many other communities we've worked with, that early and sustained engagement and input is important in a variety of forms, getting the stakeholder involvement to their interest and priorities and working in a cooperative fashion, utilizing windows of opportunity and focusing on local information impacts and benefits, and create local champions and really move towards taking actions.

Slide 11: Framing for Stakeholder Buy-In

In framing the issue as we've heard before, our findings really support and amplify what you've already heard about framing the issues that the risk management approach can be very effective as well as economic conditions such as cost avoidance or economic development benefit.

Nancy?

Slide 12: Pitfalls to Avoid Gleaned from 24 Communities

Nancy Gilliam: So I want to close with the stuff not to do that we learn the hard way.

So what we'd recommend is don't try to do a plan by yourself. Really do it collaboratively with as many stakeholders as possible.

Don't make that plan dependent on one single leader because if that person leaves, then the whole planning process is vulnerable.

Reduce your technical jargon people glaze over.

Avoid relying on global or national data.

Really, it's important to have local pictures and examples.

And we just think it's best to walk around resistance denial. Avoid it. It's just a waste of time.

Slide 13: Final Slide

So finally in conclusion, we only have a second to really go over just a fraction of what the communities have been teaching us. So we created a web link there, www.mstp.org/epa1html and that's to you, listeners on this, to give you more examples of successful buy-in strategies and honestly some information on the fact that we have a 2014 application process open now for large and small communities.

So we look forward to hearing from you. Please feel free to call me if you have any questions.

Thank you so much for this opportunity.

Gwen Griffith: Thank you very much.

Emma Zinsmeister: All right. Thank you Gwen and Nancy.

We really appreciate your presentation in highlighting the lessons learned from your experience with the Climate Solutions University. You've highlighted a lot of the themes that we've been talking about today about looking at things from a local perspective and the issues of preparedness and so, I think that really resonates.

Poll Question #4

Emma Zinsmeister: So to move on to our next poll question, the question is how does your community or organization communicate risk to the public?

So if everyone could just take a couple of seconds to indicate for us what strategies you're using in your outreach.

All right, if we could go ahead and pull up the results.

All right. So some of the most common needs are to develop a more robust method of outreach and communication and hopefully some of the strategies that we've talked about today will be helpful in that process.

Other things in terms of – it looks like pretty much an even split across our other categories. People are utilizing public announcements through TV, radio and other media public meetings and of course, some social media is also arising opportunity as well.

Achieving Buy-In for Adaptation

Slide 1: Introduction Slide

Emma Zinsmeister: So with that, we're going to go into our last case study presentation.

Jonathan Lockman is the Founding Partner and Vice President for Environmental Planning at Catalysis Adaptation Partners which is located in Scarborough, Maine.

CAP provides sea level and storm surge adaptation planning services to agencies and municipalities focusing on benefit cost analysis of solutions using the COAST tool that J.T. will be talking about today.

Prior to joining CAP, J.T. served as a planning director for the town's Bar Harbor in Wells, Maine and is a Planning Director of the Southern Maine Regional Planning Commission. He's been active at the national level of the American Planning Association. He was recently appointed to a panel at the National Academy of Science's Transportation Research Board supervising research on extreme weather events and their effects on state Departments of Transportation.

J.T. received a BS in Science and Environmental Education from Cornell and earned a Masters in Regional Planning from the University of North Carolina at Chapel Hill. He's been regularly featured at national conferences speaking about the newest techniques for citizen engagement and benefit cost analysis and sea level and storm surge adaptation planning.

So with that, I'll turn it over to you J.T.

Jonathan Lockman: OK. Can everybody hear me?

Emma Zinsmeister: Yes, we can hear you.

Wendy Jaglom: Can you see the pop-up box on your screen?

Jonathan Lockman: I have not yet.

Wendy Jaglom: You should have it there. Did you click on the GoToWebinar icon?

Jonathan Lockman: Nothing's happening. I have a dialog box.

Wendy Jaglom: Yes. So if you have the dialog box, select (Green Clean) from the drop down.

Jonathan Lockman: No, I don't have that particular dialog box, excuse me. I have the tool bars.

Wendy Jaglom: Let me try just giving you control one more time and if this doesn't work, I can take the controls.

Jonathan Lockman: OK, I've got it.

Wendy Jaglom: Perfect.

Jonathan Lockman: How are we doing?

