

# **NDRC: Climate Adaptation Planning Webinar Transcript Thursday, November 20, 2014 3:00-4:30pm EST**

Kathy Kaminski: Good afternoon, everybody, and thank you for joining us for this Climate Adaptation Planning Webinar. My name is Kathy Kaminski. I am with TDA, a technical assistance provider for HUD. I will be serving as the host today. I am going to run through some technical instructions on how to ask questions and things like that before I hand it off to our wonderful presenters.

Please turn off your cell phones and close the e-mail, and all other programs on your computer, and give your undivided attention to our presenters today. If you have any technical problems, you can call my colleague George Martin at the telephone number on the screen. Or, you can send a chat message to the host. That will come directly to me. I can help you through any issues that you might be having.

Everybody is going to be muted during the call. Questions can be asked in two ways. You can, and the easiest way is to ask a written question using the Q&A tool. But you can also ask a verbal question via the conference call. You do not need to wait until we stop for questions to ask great questions. You can ask them at any point during the presentation. The panelists will collect those and answer them when we stop for questions.

You are going to use the Q&A tool to ask questions. There is and you can see a screenshot of what it looks like up on the screen. It will be on the right-hand side. If you do not see it, you – there might be a triangle next to it. If you click that triangle, it would expand the box. Please ask questions to all panelists. Then just type your question in the box and click send. Again those – you can do that at any point during the presentation.

You can also ask questions verbally. There is one step that you need to do in order to do that. You will need to connect your phone to your online login in WebEx. If you take a look at the participant panel, you will see your name under the attendees. If there is a phone icon next to your name like there is on my slides here, then you are all set. If there is not a phone icon next to your name, you need to look on the event info tab. I am going to switch you over to that. You should see the event info tab. Midway down the page, there is an identify code. It says town and then a number, and then pound. You can put that in your telephone keypad at any time. If you want to ask a question verbally, you are going to have to make sure that you are all connected out. Because that is how I will unmute you.

But again, you can do that at any point during the presentation. You can put that identify code in your telephone keypad. It will connect your phone and your online login. Then when you are ready to ask a question, when we pause, there is a hand icon on the lower right-hand corner of the participant panel. Under your name, towards the right, you will see a little hand icon. If you click that, it will – you will virtually raise your hand. We will take questions as – in the order that they are received. They will unmute. We will ask you to ask you question at that point.

All the questions whether written or asked verbally will be answered verbally. We may not be able to get to all questions, but we will try to answer common questions first. Just a reminder, this is not a general NOFA Q&A. We will keep the questions to the topic today. Please send additional unanswered and private questions to the e-mail address on the screen. That is [resilientrecovery@hud.gov](mailto:resilientrecovery@hud.gov). With that, I am going to hand it off to Lynsey Johnson with HUD.

Lynsey Johnson: Great, thanks so much Kathy. Good afternoon, everyone and thanks so much for joining us for this Climate Adaptation Planning webinar. This is the really the third in a series of nine topical webinars running concurrently with the National Disaster Resiliency Competition phase one. This is really an opportunity to learn about the nine key components of climate resiliency planning and project development. Like I said, this is the third that we have had in this series.

The first two were on citizen participation and equity, and equitable outcomes. Those two webinars are currently archived on our website at the HUD Exchange. This one will also be archived for your future reference at the HUD Exchange webinar website that we can talk about a little later on. As Kathy mentioned, this is a topical webinar that will have been – and will be....

We will not be taking any National Disaster Resiliency Competition questions. If you have any NDRC questions specific to the NOFA, please e-mail them to [resilientrecovery@hud.gov](mailto:resilientrecovery@hud.gov). Then additionally, this is really an opportunity and a tool for you guys in developing as you are working on the phase one applications. We are giving you some suggestions and tips for the general resiliency planning process.

Today, we are very fortunate to have four presenters with us from both the private and public sector. First, we have Brian Holland from ICLEI. Brian is the Director of Climate Programs, and oversees the development of ICLEI's climate mitigation and climate adaptation programs and partnerships. Brian's work at ICLEI has addressed a broad spectrum of climate concerns with a particular emphasis on carbon markets, sea level rise adaptation, and local hazard mitigation.

We also have Jessica Grannis from Georgetown Climate Center joining us. Jessica is the program manager for the Georgetown Climate Center, and is also a staff attorney and adjunct professor with the Harrison Institute at Georgetown University Law Center. She supervises students at GCC – and GCC staff who work directly with state and local government officials on projects to help them adapt to climate change.

We are also joined by Megan Susman, who is a Senior Policy Analyst in EPA's Offices of Sustainable Communities. She works on Smart growth research, communications, and technical assistance on various topics, including climate change mitigation and adaptation.

Finally, we have Karen Helbrecht joining us from FEMA. Karen has worked at FEMA since 1988, and has been involved in mitigation planning for many years. She is the primary author of the Hazard Mitigation Planning and Regulations; and has worked on many policy issues regarding the development review and approval of mitigation plans. I had the privilege of working with her while I was with the State of Wisconsin. We are very fortunate and very thrilled to have all four of these presenters with us today. They are going to go through a very comprehensive presentation today for you guys.

We are going to go over the climate adaptation planning overview process. Jessica is going to talk a little bit about state and local best practices that she has encountered. Megan will talk a little bit about sustainable communities and climate adaptation planning. Karen will follow up with hazard mitigation plans and how to look to incorporate mitigation plan and climate resiliency planning into one process. At the end, we will answer questions.

We will first answer questions that come through the chat function and the Q&A function through written responses. Then we will turn it over to the following. We will just hold on that at the very end. With that, I am going to turn it over to Brian who will talk a little bit and give us an overview of the climate adaptation process – planning process.

Brian Holland: Okay, good and thanks a lot. It is great to be on the line with all of you. I am going to go through some concepts related to climate adaptation. We are taking events as adaptation 101. Forgive me if the – a little basic. But I want to make sure that we are really starting in at the beginning here. I am the Director of climate programs for ICLEI USA. Just a little bit about us so you kind of understand our perspective. We are a nonprofit organization and membership association of local governments in the U.S. that are committed to sustainability progress on climate and resilience.

We have got about 1,000 members worldwide and about 300 in the U.S. We started hearing back in 2007 or so a need for more resources on climate adaptation. Historically we had only worked on the emission side of things. But I think people were starting to see the impact and starting to see that this was hitting home. We have put together a group of experts, researchers, and stakeholders and created an adaptation program. Right now, that consists of a variety of guidebooks, case studies, a software tool, and kind of a management tool, and a number of pilot projects.

