Questions[1] from EPA's Part 3 Adaptation Webcast
January 13, 2011

General Questions (Presenter Not Specified)

1. *Are there federal grants available for adaptation planning available to state agencies?*

   Answer: At present, there does not appear to be a dedicated grant program for adaptation planning. However, local and state adaptation planning can be supported through other existing grant programs. For example, NOAA's Coastal Zone Management (CZM) Program provides funding to state CZM programs, some of which choose to support state adaptation planning activities with a portion of their funding or pass through funds to support adaptation planning at the local level. HUD's Sustainability Communities initiative also includes adaptation among the eligible activities it can fund, and the CDC launched a Climate Ready States and Cities initiative that awarded a series of grants to help states and cities investigate, prepare for, and respond to the health effects that climate change may have on people.

   NOAA's Coastal Zone Management Program:
   http://coastalmanagement.noaa.gov/welcome.html

   HUD's Sustainability Communities initiative:
   http://portal.hud.gov/hudportal/HUD?src=/program_offices/sustainable_housing_communities

   CDC's Climate Ready States and Cities initiative:
   http://www.cdc.gov/climatechange/climate_ready.htm

2. *Is the Federal government working on standardized regional climate change projections?*

   Answer: Please see Allison Castellan's response to question #8.

Emma Zinsmeister, Neelam Patel

3. *The EPA supports increased use of renewable energy sources like solar panels. What concerns would large solar farms or concentrated areas of multiple solar panel use (e.g., urban building tops) create for heat island effect?*

   Answer: This is a commonly asked question and has been studied by researchers. In Tokyo, Japan, scientists estimated the total impact of photovoltaic (PV) installation by analyzing both the shading effect and the sensible heating effect (measurable temperature) of the panels. By developing a PV panel heat balance

[1] Questions answered during the webcast are in bold.

model, they were able to demonstrate that the impact of large-scale installation of PV panels on the building canopy temperatures would be negligible but that energy consumption for cooling may be reduced about 2-10% by the shading effect. To see the study, visit: http://nargeo.geo.uni.lodz.pl/~icuc5/text/O_14_3.pdf.

This study simulated building tops throughout Tokyo, Japan. However, it is important to consider the surface canopy for each region to best understand how the placement and operation (e.g., amount of heat dissipation, albedo, conventional roof characteristics) of PV panels will alter the surface energy balance and influence the heat island effect. More information on roof heat transfer under PV panels is available in this paper: http://www.ases.org/images/stories/ST/solaratwork/Nov11/PVshading.pdf.

4. *Is the estuaries program going to be expanded to cover climate change impacts on freshwater wetlands and related landfill design?*

Answer: From 2008-2010, EPA's Climate Ready Estuaries program partnered with 15 National Estuary Programs (NEPs) on coastal adaptation. There are no plans to expand CRE beyond the NEPs at this point since the existing Partners, and the other 13 NEPs that have not yet joined the program, are still in need of support and assistance to further their climate change efforts.

Allison Castellan

5. ***What progress has been made on the federal adaptation task force recommendation to develop a national climate service? Is it more than just the online data clearinghouse?***

Answer: The Interagency Climate Change Adaptation Task Force did not include a specific recommendation related to a national climate service. However, the Task Force recognized that effective adaptation requires collaboration, coordination, and access to best-available science, information, and tools. To make progress toward this goal, the Task Force recommended exploring approaches to develop an online data and information clearinghouse for adaptation (which I discussed during my presentation) and recognized the need to build science translation capacity to improve the communication and application of science to meet decision makers' needs. The Task Force's Adaptation Science Working Group, now housed at the U.S. Global Change Research Program, is working to implement these recommendations. In addition to exploring options for an online data and information clearinghouse, it also plans to develop a handbook on effective science translation in support of adaptation for decision makers at local, regional, and national scales.

6. *What would you recommend as useful steps that regional offices of federal agencies can be doing right now to coordinate with other federal agencies and stakeholders?*

   Answer: In its October 2010 Progress Report to the President, the Interagency Climate Change Adaptation Task Force recommended that Federal agencies improve regional collaboration and coordination of Federal adaptation efforts. Better coordination in the regions would improve access to science, information, and technical assistance to support adaptation in each region and improve the responsiveness of Federal agencies to the evolving information needs of decision-makers in each region. In response to that recommendation, Federal agencies are working to enhance coordination across the region and leverage existing and emerging capabilities to deliver climate information and services to their partners.

   By building on their existing networks and partnerships in the region, regional offices should work with other Federal agencies, state, local and Tribal governments, NGO and academic communities, and the private sector to identify what the most pressing regional climate change adaptation needs are, what information and resources are already available, and ways that each group can leverage its unique expertise and resources to address the adaptation issues.