Emma Zinsmeister: That looks great. If you can just put it in full screen mode, we're ready to go.

Jonathan Lockman: OK. I'm J.T. Lockman and thank you very much for letting me be the closer today in the final ten minutes of presentations, and I'll jump right in since I know we're probably tight on time.

Slide 2: What is "COAST"?

The COAST tool is what I'm going to talk about that our firm uses to promote sea level and storm surge adaptation planning and it stands for Coastal Adaptation to Sea Level rise Tool, and the first thing we do when a community invites us in is we work with the stakeholder group that wants to figure out their vulnerabilities and determine strategies.

Slide 3: Steps in the COAST Process

We ask them to participate in selecting scenarios for sea level rise and storm surge themselves and that's really the very first part of buy-in and like others have said today, we'd like to use local data on sea level rise and on storm surges rather than national or international data because local data connects with people's experiences.

Slide 4: Sea Level, Portland, Maine

This is an example of the Portland tide gauge.

People really trust that their tide gauge in their own town really works and they've experienced it over the years and they've – the older people have noticed the tides higher than they used to be.

Slide 5: Steps in the COAST Process

Now the next thing we do is we provide the community with a vulnerability assessment where we calculate the cumulative expected dollar damages over time for a scenario if they take no action, and I'd like to show you today a work that we've just been doing over the last several weeks in Kingston, New York.

Slide 6: Hudson River, Kingston, NY

Kingston is a town on the Hudson River about halfway up the river to Albany from New York City and it is not a community that thought of itself as being worried about hurricanes. But

Hurricane Irene and Sandy flooded the community 14 months apart. So they have no problem understanding that they are vulnerable, they are believers in – that the climate is changing and that they are experiencing something that is different than what's ever happened before in that area.

Slide 7: Select an Asset to Model: Damage to Real Estate

This is a picture of the downtown waterfront on Rondout Creek which is in the arm of the Hudson River flooding their lovely town of 30,000 people.

Slide 8: You Need Accurate Elevation Data: LiDAR

The first thing we have to do to run the model is input our LiDAR data that is very accurate elevation data taken from laser-ranging measurements from an airplane, then we layer on top of that the – in this case, they wanted us to look at damages to real estates.

Slide 9: To Predict Future Damage to Real Estate You Need a Tax Parcel Map with Assessed Values

We laid on top of that the tax parcel layer with the tax assessment data from the community.

Slide 10: Depth-Damage Function

Then we put into the model a depth damage function that we get from the Army Corps of Engineers and what that's about is the army, through its statistical analysis of floods in the past, they can tell how much the – how much damage, dollar damage will happen to a particular building with a particular amount of water flooding it.

Slide 11: Flood Insurance Study

And then we input into the model the possibility of storm surges and the – typically, we – in this case, we use the flood insurance study and we put in a 10-year, 25-year, 50-year, to 100-year storm.

Slide 12: Projection of Sea Level Rise from 1990 to 2100

And then we added levels of sea level rise to it that the community selected that they wanted us to model. That is very important for buy-ins.

Slide 13: COAST Model Results

We did not want to come to the community and tell them, "You've got to plan for two feet by 2050 or three feet by 2100," and then argue about. Instead, we asked them to select the levels. Then if we put that altogether and run the model, the – it will tell you the amount of dollar damage predicted for a particular sized storm in a particular year and more importantly, the

model can calculate the cumulative expected damages summed up from all of the predicted storms starting today until the year that's modeled.

Slide 14: COAST Model for City of Kingston

And this is a very busy slide and I won't be able to have time to go over it but what it shows are the results of the vulnerability assessment for Kingston, New York and on the left, you can see different years, 2013 which is the present, 2060 and 2100. Then the community selected different scenarios of sea level rise. They asked us to model 20 inches of sea level rise by 2060, 36 inches of sea level rise by 3060, 33 inches of sea level rise by 2100 or 68 inches of sea level rise by 2100 and what we came up with is this column which is the sixth column, the expected damaged to the value of all buildings and improvements from the single storm of either a 10-year or 100-year storm with that sea level rise. Then we found out that the sewage treatment plant really was the most expensive thing that was vulnerable and we put a separate column for it because it was so costly.

And then on the column second from the right, we have the cumulative expected damage from all storms that occur up to the year 2060 and all storms that occur up to 2100 and just with the inputs of their local tax data.