We also run a leadership commitment campaign called Resilient Communities for America that gives council members, and mayors, and county supervisors the opportunity to make a commitment to building more resilient communities. ICLEI stands for – I see a question in the box here. It is the International Council on Local and Environmental Initiatives. We have been around in the U.S. for about 20 years and governed by a Board of Directors of local governments, mayors, and others. Why are we talking about this issue? I think it is pretty clear that climate change has become a public and very prominent public topic and one that cities and counties recognize they need to be responding to.

There is quite a bit of data on the damage that has been done over the past few years from natural hazards to – as well as manmade disasters. Increasingly, a recognition that climate change is driving these types of events. The science is pretty clear on this. You see here, the intergovernmental panel of on climate change. It expresses high confidence that climate change is increasing systemic risks due to extreme weather events that will lead to a breakdown in infrastructure network, and critical services. We see some of this already. It is only expected to intensify.

A lot of focus on separation now; recognizing that and preparing for these types of impacts in advance before they occur. It is ultimately going to be a more cost effective strategy than just, really just being reactive. That is what – that is what climate adaptation is all about. Again every region of the United States is feeling these impacts in one-way or another. The National Climate Assessment that came out earlier this year documented those in great detail.

But just a few examples; California is experiencing one of the worst droughts on record. Last year it had its driest year on record. Colorado, by having its most destructive wildfires in the state history and kind of record breaking flooding. This is the kind of thing that we expect to see more of from climate change, essentially more extreme ends of the spectrum. Whether it is extreme cold, or extreme hot, drought, or storminess. It really depends on what region you are located in. Before I move on, I had wanted to point out. I think a lot of the focus today will be on extreme weather. That is certainly one outcome of climate change.

There is another element to adaptation of adapting to long-term trends that might not be quite as visible to us. Things like changes in the growing regions for certain crops or changes in habitat that shift northwards or at the higher elevations as the country warms. Those are an important of adaptation. I think probably you will hear a lot about extreme weather today appropriately; but just to note that. What is climate adaptation or climate preparedness? Related to any action that reduces vulnerability to the actual or projected effects of climate change. It is related to also this concept of resilience; which we think of as the ability to bounce back from disruptions in a sustainable way. A way that maintains a good of quality of life for all. Resilience here may, and it is a quality that goes beyond just preparing for climate change and thinking about other types of hazards, and other types of disruption, be they energy, or economic. But really building communities that are stronger and able to bounce back and emerge really in a better state after disruption.

Climate adaptation is kind of a piece of resilience in that way. Just to start, there are a lot of frameworks out there for adaptation. We had ICLEI as one of our own. It is very similar to pretty much all of the rest of them that are out there. We call ours the Five Milestones of climate preparedness. It is really kind of an iterative planning process. Many of you will recognize this as it applies to other issues. But we recommend getting started by really trying to understand the nature of the problem.

That is where the vulnerability assessment and a risk assessment is all about. It is really trying to understand what we are dealing with here. Moving to Milestone two, as a community setting some goals for becoming more resilient. Then Milestone three, developing a preparedness plan that contains the policies of the programs that will move you towards those goals. Finally, implementing that plan through regulations or new programs.

Over time, monitoring your progress and updating as you go. It is an iterative process more so even than other sectors. It is important that this be an iterative process. Then we see how we are doing because the science is always evolving. There is a lot of uncertainty about climate impacts and what types of adaptation measuring are going to work. There is this idea of adaptive management; seeing how you are doing and adjusting as you need to.

Given that type of framework, where are local governments in this process? We did some research in partnership with Dr. JoAnn Carmin at MIT, really a leader in this field over the past decade. We found some results and just drawing on ICLEI members. Now, granted the ICLEI members tend to be those that are kind of out in the lead on these issues. There may be some skewing in the data that these communities are a little bit further along than most. But even within this group most were still gathering information about adaptation planning and really just trying to understand it and trying to make sense of it before moving forward.

Moving down from there, there have been dozens of communities that have developed adaptation plans and moved into and adopted them, moved into implementations. Few have really had those plans adopted. Many of them are kind of high level strategies that contain recommendations. I think there is a barrier in getting very specific with these plans, adopting them, and then implementing them. How did communities approach developing these plans? You know again, developing a strategic general high level plan is what most are doing. But then a lot of communities are also integrating adaptation into other existing community plans whether they be comprehensive plans, or hazard mitigation plans, or what have you. Fewer local governments have drilled deeper into specific sectors, specific assets.

We really are still seeing much of this at a strategic level right now. Along the lines of communities that have integrated adaptation, local and hazard mitigation plans have been a vehicle for doing that in quite a few communities. It is still an emerging practice for sure. But there are case studies out there now. We are going to be publishing a digestive case studies on communities that have done this.

I think Jessica and Karen are going to be talking about this in more depth. But not every community can get the resources to go out and develop a standalone climate adaptation plan. Because hazard mitigation plans are looking at national hazards; many of which are changing as a result of climate change, working through these plans, it makes a lot of sense. Thousands and thousands of communities are already preparing these plans. That is kind of at a technical level, the state of adaptation.

There is also at the political level. We are seeing more and more campaigns that are working with mayors and local officials on this. I mentioned Resilient Communities for America is one of them. Getting local elected officials to make a commitment to this issue and prioritizing it in their communities. We have partnered with National League of Cities, the U.S. Green Building Council, and the World Wildlife Fund. They have just about 200 local officials that have signed onto this. Not only are they making a commitment but they are all – to taking action; but also, to sharing their success stories. They are reporting to a platform called the Carbon Climate Registry to share what actions they are taking in terms of adaptation and start to facilitate that exchange of practices.

Okay, so that is kind of a high level framework and kind of where communities are at in the process. I wanted to go into the most – the fundamental concepts that you will encounter in doing this. Really, a first step even before getting into the Five Milestones is just initiating an effort, getting started. There are some basic questions that you will want to ask yourself about what is going to work for your community.

The first is the geographic or jurisdictional scope of your adaptation process. There have been a lot of different approaches. Some of them have focused on say citywide impacts or really just kind of looking at everything inside your jurisdictional boundaries. Others have taken a more district level approach where maybe there is this specific type of impact, the coastal impact where you are really just looking at the coastal zone. Others have been drawn out even further to more of a collaborative regional type of approach recognizing that in our metro regions or even at the state level, we share a lot of the same kind of impacts.

A lot of the solutions need to be coordinated at a regional level. That would be one question to ask yourself is do we want to focus on a district, a city, or at a regional level? Another question is the

scope of the climate impacts that you want to look at. One way to look at it, like I said is extreme events versus long-term trends. Are you going to look at both of them or one, or the other? Within that, climate change is affecting temperature, precipitation, and sea levels.

