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Tuesday, January 12, 2016

Introductions and Opening Remarks

Mike Shapiro, EFAB Designated Federal Official (DFO)

Karen Massey, EFAB Chair

Jim Gebhardt, Director, Water Infrastructure Resiliency and Finance Center (WIRFC)

Mr. Shapiro opened the meeting at 1:37 pm and asked that all present introduce themselves for the record. Ms. Massey thanked everyone for attending the meeting and stated that she had never seen better work products come out so quickly from such new charges - a sentiment echoed by Mr. Shapiro. Everything from the work groups are actionable and practical. Ms. Massey asked the group to consider the individual work group recommendations and think about the most important recommendations for the Finance Center: What gaps are there that can be addressed on the ground and what next steps/deeper dives can the group take in the future?

Ms. Massey highlighted professional title changes for some members:

- Mathilde McLean-Crosby is now the Executive Director of the New York City Water Board
- Joanne Throwe is the Deputy Secretary for the Maryland Department of Natural Resources
- Helen Akparanta is now Senior Counsel at Transamerica Stable Value Solutions, Inc.
- Wayne Seaton is now Managing Director for Janney Montgomery Scott, LLS
- Courtney Knight is now Managing Director for Per Scholas, Inc.

Mr. Shapiro informed the group that details about the next EFAB meeting will be forthcoming once a location has been determined. Mr. Shapiro also recognized two Board members who will be rotating off the board leaving after this meeting, Mathilde McLean-Crosby and Leanne Tobias.

Mr. Gebhardt opened his remarks by saying that he sat with most of the committee members at the May meeting at DC Water. At that time, he was the Senior Advisor to the Deputy Administrator for Water Finance Matters. Mr. Gebhardt became the Director of WIRFC on October 1, 2015.

Mr. Gebhardt said that there is a lot to be done in the water space. The Water Finance Center's challenge of delivering value to the marketplace comes without a portfolio of funds. The Center needs to be nimble on its feet and needs to have a really good sense of where things are going in the marketplace. The Center also needs to have a good sense of what is current and what can be of good value if it can be properly translated from part of the marketplace to another, and to find where the opportunities to tease out new approaches that have an opportunity to be "actionable." Although the Center has a "finance" title, it is not just about the financing increments; there is more to it than the financing aspect. The Center needs to become more integrated in the technology conversation, asset management conversation, and the conversation around the value of water. To the extent that the Center can compete in the marketplace where the consumer is out to allocating their scarce dollars for

the things that they demand – recognizing the value of water opens up the door to having more vibrant conversations about how to attack the water infrastructure problem and how to create some space to move the price signal in the marketplace and gather up the revenue that is necessary to take on the challenges that everybody faces. So the Center is in the role of technical advisory outreach and running to ground best management practices, new thinking, and trying to be a warehouse for thinking.

The Center is currently in the process of bringing on new staff. The EFAB staff has moved over to the Office of Water from the Office of the Chief Financial Officer. Mr. Gebhardt said that the Center is in the process of doing some internal reports leveraging off of the work that EFAB has done, Jeff Hughes from the University of North Carolina has been working closely with the Center, particularly around public-private partnerships (P3s). This involves looking at what the P3 arrangements look like and what the risk profiles look like. The Center is doing an affordability study that will take inventory of the marketplace and what utilities are doing in an innovative fashion with regard to rate-setting, particularly as it might affect low income users. The stormwater financing clearinghouse portal will come out later this year. The portal will be a place with up to date information. With regard to state revolving funds (SRFs), the EPA must always be thinking about where the state of opportunities are and whether those opportunities are actionable. There are three lanes: 1) Lending swim lane; 2) Guarantee swim lane; and, 3) Investment swim lane. The lending swim lane is robust. The inherent capacity on the guarantee side is enormous – the challenge is, where would the guarantee elicit value in the marketplace? On the investment side - looking at social-impact opportunities other than treasuries to park idle cash. EFAB brings a lot of expertise, and the Center was to gather-in the conversation and be part of the team.

Discussion

Ms. Throwe said it would be nice to coordinate the stormwater financing clearinghouse portal with EFAB's final report. Mr. Gebhardt said that the report will be ready prior to completion of the portal, which will be ready in late summer. The portal will be a robust website linking to other sources allowing users to source by subject. Hopefully the portal will be associated with the GIWiz (Green Infrastructure Wizard) product.

Ms. Ann Grodnik-Nagle asked about the breakdown of the Finance Center's work between developing new tools versus facilitating work that has already been done. Mr. Gebhardt said that the Center has not created a work plan clearly dividing those two things; the current approach runs the gamut. Mr. Gebhardt said that the Center wants to gather up all of the data that is out there in the marketplace on stormwater, learning everything about what is going on in the affordability footprint, and learn everything about what has happened in the P3 world. When the Center gets fully built-out, there will be thirteen new people in the Center, as well as having the EFCs to leverage.