Slide 15: A Close-up Look at the COAST Model Output

And here's how that looks. And when you get to a site-specific analysis, you get tremendous buy-in and conversations really get started.

Slide 16: West Strand Street/ Rondout Landing Area COAST Output

The model puts out in Google Earth format extruded bars that show the predicted dollar damaged at each particular lot, and the relative height of the blue boxes show the predicted dollar damages to buildings and improvements on that lot from the flood height of the scenario, and then the red extruded blocks show the predicted dollar damages due to the sea level rise component of the flood in that scenario.

Slide 17: Untitled

Now this is an area in downtown Kingston. It's the JAF Partners Building at Number One Broadway and here we have scenario six which was a for a hundred-year storm in the year 2060 with a high sea level rise prediction. That means we predict that the Hudson would go up to 11.2 feet at that event, with both the hundred-year storm surge and sea level rise added to it.

Slide 18: Untitled

And the model showed that that particular building has a depth of 2.2 feet of flooding if the river gets that high with damage of $158,000. Now once we produced this model for the community, in any one of these ten scenarios, we can give out these KML files to the public, they can take them home, load them on Google Earth and fly around the community and look at their

properties, their neighbors' properties and look at depths and damage dollar amounts for any site that could be flooded in the future. And they can see the difference between what happens if there's two feet of water or four feet of water.

Slide 19: Damage to Assets Other than Real Estate Can be Modeled

Now COAST can be used to look at other assets other than real state and these are some of them. One of the other ones we've done for our climate - for our clients is economic output.

Slide 20: Next Steps in the COAST Process

Now the next step in the COAST process is we can look at adaptation actions to protect from sea level rise and storm surge and then run the model again and see how much money would be saved in avoided damages and do a cost benefit analysis.

Slide 21: Example: Groton/Mystic, Connecticut

Now the next slides I'll show you, we did this adaptation testing in Groton, Mystic, Connecticut. We haven't done it in Kingston yet so I can't show it there.

Slide 22: Hurricane Barrier

And what this community asked us to do is test whether constructing a hurricane barrier at the entrance to the harbor and adjusting the elevation of railroad tracks, how that would help avoid real state damage in different scenarios. And once again, I can't go over the slide right now but we did a cost benefit analysis looking at the costs of the engineering options they wanted tested as well as the avoided real state damage.

Slide 23: Results

Now the model is a simplification and more study would be needed to do any of these adaptation strategies. However, in terms of achieving buy-ins to do adaptation and to raise appropriations for design and engineering of an expensive adaptation, we feel that our tool is very useful.

Slide 24: Last Step in the COAST Process.

And of course the last step in the costs process, start doing something to implement these strategies and move the needle of zero.

Slide 25: Contact Information

And if you want more information or see some reports on the tool's output, please visit our Website.

Thank you.

Emma Zinsmeister: Thank you J.T. I think the COAST tool has been excellent illustration of the impact that localized information can really have on people's perception and consciousness of the need for the adaptation and the climate change issue.

So I think that's a really great note for us to end on with our presentations today.

So thank for that, and I encourage folks to reach out to J.T. if they have questions about the tool or any of the details of the presentation.

Poll Question #5

Emma Zinsmeister: So with that, we're going to go into our very last poll question before we jump into the panel discussion.

So after listening to our speakers today, how do you intent to increase buy-in for adaptation within your community or organization?

So if you could take a minute to indicate which of the strategies do you think you're most likely to try and pursue, we've appreciate hearing them.

All right, if you want to pull up the results?

Great. So it looks like the most popular opportunity among our participants today is develop a more robust understanding of local impacts and a number of the resources that have been listed in the speakers' presentations as well as the introduction that I gave can point you to some great sources of data.

Cynthia mentioned several times the National Climate Assessment and there's a link to that in my slide and probably hers as well. So please do check out those resources.

And then tap local values and align messaging is also a strong option for folks and I think we've heard again and again through the case studies that that really is a way to resonate with folks.

Panel Discussion

Emma Zinsmeister: So with that, we're going to move into our panel discussion. We're going to abbreviate it slightly so that have we have time to take a few audience questions.

We're going to do just two questions for the panelists today and I'm going to turn it over to Dana Spindler from ICF who's going to facilitate that for us.

Thank you.

Dana Spindler: Thanks, Emma and thanks for all the speakers for participating today.