Flowing from those changes are a variety of changes to hazards from extreme heat events to wildfire, to increased extreme precipitation, to drought or flooding. There are all types of hazards and effects that you could be looking at. Some cities focusing on one just to get started. Others who wish to take a more comprehensive approach. That is the question you would need to answer. Another is the scope of the sectors and assets that you are looking at. You have decided what elements of climate change you are both concerned about. What sectors and assets are those going to affect? There will be an effect on the built environments. There will be effects on ecosystems, effects on vulnerable populations. There is built natural and social to start. Within that is it infrastructure, buildings? Is it certain populations that you are concerned about? Really getting a clear scope around your efforts before you move.

All of that should be informed by stakeholder engagements. Stakeholders can have input into what the scope should be. Then depending on what the scope is, you should identify stakeholders that affected in those areas, right. Those are just some considerations for getting started. With that scope, it is time to move into the milestones. The first one is looking at vulnerability and risk assessments. Why are communities doing these? Well, the vulnerability assessment provides information about the nature of the problem. It identifies the assets that are going to be affected by these impacts.

It helps you narrow your focus and prioritize what vulnerabilities you are most concerned about. Then it helps to inform your decision making process around policies. It is really giving you a lot more information to work with and to base your policymaking around. There are traditionally three components to vulnerability. I am going to talk a little bit about each of them. Those are exposure, sensitivity and adaptive capacity. First, starting with exposure; exposure is figuring out whether assets will experience the impacts of a climate change.

A lot of times it is a spatial analysis of the people, property, systems, and functions that would be affected due to climate change in any particular place. Here the example and this is sea level rise. This is from a project we did for the city of Los Angeles where we evaluated the vulnerability of their coastal zones to sea level rise. One thing that I did not put a lot of information into this presentation about is the climate science. But this is a good place to just talk a bit about it. If this is a spatial analysis of where climate change will impact you, obviously you need some data about the climate impacts.

There are plenty of sources to get this data. Researchers that are doing a lot of work around this; and what they do is something called downscaling where they take the global climate models that factor in things like wind patterns, atmospheric pressure, heat, energy, waves. Essentially the whole climate system and project out how more greenhouse gas emissions will change the climate. They do that at a global scale. Then scale down models to a finer resolution; sometimes just a few square miles in an area. That can give communities a better sense of what will be impacting them locally.

You are looking for downscaled climate projections. You can find those from a number of different sources. There is a lot of data in the National Climate Assessments that came out earlier this year. The U.S. Global Change Research program published that. That is a great source of information, the

National Climate Assessment. You can also look to researchers in your regions, and particularly, the NOAA RISAs, that is the Regional Integrated Science and Assessments. The NOAA RISAs are set up to work with stakeholders to understand the climate research. There may be a RISA in your region.

Then sometimes, the states are engaged in this as well. For example, in California, there is a clear – there is a state climate assessment. There is a Cal-Adapt clearinghouse where you have kind of a web portal where you can go and get the data. They are building one in New York as well, and other states. Federal and state agencies are helping to disseminate this research out there. You will need it to determine exposure. That is really the first component of vulnerability.

Once you have a sense of what assets are exposed to climate impacts, you want to understand how they would be effected by them. That is a question of – sensitivity gets to that question. Sensitivity is the degree to which assets would be impaired by a climate impact. Systems that are greatly impaired by small changes have a high sensitivity to those impacts. Those that are not that impaired have a low sensitivity. The final element of this is adaptive capacity. You may know that an asset is going to be exposed. You may now that is it very sensitive.

Then the question of is this asset able to adjust or change how it works so that it can maintain its function when it is exposed to that impact? For example, maybe a waste water pump station is exposed. It gets flooded. It is impaired. It is sensitive to that impact. It is down. But you have a system where – you know where and you identify the problem. You pump the water out quickly. You get it running again. You have systems in place that increase adaptive capacity. Adaptive capacity, it could be technological. It could be in terms of governance. It could be social. There are a lot of ways of thinking about this. But essentially adaptation is aimed at improving adaptive capacity. Once you have understood those things, you can get a sense of overall vulnerability.

Essentially things that have low sensitivity and high adaptive capacity are not very vulnerable. As a result, they would probably be lower priority in your adaptation efforts. Assets and systems that are very sensitive and do not have much adaptive capacity are those that are very vulnerable. You probably would want to prioritize. That is a quick overview of vulnerability. The other aspect to doing assessments and analysis is looking at risk. Risk assessment allow the identification and analysis of uncertainty in decision making.

Climate change presents a lot of uncertainties. We know that it is happening. We know that it is going to be getting worse. But beyond that, there is a lot of uncertainty. How will emission scenarios evolve? What effects do emissions have on the global climate? How confident are we in downscaling those global climate projections to a regional level? There are all kinds of uncertainties. Risk management helps you understand the probability of these things occurring and the consequences, if they did occur.

Where you have a high probability and high consequence impact, you have high risk. It is again another way of prioritizing. Maybe there is a little probability impact, but it would have devastating consequences. That is something that is still pretty risky and that you would still want to plan for. Risk assessments helps you to manage that uncertainty.

Okay. How do we, and having gone through that first milestone, and having gained a better understanding of how climate change is projected to effect you? It informs your planning process

so you can move into adaptation planning. The idea here is to identify policies and programs that are going to reduce your vulnerabilities and reduce your risk. These are some considerations and in terms of how you might go about that.

Like a lot of planning processes, it is smart to start with some guiding principles, some goals, and some criteria by which you want to evaluate potential strategies. There are a lot of times. This is a critical time to engage stakeholders in saying not just do we want to adapt from a technical perspective. We want to make sure that we are doing it in a way that advances our community's goals and values. That may mean in one community making sure that we preserve the historic buildings in our downtown. Or, that we ensure that vulnerable populations are taken into account as adaptation is done equitably and really developing these principles, goals, and evaluation criteria with stakeholders up front.

With that, then you are able to assemble of a suite of potential strategies. You would do this to address those key vulnerabilities. You already have a understanding of what your high priority vulnerabilities are. You also then can calibrate the potential strategy to respond to your risk assessment. Where there is a lot of uncertainty, you may not be prepared to act as aggressively. Where there is a lot of certainty, you may be more ambitious with your policies. It is really a question of how confident are we in this projection? How likely is it? How much and what is the risk? You can calibrate how aggressive your response is around those questions.

Then finally, evaluating and prioritizing those strategy and developing some recommendations, and always getting stakeholder feedback as you go. A lot of this is common to planning that you already do. But I think there is an element here of prioritizing vulnerabilities and responding to your risk profile, and how much risk you are willing to take. With that, I am got not go so much here into how you implement your plans or how you monitor them over time. I think most communities are still in these early steps.