Ms. Heather Himmelberger noted that there is still a lot of confusion on the part of the states and EPA regions about exactly what the WIRFC is. There needs to be clearer messaging on how the Center fits into the big picture of EPA. Mr. Gebhardt said that the Center has hosted a couple of regional forums,

done a P3 training in Stanford, and there will be another P3 training in Seattle. Ms. Massey asked how the EPA is measuring the success of the Center. Mr. Gebhardt said that one of the conversations currently being had within the Agency is about how to measure success. One measure of success is being able to shape the national conversation around water. Mr. Gebhardt said that he thinks of success more in terms of results on the ground.

OW FY 2016 Priorities and Agency Budget Outlook

Joel Beauvais, Acting Deputy Assistant Administrator, Office of Water, EPA

Mr. Beauvais said that he has been at EPA for five years. Most recently, he led EPA's Office of Policy and had a lot of opportunities to work on the water portfolio on the regulatory side. He has also had an opportunity to work with the Office of Water on climate adaptation and resilience. The Office of Policy developed the green infrastructure wizard. While Mr. Beauvais had a lot of opportunity to work in the water space over the last few years but comparatively little in the infrastructure and infrastructure finance arena. There is a corpus of state revolving funds that is something like \$140 billion that plays a major role in financing the infrastructure that everyone relies on.

Mr. Beauvais mentioned that the Office of Water spends a lot of time writing regulations and the biggest part of EPA's budget goes through the Office of Water to the state revolving funds. Environmental finance is front and center for the water world. There are a lot of changes facing the nation in the water space. In a few days, the office will be coming out with the clean water needs survey. Over the next 20 years, \$600 billion needs to be invested in clean water and drinking water. The country is in a period where aging infrastructure, population growth, and increasing challenges from changing climate are putting increased stress on our systems, making water infrastructure management less predictable. We are at a moment now where water needs cannot be managed toward the future based on what has happened in the past. Local, state, and municipal governments experience significant levels of fiscal stress. The country needs to start thinking new thoughts about water infrastructure finance and doing new deeds on water infrastructure finance. Mr. Beauvais said that he thinks of the Finance Center as a "think and do" tank that can help innovate the way EPA makes itself available as a resource around water infrastructure finance. The desire is to balance creating and pushing forward new materials with gathering and providing a clearinghouse for existing resources.

EPA's new Water Community Assistance for Resiliency and Excellence, or WaterCARE, program will be unveiling the first ten communities across the country that will be recipients of technical assistance through the Environmental Finance Centers (EFCs). These communities have a population of less than 100,000, have a need to address public health challenges, have some median household income considerations, and are ready to proceed with a capital improvement project. The types of assistance that are contemplated with this program range from developing an asset management program, identifying financing options, partnership opportunities, as well as providing public engagement and decision-maker training. Mr. Beauvais said that he had a chance to read through all of the draft papers being considered by the committee that are largely directed towards the activities and work of the

Center. Mr. Beauvais said that the EFAB's expertise is incredibly valuable. The EPA is not a bank or financing agency, so it is very important to have the expertise of EFAB. One of the challenges is going to be making sure that the financing conversation is fully integrated into the policy/science conversations across the Agency. Marrying the climate resiliency conversation with the financial resiliency conversation is of particular conversation. There is a massive opportunity to take all of these conversations to the next level. The finance conversation is something that the EPA Administrator is very interested in. The Center was created under the umbrella of the Build America Initiative that the Administration has led. Getting technology to be a part of the conversation in the financing and innovation space is something to keep in mind.

Discussion

Ms. Blanca Surgeon asked Mr. Beauvais what concerns he has been hearing at the 30,000 foot level. Mr. Beauvais said budget constraints are at the forefront of concerns. This is an invitation to innovate by integrating the work on financing with the Agency's policy objectives. Mr. Beauvais reiterated that the Agency has a desire to make certain that all of the conversations happening everywhere in the Agency are well-integrated into one another. One of the challenges at EPA is the disconnect between the impact of the programs administered by the Agency and the public's awareness of that impact. There is a need to better tell the story of EPA's successes. Ms. Surgeon added that the international community looks to EPA for leadership. Mr. Beauvais said that it was very gratifying to hear that EPA is an international leader.

Ms. Throwe asked how the WaterCARE program would work. Mr. Gebhardt noted that the Center has \$500,000 and that the Agency plans to use that money to assist ten communities, one in each region, and bring them from a predevelopment stage to the project stage. The communities have been identified but they have not been announced to the public, as of yet. Mr. Gebhardt said there is an attempt to coordinate with state agencies to smooth the path toward getting these communities to the project phase. Ms. Throwe encouraged the EPA to heavily engage the state agencies.

Ms. Himmelberger said that WaterCARE looks at communities more holistically than EPA typically does. This could challenge the EPA to make more of its services holistic. Ms. Massey appreciated integrating the finance conversation into the policy and science side of things. She asked Mr. Beauvais what he saw as a measure of success for EFAB from his perspective. Mr. Beauvais said that the ultimate measure of success of an advisory board is, "do they help you think a new thought that can actually be implemented and is worthy of implementation?" How to run with those new thoughts and get them implemented is a challenge for the Agency.