The first panel question that we have is given the uncertainty about future climates and how that's frequently presented as a challenge, that is a barrier for taking actions, the plan for climate change, what tactics have you used to overcome the uncertainty barrier to climate change? Are there examples of more – in more and more traditional practice such as economic uncertainties that might offer lessons for planning for future climate in the face of uncertainty. I'm hoping Cara maybe you can kick us off with an answer.

Cara Pike: Sure. Sure. Thank you.

Well, I think that there's quite a lot in military language, not that all of it can be adapted exactly as it's used in that setting but there's a lot there around, you know, planning based on trend lines and importance of actually not waiting for a hundred percent conclusive evidence because often times then it's just quite simply too late to take the action that you might like to see.

So that's definitely an area. We've looked to also insurance. You know, just spending time looking at how insurance is marketed I think is really important because it's actually topping that uncertainty as a reason to act and take precaution.

The other thing, though, that used to be quite a lot are groups really focusing heavily on the benefit side rather than really emphasizing the uncertainties that are still there and really focusing on addressing needs that they know people have in the local communities. So for example in Los Angeles there's a whole effort to focus on cool roof then moving into cool playground and really making the Los Angeles Basin much more livable in the face of climate impact.

So it's taking existing realities that people already are experiencing and focusing there on the place to start.

So I think there's actually a lot of opportunity and then as I said, you know, earlier in my presentation, so to also just recognize that there's an emotional component of uncertainty and none of us really like to spend that much time thinking about all of the kind of horrible things that might happen to ourselves and our family instead of just, you know, tread carefully and a lot

of what that involves is not sort of telling people what the impacts to them are, but rather exploring that in peer groups as was mentioned by the Climate Solutions University speakers.

Dana Spindler: Thank you.

Cynthia, do you have a response to those questions as well?

Cynthia Rosenzweig: Yes.

I think first of all defining the current climate risks of major hazards for each region in discussion as we've heard over and over again, and then I think – and then from those current risks, then providing information on what the - on how those main risks, first of all, may be changing now because, for example, in the most regions of the country over the past 30 years, intense and heavy downpours are already increasing. So I think moving from identifying first the key hazards in each region and then looking at how those are changing now and then that then is the time – appropriate time to bring in the information about how those climate risks may change in the future.

And I think what we found is just the – to be also upfront. Be very clear. We don't know for sure if it's going to rain next Wednesday and as we present the risks in the future, there are – there's always – we always give a range because we don't know exactly what the greenhouse gas emissions in two decades will be and we also – we don't know exactly how the climate system will respond.

So being upfront, very clear but still present a range but also – but I think be sure to include that information.

Dana Spindler: Thank you.

The next question will be directed towards Nancy and Gwen and J.T., Jonathan.

And we've spent the last hour talking about how to achieve buy-in for adaptation, and this is a very proactive approach. But often times, people are working – working on adaptation, they face an uphill battle to overcome political or economic opposition. How have you been successful in overcoming that opposition and if you choose to bypass the opposition and denial, do you have any suggested methods for that or recommendations to how to deal with climate deniers that show up to stakeholder meetings and such?

Gwen and Nancy?

Nancy Gilliam: Gwen, I'll go ahead.

This is Nancy. So we definitely have this issue on some of our rural communities and the political opposition can be very well scripted. In many cases, we hear almost the same script in different parts of the country from the deniers.

So, for example, we have a Colorado community that just finished its plan and needed to deal with local government officials and private landowners but the denying factor was so strong they had to completely shift tactics and move towards the agencies that were really willing to talk about climate change.

So I just – we just don't think it's worth it to come up against that opposition but find the partners that do want to work together and just don't use the word climate change. That's working for us.

Dana Spindler: Thanks.

I think we're – we have just a few minutes left.

So J.T., if you have a response to those as well?

Jonathan Lockman: Well, in situations like that, I found using an analogy about fighting burglaries is a good one.

If you were hit by repeated break-ins at your business or at your home, you'd immediately want to spend some money to get better locks on your doors or you know, buy a burglar alarm, get a guard, you know, whatever and you would be willing to spend some money. However, you really might not know why people are robbing you. In fact, there are many reasons why crime could be happening in your neighborhood. It could be lack of mental health services, it could be unemployment, it could be lack of youth opportunities and you don't – if you took a position that you would spend nothing to protect your property from crime until someone could prove to you a hundred percent why it was happening, that sort of ridiculous.