I think the subsequent speakers on this panel are going to talk a little bit more about sort of best practices and some implemented projects. It will give you some ideas in that regard. For additional resources, you are welcome to come to our website, to the Resilient Communities for America website for more information on that. There are emerging professional associations that are working on this issue. ASAP is one of them, a great resource. Then, in terms of sort of them, clearinghouses for policies and best practices, the Georgetown Climate Center is great, the Climate Adaptation Knowledge Exchange as well.

If you do have any questions for me going forward, you can also reach me at Brian.Holland@ICLEI.org. I am sure we will take questions at the end as well. I hand it back to you, Lynsey.

Lynsey Johnson: Great, thanks so much, Brian. Actually, I have all of our presenters' contact information are on the second to last slide of this presentation. You will have Brian's e-mail and phone number on that slide. Right now, we will turn it over to Jessica from Georgetown Climate Center.

Jessica Grannis: Hi, all, can everybody hear me okay?

Lynsey Johnson: Yes.

Jessica Grannis: Okay. My name is Jessica Grannis. I am the Adaptation Program Manager for the Georgetown Climate Center. Just to give you a little bit of background on the Center. We are based at Georgetown Law in Washington, D.C. We were created to be a resource state and local governments to help them understand what was happening on Federal climate policy here in D.C.; and to help the Federal agencies understand what is happening on the ground on both adaptation and mitigation policy.

In my work at the Center, we work a lot with state and local governments to help them understand the legal and policy barriers they encounter in responding and preparing for climate impacts. Today, I am going to talk to you about some examples about how states and communities have planned for a climate change and incorporated adaptation into their existing laws and policies. The Climate Center recently released a new tool on our adaptation clearinghouse that allows users to see what each of their space is doing to prepare for climate change impacts.

This maps shows the states that have comprehensive state led adaptation plans on the books in dark blue. In light blue, you see the states that have adaptation planning underway. They are working on an adaptation planner. There is some grassroots efforts in some of these states to develop planning processes. Then, the black dot show places that have local adaptation plans or some other plans that incorporate climate. Each state on our – each state in the tool has its own page that lists all of the statewide and state agencies, regional, and local efforts taking place in the state.

I will show you a little bit more how that works. This is the state page for Maryland that has a comprehensive and statewide adaptation plan. At the top, we give you some background context of what inspired Maryland to take action on climate preparedness. What efforts they have undertaken. They have developed two plans. They have their phase one plan that looked at sea level rise and coastal storms. They had a phase two plan that looked at societal, economic, and ecological resilience.

Under the map of the state, you can see the state's progress tracking bar that shows you for Maryland. There is phase one plan. They had a 20 goals. Of those goals, they have 16 in progress shown in yellow. They have completed three. If you scroll down and look through and click on some of these links, you can get a detailed description of what the state has done to complete those goals. You can see a detailed breakdown of the goals by sector. The types of laws and policies that the state has adopted; any state agency plans and local plans that have been developed by the local governments in Maryland. Some of the guidance, and tools, and resources that Maryland has developed to help its local government. For example, Maryland developed a Maryland coastal atlas to look at sea level rise, and coastal erosion; and provide tools to help local governments understand their risks of sea level rise.

Specifically to a state and give you an example of what my home state is doing in California. In 2009, California adopted a comprehensive statewide adaptation plan. The plan includes a detailed assessment of what climate change will mean for this state across seven different sectors of the economy. They laid our concrete goals for preparing the state for impacts. They tasked specific agencies with implementing these goals. But a plan is only half the battle.

What California has been doing is taking the information that they developed through the planning process and integrating climate change into the state plans that drive state agency decision making.

For example, the state integrated climate change into the state's water plan which directs how the state manages its water supplies. The plan considers a range of management strategies for reducing water demand. As we all know, this is very important for California right now as it goes through one of the worst droughts in history.

It, this plan lays out a strategy by which California can meet its goals of reducing water use from the agricultural and urban users by 20 percent by 2020. The state also incorporated climate change into its state multi-hazard mitigation plan and looked at how climate change is going to exacerbate risks of natural hazards for the state, including footing and wildfire. This plan was actually approved by FEMA as an enhanced hazard mitigation plan; which qualifies the state for additional disaster relief assistance in the event of a disaster.

Hazard mitigation plans are important because they are the framework by which states and the local plans are corollary at the local level. It is a plan for directing disaster recovery money in the aftermath of a presidential disaster declaration. A strong plan looking at future risks gives states the ability to deploy these resources to ensure that their recovery investments will be sustainable given long-term climate change projections. This is a good model because president Obama has recently announced that FEMA is going to be calling on states to consider climate change in their state hazard mitigation plan. They are working to put out guidance. California is a good example of where this has already been done.

California also showed that adaptation planning is not a one shot deal. You have to constantly iterate and look back at your plan, and improve it over time. The state refined their 2009 plan by adopting a safeguard in California plan in 2014. The safeguarding plan, the state agencies took stock of the progress they had made on the 2009 plan. They updated it to include new goals based upon their assessment of their progress and the needs. California has also recognized the importance of the work to prepare that – preparing for climate change impacts. It is really going to be something that has to happen a lot at the local level.

California has developed tools to help local planners understand their risks and incorporate climate change into local plans. One tool that Brian also mentioned is the Cal-Adapt tool; which provides localized climate data to local governments and other resources, and tools, for local planners. The state has also developed a local adaptation planning guide, which helps local governments walk through the process of developing an adaptation plan and looking at the state's laws and regulations that are triggered in developing these plans.

The state has also developed tools for other critical actors beyond local governments. This is a guide they developed for local planners and water utilities on how to incorporate climate change into regional water management plans. The state also has similar guidance for local NPOs on how to consider scalable rides in regional transportation plans. Looking at another example coming from Florida; here, this is innovative. Because the Southeast Florida, four counties got together to do climate adaptation planning at a regional scale.

There is that. It is about four counties in Florida; Broward County, Miami-Dade, Monroe, and Howard County got together to work collaboratively through the Southeast Florida regional climate compact. They developed a regional strategy for not only reducing greenhouse gas emissions but also for preparing for a climate change impacts. They have a unified assessment of climate risks for

the region. This will help them figure out a strategy for how to respond to the impacts that are not going to – the impacts of climate change that are not going to respect jurisdictional lines.

They are also using this planning process to help inform local planning activities. In the case of Florida, Broward County took the information that they learned through the Southeast Florida regional climate change work to update and develop a climate change element within their local comprehensive plan. They looked at a range of strategies for preparing coastal development for more flooding. This is important because comprehensive plans link down to the land use decision making frameworks like zoning and building codes that really inform how your community changes over time.