7. *Do you know of anything CEQ is doing regarding it's guidance on NEPA and how climate change relates to this adaptation work? And if so, could you elaborate?*

   Answer: We are currently reviewing the comments that we received on our Draft Guidance on the Consideration of Greenhouse Gases. To the extent that the NEPA guidance aligns with issues raised in the Interagency Climate Change Adaptation Task Force report, we will certainly consider those issues and see how the adaptation measures should be integrated into the final GHG guidance.

8. *Is there a federal effort to help state and locals downsize climate modeling results to be more useful in helping identify vulnerable infrastructure and populations and formulate adaptive strategies?*

   Answer: The National Climate Assessment will develop scenarios and model output that can be used for multiple purposes related to adaptation, mitigation, and planning. In the longer-term, the Assessment plans to provide information on how to build regional climate scenarios so there will be a consistent set of information for each region.

9. *How will the political climate and threats of blocking funding for climate change activities expected to affect your group's efforts?*

   Answer: The Task Force report does not call for new funding for climate change adaptation. The recommendations in this report will be funded within current budget amounts and guidance. Agencies will be working closely together with the

Office of Management and Budget and through the Task Force to identify opportunities to leverage each others' investments, capabilities, activities, and information.

10. *Will the working groups be involved again for the 2011 progress report or will CEQ handle this "in house"?*

    Answer: The Task Force working groups and other groups outside of the Task Force that are currently working to implement the Task Force's recommendations will contribute to the 2011 Progress Report. The Task Force's working groups were not designed to exist indefinitely. The responsibilities of some of the Task Force working groups are transitioning to other interagency efforts as the Task Force's recommendations move into an implementation phase. For example, the Task Force's Adaptation Science Working Group has transitioned to the United States Global Change Research Program.

11. *Does this mean that they will be changing all requirements, for example the 100 year flood plain?*

    Answer: The Task Force's recommendations focused on interagency or Federal Government-wide actions that could be taken to better prepare the United States to respond to the impacts of climate change. However, the Task Force did recommend that adaptation should be a standard part of agency planning to ensure that resources are invested wisely and that services and operations remain effective in a changing climate. To help agencies address the Task Force's recommendations, CEQ will be releasing implementing instructions for Federal agency adaptation planning that will help agencies begin to integrate adaptation into their planning, programs, and operations.

Steve Seidel

12. ***It sounds like there are a lot of great projects in the different agencies, but most of the projects you mentioned were not inter-Agency. What kinds of issues/information do you think are required for coordination between federal agencies?***

    Answer: Our summary of federal adaptation activities is organized by agency, but when you look at the specific initiatives many do indeed involve multiple agencies. For example, the Army Corps of Engineers efforts on water resources involved the Bureau of Reclamation, USGS and NOAA. The CEQ interagency task force is a major step forward in bringing agencies together to address areas of overlapping interest and responsibility.

13. *Have you seen any findings related to the cost/benefit of non-structural measures (elevation, relocation, acquisition) to address flooding? Any findings with regard to perverse federal incentives (NFIP, USACE protection, etc.).*

Answer: I have not seen any specific analysis comparing the costs and benefits of non-structural measures addressing flooding. There are certainly many examples of existing federal programs that have unintended consequences of creating greater risks (and costs) associated with the impacts from climate change. This should not be that surprising given that existing programs were developed over many decades when changes in climate were not a factor anyone thought needed to be considered. As agencies undertake further reviews of their programs to determine how adaptation can be better mainstreamed across their activities, many of these problem areas should be identified and possible alternative approaches (where permitted under applicable statutes) developed. Some of these perverse incentives will be relatively easy to address, but others will reflect conflicting objectives and will be far more challenging to resolve.

14. *Do you know if there are any Regional Integrated Sciences and Assessments (or RISAs) planned for the Midwest?*

Answer: On September 22, 2010, NOAA/Commerce Dept. announced awards for six regional assessment centers including the Great Lakes Regional Integrated Sciences and Assessments Center which will be lead by the University of Michigan and Michigan State University and focus on issues related to the watersheds of Lakes Erie and Huron.

15. *Who in the federal government is coordinating current interpretation and use of "Downscaling" of GCM? Are these being used by the federal agencies in decision making in hazardous waste site remediation programs, planning and engineering? Is anyone integrating downscaled model outputs as inputs into other hydrological models?*

Answer: The issue of downscaling of climate model output is obviously important, but is not an issue that we have looked at in depth.

16. *Do you know why agencies are not taking a watershed or ecosystems approach to defining planning/research areas? Will that shift in light of the task force recommendations?*

Answer: The need to include consideration of changes in climate will strengthen an already strong case to look at planning/research from a watershed or ecosystem approach. I believe the participants in the interagency task force understand this need, but caution that such changes are likely to occur incrementally and take some time.