There are many reasons for crime, and what we say is that there are people out there that are carrying on the dates about climate change but we do not need to engage in that here. We're talking about protecting this community and we believe that that's important. And we can't wait for these national and international debates to be settled before we take action.

So I get a lot of head nods when I use that analogy in public.

Dana Spindler: Thank you.

So we're giving head nods on the phone as well.

Questions and Answers

Dana Spindler: So we just have a few minutes left and we've received lots of questions.

We're going to try and do a little rapid fire and answer at least a couple of them.

The first one is for Cynthia with the question, "Was the City Health Department included in the task force in New York City and if not, what was the reason?"

Cynthia Rosenzweig: The answer is yes, actually, and it should be on there. They did. They came to every meeting, and we should add it onto that slide.

And they have been very active in preparing in particular heat advisories and especially working on the heat stress that we have now with our current climate and it's projected to increase in the future.

Dana Spindler: Thank you.

Cynthia Rosenzweig: Oh, let me just add one final thought on that which is that I think also that the health departments in the communities are also a very, very—often a very key, good— place to engage with and that's because, again, that's a direct link to the community, and people do care about their health.

Dana Spindler: Thanks.

And for Gwen and Nancy, do you have any recommendations on how to identify and activate local community champions?

Gwen Griffith: Hi, this is Gwen.

It really – what we've learned is – and I think this is not a revelation, but it really boils down to relationships and building relationships of trust across networks with sharing good information and providing a non-confrontational approach to adaptation planning and implementation.

So a lot of it is that personal interaction and really listening, hearing what are other people's priorities. For example, in Cookeville, it was listening and understanding the mayor and the administration and understanding their desire for really positioning the community as being attractive to development and growth. Understanding that by listening helped provide a way for them to step up and be proactive in that way, which has served the community very well.

Dana Spindler: Thank you.

And for J.T., the COAST model is based on the sea level rise projection or prediction and how – with their analysis, is there a way that that could apply to a community that is not affected by sea level rise, say, in Ohio or lessons that you've learned that you would apply to such a city?

Jonathan Lockman: Well, the model works by taking an asset and compromising it to a certain height.

So if you had an area with heavy rainfall incidents that had been flooding, you could use the model to look at potential damage from storms and if you had some data or predictions on the increasing frequency of 10-inch rains in the area, and then if you did some storm water improvements or drainage improvements, you could lessen that.

The model could be used to look at rainfall events. So I mean right now, the most obvious use of the model is in adapting to sea level rise and storm surge but it's been interesting that, you know, that particularly with Kingston, a community that was almost 80 miles north of New York City, that even there, they're getting a hurricane damage enough to bring us in to work on this issue.

Dana Spindler: Great. Thank you.

Cynthia Rosenzweig: Can I just add to that?

I do think that it's really important that we don't ignore the potential for inland flooding from these intense events. This is happening already more frequently. This is documented. And so inland, there are still flooding issues that this kind of analysis can and should be carried out.

Dana Spindler: Great. Thank you.

So we're hitting 11:30, the end of our time now and there are many more questions. We will send those out to participants. We'll get responses from the speakers and send those out to participants and I'm going to hand it over to Emma from the EPA to close the session.

Thank you.

Emma Zinsmeister: All right. Well, thank you Dana and thank you Wendy for helping facilitate today, and thank you to all of our speakers for all the presentations.

We greatly appreciate you sharing your time and your expertise with us and I think you hit on many key points and themes that we will hope to build upon in our next Webcast.

As we mentioned previously, in April we'll be covering the topic of uncertainty in decision making in more detail and then lastly, in May we'll get to the topic of funding and building financial strategies for adaptation.

So we hope folks will sign up for the newsletter and get those updates on registration when they are available.

So thank you again to our speakers and we will make all of the files and recording and unanswered questions available on our Website after the call. So please check out that as well.

And thank you to all the participants today for sharing your insights with the poll questions, and I encourage everyone to, as they close out today, fill out the optional feedback. That is certainly how we develop series like this and other resources, and your information is really valuable for us to be able to develop resources to meet your needs.

So thanks again, and I encourage folks to participate in our subsequent Webcast. And with that, I think we will close out for today. So thank you.

Operator: This concludes today's conference. You may now disconnect.

END