Another example, moving inland comes from Denver. That recently adopted a standalone adaptation plan at the city scale where they evaluated impacts to buildings, public health, water supply, and a range of other sectors. This plan is useful because the city identified both short and long-term actions for building the city's resilience to future shocks and stressors. They laid out a concrete framework for implementation.

For each climate vulnerability, they laid out short-term actions that city agencies could implement. They identified responsible agencies and provided a discussion of the city plans that could be a vehicle for implementing the specific actions identified in their planning process. Another example of mainstreaming; so rather than developing a standalone adaptation plan. In Baltimore, they incorporated climate change into their multi-hazard and mitigation planning process. They looked at how climate change will exacerbate the city's risks of extreme heat, flooding, and other natural hazards.

The plan lays out a range of strategies that this city can take to increase its resilience to both current and future risks. Similar to Denver, as you see on the right, they identified the agency charged with implementing the specific strategies. The stakeholders that need – that the agency needed to engage with; and time frames for implementing the specific actions. Some other examples come from Boston. Boston is using site planning, site review planning for new development projects to require developers to look at how a future project may be vulnerable to the impacts of climate change and to design mitigation measures to reduce these impacts. They have their adaptation checklist which is required for new development and large scale development projects.

Part of what helps Boston realize that mitigation could be incorporated into large scale development projects was from their – from an experience with Spaulding Hospital; which is one of the most resilient hospitals because of ways that they designed the facility. They elevated critical utilities to the roof. The window open in the event of a flood or power outage. The first floor of the structure can actually be closed down, if it floods and the upper floors will still function. The landscaping surrounding the building is designed to dampen storm search. Then they also included green roofs on the structure to insulate the building and reduce urban heat islands.

Similarly, San Francisco recently incorporated adaptation into its capital improvement planning process. The city issued guidance calling all – on all departments to incorporate sea level rise projections into the design of new capital improvement projects based upon a risk based assessment. This is a picture of what would – so, Downtown San Francisco looked like and given sea level rise projections for the area. You will see that the whole ballpark is underwater.

To conclude with some high level lessons learned from looking at some of the plans that are on the books. While many states are developing standalone plans, there is often opportunities for states to incorporate a mainstream climate adaptation into existing plans. These are important. Because these are the plans that really drive state and local decision-making. For example, states can incorporate climate into hazard mitigation plans, transportation plans, and onwards. Similarly local governments have a range of plans that drive local decision-making.

We have seen a couple of examples here from Broward County using their comprehensive plan as a vehicle; Baltimore using hazard mitigation plans. But really once you understand the vulnerabilities that your community faces giving climate change projections and taking that information and incorporating it into all of the plans that drive local decision-making, it will be an important next step for ensuring that those decisions are reflective of long-term climate risks.

Good actionable plans, and we talked about some of the components in these other examples. The good actionable plans mean laying out specific concrete actions that can be implemented on the ground. Often they specify that particular agency or department within the government that is charged with implementing that action. They lay out specific timelines for actions. Then oftentimes, these plans call for progress reports to ensure that agencies are accountable for implementing the actions.

Good plans have a sort – and often consider how actions will be funded. Whether or not they can be legally implemented on the ground and in the vehicle for – the vehicle for which they should be implemented; and whether it is the zoning ordinance or a transportation plan. Finally, to determine when one of the factors that often gets left out is post implementation monitoring. To determine whether the actions we are taking are really reducing our risk to future impacts, we must be constantly monitoring the efficacy of the measures we are taking.

Good plans will incorporate a plan and funding source for monitoring the implementation – the implemented actions and ensuring that we are looking back at whether or not they are successful. The Georgetown Climate Center hosts an adaptation clearinghouse with over 1,000 resources that could be useful to the folks on the phone. It looks at resources across a range of sectors, and impacts. It has some good information. Here are some – the websites to find the Climate Center's website and the adaptation clearinghouse. Thanks so much.

Lynsey Johnson: Thank you so much, Jessica. Yeah, and as a reminder again, Jessica's contact information is on the second to last slide that we will get to. Right now, I will turn it over to Megan Susman from EPA to talk a little bit about sustainable communities and adaptation planning.

Megan Susman: Okay, and thanks everyone. Can you all hear me?

Lynsey Johnson: Yes, we can.

Megan Susman: Okay, great, thank you. I am having a little trouble with answering the flags here. Here we go. My name is Megan Susman. I am with EPA's Office of Sustainable Communities. We are a non-regulatory office in EPA that provides help to communities, states, tribes, other entity – and, or other governmental entities, and private and nonprofit partners as well on research tools and direct technical assistance on how to make communities more environmental and economically sustainable. We are also part of the Partnership for Sustainable Communities with HUD and DOT.

Now, what I am going to talk about is a little different. It is sort of drilling down from what Brian and Jessica were talking about. These are more elements of how you could implement an overall plan as opposed to an overall plan itself. Just so we are on the same page, I want to let you all know what I mean by sustainable communities. Essentially the strategies I will be talking about are Smart Growth and Green Building. Smart Growth is communities that have a variety of housing and transportation choices that are compact and have a mix of uses; a preserved Green space and farmland, and other important open space.

Then Green Building, of course, is using energy and water efficiently; encouraging environmentally preferable materials and building in locations that allow you to reduce your emissions traveling to and from the site. When you think about how these kinds of strategies can help you prepare for and adapt to climate change, there are some overarching principles. One that I would put above all the others is to make sure that you are helping vulnerable populations in particular, people who are low income, the very young, and the very old. People who do not speak English as a first language, and who are chronically ill; and minority and overburdened communities.

Make sure that you are listening to what they need. That you are paying particular attention to the type of health that they need as they are the most vulnerable to climate change impacts. They have the least ability and resources to adapt to them. Basically, you want to figure out where it makes sense to develop and where it does not make sense to develop. The lens that climate adaptation puts on that is that those areas might be different in the future. For example, if your area is projected to see sea level rise, your storm search zones are going to change. If your river is projected to flood more, and your flood plane is going to change.

Once you have figured out what those areas are, you can make sure that you are protecting the areas that are particularly vulnerable to the hazard or will be in the future. You are encouraging development in the safer areas that are within or well connected to existing development. Then in those safer places, you build contact development with a mix of uses and with housing for a mix of incomes. One of the things that Brian mentioned was that there is that ongoing climate adaptation as opposed to the extreme weather where you need to think about different props changing and habitat migrating to different areas.