17. *How does the focus of the DOI climate centers and NOAA's RISA programs differ and what efforts have been made by those agencies to collaborate and work together?*

Answer: Recognizing the need for coordination, DOI and NOAA developed a ***Memorandum of Understanding (MOU) to Coordinate and Cooperate on Climate Related Activities Involving Science, Services, Mitigation, Adaptation, Education, and Communication (August 2010).*** The MOU provides a framework to build upon existing partnerships that bring together the Departments' best available climate science and services to inform adaptation strategies and response decisions to manage America's oceans, coasts, Great Lakes, and public lands. This agreement will also draw on national and regional programs and partnerships of each Department, including DOI's emerging Climate Science Centers and Landscape Conservation Cooperatives and DOC/NOAA's climate science and services, Regional Integrated Sciences and Assessments program, and Regional Climate Centers. Much of the agreement sets forth a process for the agencies to use to coordinate their activities as they move forward to implement and expand these relatively new initiatives. While a clearer understanding of the focus of each will likely emerge over time, it seems to me that there are enough issues and user needs out there that both types of entities will be critical to support the expanding community seeking to reduce the costs of our changing climate through adaptation.

18. *Federal funding supports many infrastructure projects in coastal areas. Many coastal road and bridge projects have long planning and construction horizons, often taking as long as 25 to 30 years to plan, permit, and construct. Other infrastructure projects require large land areas, such as water treatment or sewer treatment facilities. Should taxpayer money be used to fund projects that will be located in areas likely to be impacted or even inundated by sea level rise in the next 30 to 50 years? Can we anticipate some type of change in the formula used to determine how much public/federal funding goes to new projects proposed for location in these vulnerable areas?*

Answer: All of what you say is true and only by changing business as usual can we reduce (though certainly not eliminate) the costs associated with unavoidable climate change. It is critically important to make the case that a few dollars spent today to select an alternative location or to build to a different design standard could have a very substantial cost savings in the years and decades to come. There are encouraging early signs that agencies like the Dept. of Transportation understand that changes are required and are beginning to conduct the analyses to be in a position to move in that direction. But I would urge those working at the state and local level to make their voices heard and to continue to make the case for the types of changes you describe.

Jennifer Pagach

19. ***Are the financial models that you mentioned publicly available? The participant is referring to Financial models of adaptation- Sam Merrill, New England Environmental Finance Center & Paul Kirshen, Battelle***

    Answer: The videos and PowerPoint presentations from the workshops are available on http://ctclimatechange.com/and at ICLEIusa.org (just search for Groton Presentations) or use this long link : http://www.icleiusa.org/action-center/planning/climate-adaptation-planning-resources/groton-connecticut-coastal-climate-adaptation-workshop-presentations.

    There you will find Sam and Paul's presentations videotaped w/ Paul's PowerPoint and the slides and video from Janet Freedman from RI. You can also contact them directly. Sam has an article in ArcUser Fall 2010 (ESRI's publication), but basically they modeled cost of storm events and SLR scenarios on parcels w/ buildings based on ACOE values, then modeled adaptation options of workshop participants of choice under same scenarios to see dollar difference. Groton just got awarded an intern through the SOAR program who is helping them continue the vulnerability assessment.

20. ***Can you provide some additional detail on what went into your assessment of the costs of not adapting to the identified potential climate impacts? Did that economic assessment help motivate action?***

    Answer: Please see response to question #19.

21. *Can you expand on and explain the Rhode Island laws that you mentioned that deal with buffers and now recognize sea level rise range?*

    Answer: Please see response to question #19.

22. *Is CT thinking of assessing hazardous waste cleanup sites and facilities with respect to impacts from flooding, design that can accommodate climate change impacts? Is anyone working of deriving new ecological toxicity values for contaminants at new elevated temperatures in rivers and steams?*

    Answer: Good question. I believe the infrastructure subcommittee looked at this for the state. Their impacts report is at http://ctclimatechange.com/ under the Learn tab, then click the adaptation link. NEWIPCC is looking at water resource issues, but I do not think this issue with elevated temps is being addressed to my knowledge. I would contact Jessica Cajigas from NEWIPCC in MA, she would know if anyone is.

23. *Where did the funding for the program come from? Are there funding sources for similar work elsewhere?*

Answer: CT Dept. of Environmental Protection got the money to hire ICLEI to cosponsor from an EPA Climate Ready Estuary program grant through the Long Island Sound Study (also EPA group) since Long Island Sound is an estuary. Their next round of funding, as well as opportunities through the NERR program (who has separate funding available) is being advertised now. There are many other federal grants available, but as I warned in my talk, be careful not to bite off more than you can chew from the top of the food pyramid- use sparingly!