Compact development can help you direct development to these areas; which makes it easier to preserve the places that you need for habitat, and farmland, and that kind of thing. In these places, if you offer transportation options that let people choose whether to walk, bike, drive or take transit. You can also help make sure that they have ways to continue to get around in case of an emergency that might shut down one road. Or, it might shut down your rail system. If you make sure that people have these other options, they can continue to function. Of course, building energy and water efficient structures and neighborhoods to make sure that you are using resources more efficiently now and also in the future as you are looking at maybe drought and energy disruptions.

There are a lot of reasons to use sustainable community strategies as you are thinking about how to prepare for and adapt to climate change. Just in general, they bring benefits regardless of the extent of climate change that happens. They can bring benefits in the short-term and in the long-term by giving people more housing options, and reducing pollution and from giving people transportation options and that kind of thing. These are no regrets or low regret strategies. They can also help reduce greenhouse gas emissions in many cases at the same time that they are helping you prepare

for climate change. That is reducing the amount of climate change that we all will eventually have to live with.

They are fiscally responsible for communities. They save local and state governments by encouraging developments that takes advantage of previous investments. They save individuals money by reducing transportation and energy costs. We are also finding that a lot of businesses find neighborhoods that use sustainable community strategies to be very attractive. Because want to live there and businesses want to be near workers and customers.

These strategies can also in a lot of cases help communities prepare for economic changes both by helping them to diversify their economies; but also helping them to insulate themselves against economic shocks like bottle, energy or fuel prices. I know gas prices are low now. But not so long ago, we had some pretty sudden spikes in gas prices. The people who lived in communities where they could walk, or bike, or take transit did okay. The people who lived in more spread out communities, you were reading stories about them having to choose whether to buy gas for their car or buy medicines.

Another advantage of it is that it can be hard to undertake one of these overall climate adaptation plans. In a lot of places, still even if you say, if you just say the words climate change, that can really shut down a conversation fast. If you start thinking about how you can make incremental progress by tying adaptation consideration into regular zoning code, or building code updates. Or those kinds of things that your community is doing anyway; it can help you sidestep a lot of those controversies.

You do not really have to talk about the climate related benefits, if it is not a good idea to do that in your communities. I think most importantly is that what we build today is going to shape how we respond to changes in the climate for decades to come. It is shaping our daily lives for decades to come. It is really important to get it right as quickly as we can.

You can think about the strategies I am going to talk about in three main categories. Overall, again as Brian said, you need to know what the problem is. You need to do a vulnerability assessment as your first step. These three categories come from a project that we did with the Metropolitan Washington Council of Governments to help them think about strategies that communities in their region could use to prepare for a climate change and bring these other benefits as well. Essentially, it is discouraging new development in particularly vulnerable areas; protecting people and assets that are in vulnerable areas; and encouraging environmentally and economically sustainable growth in less vulnerable areas.

Now, I know that you cannot read this table. You do not have to. I just wanted to show you how it is set up in that publication. We classified it by the adaptation planning stage. What we were calling kind of basic to advanced. The sector that it affects the most, land use, water, buildings, or transportation. Then the hazards that it is meant to address which included high temperature, storms and flooding, and sea level rise.

I will give you later in the presentation, a URL to get this full report. I think it is a good resource to look at because in looking at the Washington region, we had to really come up with policies that would work in the full range of community types in the region from rural areas all the way to very built up areas. In three very different types of jurisdictions, the District of Columbia, the State of

Maryland, and the Commonwealth of Virginia. Maryland is a home rural state; which means basically that communities can do what they want unless the state has explicitly said they cannot. But Virginia is a Dillon rural state, which is the opposite.

The communities have only the power that states have granted explicitly to them. That can be a bit of a challenge for a lot of places. These, a lot of these strategies can still be implemented even if the community does not have the power to say change its own building code or change its own zoning code.

I will not go. I will not read through all of these. But just very quickly and when you are thinking about discouraging new development in particularly vulnerable areas. When I say particularly vulnerable, I am talking about things like flood plains, wildfires, and wetlands, and things like that. Again, places that are not particularly vulnerable now, might become so in the future. But basically make sure that you are not inadvertently encouraging development there within incentives.

Do what you can to protect that land. Make sure that if the land is privately owned, that property owners are still able to get economic value from the land. Then protecting people and assets in vulnerable areas; here I mean, vulnerable areas in a little different ways. If they are not particularly vulnerable as the last set were, these could be places that are vulnerable to extreme heat or localized flooding, and things like that. In some ways, it can be a good chunk of your community.

Again, a lot of it is just making sure that your community can improve a storm water management, reduce the heat island effect. Make sure that things like your transportation system and your critical infrastructure are able to continue to function in extreme weather. Then we know that some communities around the country are starting to think about relocation. That is a pretty extreme solution. But it is something that a lot of places do want to think about and consider.

Finally in these less vulnerable areas you want to make sure that the development that you encourage is in or connected to existing an existing development. That you have a mix of uses; green and Complete Streets, which I will talk about in a minute. Passive survivability, which I will also go into in a little bit more depth. I just wanted to drill down on a couple of policies here. One of them is this green and Complete Streets techniques.

This is Decatur Street, which is a street in Edmonston, Maryland, which is a small working class jurisdiction in the D.C. suburbs. They had problems with this street flooding in the past. The flooding was off the street and into people's houses, and yards, and things like that. They implemented this Green Street. You can see some of the features here. They have rain gardens; which do not look great now. But some of those were actually taken on the day that they were opening up the street for the first time. It was in March. Things are not really blooming or anything. But the rain garden has plants that are designed to capture, absorb, and filter storm water to let it soak down into the ground and then release whatever remains through that curved cut that you can see into the sewer.

That should be much less storm water that is flowing slowly and has fewer pollutants. The whole thing is designed to capture the first one and one-third inches of rain; which means that about 90 percent of all rain events in the typical year for them will be completely filtered into the ground. They have sidewalks and bike lanes now. The bike lanes have pervious paving, which treats about 28 percent of the streets. The rain garden treats about 62 percent of the street. The sidewalks and

bike lanes encourage people to walk and bike obviously a little bit up the street there. You cannot see it. But there is a connection to a popular walk bike trail in the region. Then for a good measure, they have street lights with energy efficient and LED lighting.

Some ideas for how you can implement some of these techniques. You can adopt street design guidelines that encourage having sidewalks, bike lanes, and crosswalks. These kinds of things that protect and encourage bicyclists, pedestrians, and transit users, as well as these green infrastructure features like rain gardens and pervious pavements. You can – your community can adopt a Complete Streets policy. You can do pilot programs like this one in Edmonston was. That show the benefits and that educate people so that they are more willing to support these projects in other parts of the community; and maybe even implement them in their own – on their own private property.

I just, I think passive survivability is a really interesting technique to think about. What it means is that the building will still be habitable in the case of an extended power outage. A lot of the techniques that are used for passive survivability are essentially Green Building techniques. If your jurisdiction allows or encourages Green Building, you can do passive survivability as well. This is the Langston Brown School and Community Center in Arlington, Virginia. It is a LEED silver building.

It is highly energy efficient. It uses locally sourced and recycled material, and all of that. It is built in a walkable neighborhood that is on several bus lines. It has good transportation access. Its roof is white to reduce the heat island effect. You cannot see it in the picture. But it has also got parking lot with pervious pavement and some rain gardens behind the building. That white screen is one of two 11,000 gallon cisterns that collect rain water for reuse for irrigation and other non-potable uses.

Then at the front of the building there, they have solar shades that are designed to block sun in the summer but let it through in the winter so that if the power goes out, you are hopefully getting less sun in the summer; a little bit more to warm it up in the winter. Similarly, they have operable windows. Again, if the power goes out, you can ventilate the building to some extent without having to have air conditioning. Some thoughts on how to implement these techniques; really think about the places that need to keep functioning and need to be habitable in the case of an emergency.

Prioritize those buildings for those – for these techniques. You can encourage them through building codes. Maybe think also about places that are more vulnerable to service outages as well as the places that need to keep functioning through them. You can offer technical assistance and education and incentives for privately owned buildings. I just threw a few ideas up here. I think we are running a little late. I will not go through them in too much detail. But basically just some thoughts on when you are thinking about how to get started on these and how to prioritize.

Maybe think about what kind of updates or revisions were coming up for your regulatory – for your codes and things like that. Think about it from your vulnerability assessment. What vulnerabilities you could help address through any of these policies or regulations. Take a look at whether your codes are based on past weather trends as most codes in the United States are. Or, if you are taking climate change projections into account. Think about how you could get other benefits depending on what changes you make.

Then again, just think about how to get input from everyone in the community especially those low-income, overburdened minority communities that are often left out of development decision

making. I will quickly go through some publications that I think are useful. You can always just go to [EPA.gov/smartgrowth/publications.htm](http://EPA.gov/smartgrowth/publications.htm) to find these. The first is that publication I mentioned that we did with the Washington Council of Governments where those strategies came from.

We also just released a guidebook on using Green infrastructure techniques along with sustainable communities techniques. If you are interested in Green infrastructure. I would really recommend that you check that one out. We recently did a technical assistance project with the state of Vermont to help communities there recovery from flooding that happened after Hurricane Irene. As part of that report, we came up with a flood resilience check-list that I know a lot of communities have found useful.

Then, some more general and sustainable communities that Smart Growth publications are built in natural environments. It gathers research about the environmental and health impacts of development. How certain strategies can reduce those impacts. It is a great resource to look at. Creating healthy, or equitable healthy and sustainable communities. It gives you strategies that you can use to encourage equitable development.

Finally, I mentioned some of the economic benefits of Smart Growth strategies. We have a whole series on that called Smart Growth and Economic Success. We have individual reports for local governments, businesses, and developers. I will turn it back over to Lynsey now.

Lynsey Johnson: Great, and thank you so much, Megan. I will turn it back actually, and turn it over to Karen to talk a little bit about climate adaptation and the mitigation planning process.

Kathy Kaminski: Hello, and good afternoon, everyone. I am going to bring it back to the planning world. As was mentioned in the first two presentations, how the mitigation plans are provided opportunity to address climate change and climate adaptation issues in that. The first slide here is really about the purpose of the mitigation plan is to encourage safe decision making based on a good understanding of the hazards and the vulnerabilities; and the stakeholder values and priorities. We have developed a process, a planning process that is very similar to the one Brian mentioned earlier.

The first point – the first starting point is really to organize your resources and build a team. This is making sure that you engage all of the appropriate stakeholders and the agencies; and looking at who has the data. Who has some interest and equities in identifying what your vulnerabilities are. Looking at those social – the social vulnerabilities as well as the economic and built environment; and really taking an opportunity to step back and make sure that everybody who has some information to bring to the table is involved.

Everybody who has an interest in what those outcomes are is also part of that process. Then you get into assessing your risk; which the first step is really identifying your hazards. Those are all of those natural hazards that are mentioned here, including the non-climate change related, and the earthquake activities. But we are looking – these mitigation plans, we require that natural hazards be addressed. It was mentioned before, climate change is really exacerbating those existing natural hazards that you have. Maybe taking a look at them from a different perspective.

In the mitigation planning process we have the opportunity to bring that into that risk assessment process where you are looking at those hazards. Then the other piece is the vulnerabilities. It was

mentioned also in Brian's and Jessica's presentation is those sensitivities that you have. Systems that are designed currently with and to withstand some storm. You may want to build in buffers and free boards just accommodate where you think some of those uncertainties might be.

Those are – your vulnerability assessment will give you a sense of where to go with that. Where you think the changes might be. But certainly the mitigation planning process requires us to take a look at the existing vulnerabilities. We know that we are not necessarily doing a good job of addressing and mitigating those. That is really a good place to start to get ourselves being more resilient to the existing conditions.

Then the second – the third bullet there is really developing your plan. Really engaging in setting that goal of what you want to accomplish; and your strategies, and really setting up that, the time frame for what you want to do it in. As Jessica meant it, I mean, we need to look at what makes a good plan. It is not just the document itself. But you identify who has the action to do something with the time frame and where the resource is going to come from to take action on that. Also, it is also not a good plan unless you implement and monitor the progress of the plan. FEMA's mitigation plans are on a five year cycle. Just to mention that we have a statewide planning process as well as a local and a tribal mitigation planning process.

Currently, every state and territory in the District of Columbia has a state level mitigation plan. We have over 23,000 jurisdictions covered by a mitigation plan in the United States. I think we may be somewhere near a 100 tribal mitigation plans. We have a good portion of the country. I think that we have figured out that over 96 percent of the U.S. population lived in a community that has at one time or another engaged in this planning process.

I think we are currently perhaps down around 80 percent of the population is covered by a current local mitigation plan. But it is a good process that can be improved as we move forward. Just to clarify, it is not just disaster related. The plan is a condition of receiving disaster assistance. But the real benefit of the mitigation plan is to encourage risk based decision-making on all future development decisions. If we can encourage communities to take that risk assessment and apply that to all of the capital improvement projects that out there.

All of the development projects, then we are making better decisions based on what will happen in the future as opposed to trying to use the mitigation plans simply to retrofit buildings that perhaps were not built in the smart way in it at the first point. We have, I think a lot of benefits of mitigation planning. What we really encourage at FEMA is the integration of plans wherever possible. I think that it is not always possible or reasonable to expect that you have one giant integrative plan in any community. But they all ought to touch each other in some way and provide some consistency in terms of your objectives so that they do not work at cross purposes.

We see that the mitigation plans are really and have a strong overlay with comprehensive land use planning, watershed, and flood plain management; and really the implementation of strong effective building codes. You do not need to have multiple risk assessments. I think that certainly at the state level, the risk assessment is probably one of the best tools in any state agency for looking at the risks and vulnerabilities from natural hazards. It is really something that we try to build on and not re-create separate planning processes. The biggest tool is as Jessica did say is the mitigation plan is an opportunity to take advantage of a disaster. I know that it is never something that you want in your community or jurisdiction.

But certainly, if you use that plan as you recover, you can make smarter investments. You can direct where the recovery dollar go if you have an opportunity to maybe redirect development in certain areas. Maybe retreat from other areas; the disaster provides that opportunity. The mitigation plan can also be the blueprint for doing that. Really what is probably the most difficult challenge we all face is that communication of the risk to the general population. Getting people to understand what it is that is important. Why we should care about whatever the hazard is. Whether we are talking about climate change and climate adaptation.

The planning process can be a place where really people understand what it is the risks and vulnerabilities are. It is that risk awareness that the planning process can bring to the table. I think we really talk about plans that are – I should have mentioned it earlier. That our plans are approved by FEMA. Every plan is approved by a FEMA office. Then it needs to be adopted by the jurisdiction with the entity of the state. That provides that commitment.

I think that not all of the plan is going to be implemented. But it at least raises the awareness to some other level that this plan is important. That we have engaged in this process. We have some meaning to do something with it. Also, as you know, mitigation works with hand in hand with the implementation of the National Flood Insurance program and supporting full claim management activities.

We are working with that and the National Flood Insurance program and coordinating with community rating system plans; which are those plans that communities get a reduction in their flood insurance rates to – when they do these higher level and local mitigation plans. I think I will leave it at that so we have a few minutes for questions. Thanks.

Lynsey Johnson: Thank you so much, Karen. As promised, here is all of the contact information for our four presenters this afternoon. These slides will be posted to the our – put in and archived on our webinar website on climate change. They will be available for you. But right now, we will turn it over to the phone, if there are any questions for you on the phone lines.

I do not know if we will have any come up. But right now, we do not have any in the Q&A at all. But I think that is primarily because our presenters did such a fantastic and comprehensive job of going over really all aspects of climate adaptation planning for the different jurisdictions at a regional level, and state level, and local levels. I am just so thrilled with this webinar today. I am just waiting to see if anything pops up. Kathy, we are okay on the phone lines?

Kathy Kaminski: It looks like we have nothing on the phone lines. But we just had one question come in on the Q&A. It is whether the presentation will be available on the NDRC websites – or NRDC website? It will be available on the HUD Exchange – on the website where you found login information and the webinar series. If you look back at the e-mail reminder, there is a link to the webinar series. If you can go to this one, it will be available. It is not up yet, but I expect it will be available by probably close of business tomorrow or on Monday.

Lynsey Johnson: Yeah. Actually, everything that is – every presentation that we have had up until this point, including all of the technical NDRC, NOVA webinars are also listed up there. Let us see here. I had another question. Okay. We have a question about community engagement and how to maximize the compressive community engagement approach. I will open that up to any of

the presenters as to how to maximize community engagement when developing a climate adaptation plan. If anyone would like to tackle that one?

Brian Holland: Well, this is still Brian. Just a quick and kind of high level response, I guess. I think with any kind of community engagement, the principle of starting early and engaging often applies here as well. Reaching out to folks to understand what types of impact they are concerned about. What they have been seeing in their communities. Really having them and informing the process right from the very start, I think we have seen is particularly useful.

Then, another principle also that you see from other planning is making this about the communities overall goals and really tying it to their interests. Instead of coming in with climate science and citing the data about days that precipitation is going to exceed some thresholds. Coming in and saying our Green space, it may be affected by this. Or, this community is susceptible to flooding. It has flooded in the past.

Let us talk about how we can make the community more resilient. I think appealing to those community interests and looking at resilience as a way to advance quality of life and advance other goals with that, it would be something to think of.

Lynsey Johnson: Great, thanks Brian. Just to follow up also, I know that questions phrased with and given the time constraints of the NOFA on the NDRC. We do have a webinar posted on the citizen participation and consultation component of the NOFA. I do not want to answer that directly primarily because due to the HUD reform act, we have very limited chances in which we can answer questions in making sure everyone receives that information fairly.

We have done the webinar on the citizen participation in consultation component of the NDRC process. I am going to refer you to those slides as well as that presentation, which is archived on the HUD Exchange NDRC website. If you do have problems finding that specific webinar, please e-mail [resilientrecovery@HUD.gov](mailto:resilientrecovery@HUD.gov). We can get you to that link so that you have all of those resources in helping you through the citizen participation and consultation component of the NDRC and NOFA process.

Lynsey Johnson: Yeah. Then let us see here. Question for Jessica; are all of the California guidances available on the web and the links to those? I think you had those on your slides. Is that correct?

Jessica Grannis: The links are not on my slide. But if you go to the Climate Center's web page on the state and local adaptation plan. You go to California's page, you can find all of those plans and more.

Lynsey Johnson: Great, thank you so much. The next question; what tools are available for planners to include contaminated sites like landfills, hazards, and materials, storing or treating sites, or underground storage tanks? Do you guys know of any tools and, or sites available for planners going to identify those sites?

Megan Susman: This is Megan. I know that our office. I am trying to think of what the acronym is. It is our office. It includes the Brownfields office and the underground storage tanks. It has some materials on this. You can check the EPA website. If you have any problems finding the

materials, please feel free to contact me at that e-mail and phone that Lynsey has up. I can help you find the right materials.

Lynsey Johnson: Great, thank you, Megan. Any other questions from the audience? Alright, with that I want to thank again the presenters for this an some really thorough presentations. Our next webinar will be on Thursday, December 4th at 3:00 p.m. Eastern on regional consortium building and working at a regional level especially when developing climate resiliency projects.

I urge you to join us at 3:00 p.m. Eastern. Again, all of this information and slides, recordings, transcripts will be archived on the HUD Exchange website, which is the NDRC website through HUD. You can go through and look at that as well as the Save the Dates for all of the upcoming webinars that we have going well through December. Any questions for our presenters? Like I said, we have our contact information up there. But Lynsey and I want to thank everyone for joining us today and a special thank you to our presenters for joining us. Thanks, everyone.

Kathy Kaminiski: Thank you. That concludes today's webinar.

Lynsey Johnson: Thanks, Kathy.