Building on a Year of Landmark Success in 2016

Dr. A. Stanley Meiburg, Acting Deputy Administrator, EPA

Dr. Meiburg began his talk by reviewing some of the EFAB highlights from 2015. There was a project with OECA (Office of Enforcement and Compliance Assurance) on the non-compliance of small water systems in Puerto Rico. Small water systems and environmental finance is one of the sticky wicket problems in the country. Big systems can access financial markets for loans while small systems cannot. Small systems do not have the rate base or infrastructure base that larger systems do. Other projects such as operation and maintenance costs related to green infrastructure are going on; continued work on household affordability is encouraging; taking on financial capability development for small systems; and, possibilities for public-private partnerships for water infrastructure projects. EFAB is also looking at ways to advance predevelopment activities for communities and figuring out how to help communities on financing with stormwater. Financing on stormwater and green infrastructure and identifying what barriers communities face in trying to do the right thing is an area that needs more attention. EFAB expects to complete four of these projects by next month.

There was reorganizational shuffling with the Center for Environmental Finance. This had two purposes: 1) To make it a line office; and, 2) Provide an institutional home for environmental finance.

Environmental finance is not just about water infrastructure and the reorganization will provide opportunities for different kinds of engagements. Dr. Meiburg said that he was able to make good on some of the things he talked to EFAB about before despite a miserable budget environment for the Environmental Finance Centers. The reorganization has provided a certain kind of institutional stability that was not there before. Dr. Meiburg said that one of his jobs when he served as EFAB's DFO was to get more visibility for the committee with the Administrator and the Deputy Administrator. He said that it was an honor to be meeting with the EFAB. He thanked the board members for their service.

Discussion

Mr. William Cobb asked Dr. Meiburg what his thoughts were on the ability to diversify amongst offices. Dr. Meiburg noted that Mr. Shapiro has been in leadership roles in multiple areas in the Agency and has an incredible breadth of experience. The criteria that the Agency has always used was, "Do you have a client?" In terms of knowledge of the Agency, the Board's current DFO is nonpareil. The first step is thinking about what problem the Agency is trying to solve that EFAB might have a solution for, and respond quickly and nimbly to that. The EFAB can say things to EPA that EPA cannot say to itself. The committee has people that can look at the Agency through many different lenses.

Ms. Massey asked if it would be possible to get some cross-pollination among the different FACAs (federal advisory committees) that work with EPA. Dr. Meiburg said the best way to go about that is through informal outreach and contacts. Committees like NACEPT (National Advisory Council for Environmental Policy and Technology) and LGAC (Local Government Advisory Committee) would be good to reach out

to. Dr. Meiburg gave a couple examples. One that he was pleased about was long-term finance – extending the use of loans from 20 years to 30 years. What held up getting the loan extensions was the Agency and OMB. The strength of EFAB’s report on extending loans enabled agreement by all the parties involved. On affordability, Dr. Meiburg said that the work the board did started to change the nature of the discussion and changed the way that EPA thought about the issue. Another success has been leveraging the investments in the state revolving loan fund so that the money in the SRFs works harder. There are vast differences from state to state on what the capitalization rate to loan ratio is. The financial assurance effort did well in knocking down some myths and expanding people’s understanding of the different tools that are available.

Dr. Meiburg said that statutory things take a long time to evolve and one must strike when the opportunity presents itself. EFAB can help with plowing the ground for statutory change. Part of what EFAB can do is present a policy argument where the statute does not lock-in a pre-ordained course of action. EFAB can bring up a particular matter in a way that gets it exposure, is well-defined, and becomes actionable.

Ms. Surgeon asked how EFAB can leverage connections with organizations like NAWCA (National Association of Clean Water Agencies) to do even more. Dr. Meiburg said that organizations like NAWCA have an important role in the dialogue around issues of clean water. EFAB is different because of the diversity of representation on the Board and its special role in focusing on finance.

Ms. Donna Ducharme asked that in the quest to increase the diversity in EFAB’s projects, if Dr. Meiburg could provide his point of view about what the key financing issues are in the different divisions of the EPA. Dr. Meiburg said money is always an issue everywhere. The reason that financial assurance came up as a big issue is that responsibilities that belong with responsible parties did not end up getting shifted to the public sector – like Superfund, which is now being paid for out of general revenues. One of the interesting things on the air-side is that utilities are looking at a lot of questions with respect to compliance with clean power plant and how it gets financing. We are in an era where the “how to pay” question is more acute than ever. The old solution like the 1970s where the government would do something like the construction grants program is not going to happen. Dr. Meiburg said that the EPA needs to be clever in finding ways to align public purposes and private resources and enter into public/private partnerships in ways that can provide a public service, as well as a reasonable rate of return for investors.

Ms. McLean-Crosby said that EFAB is not always aware of the EPA’s challenges. It would be good if there was a way for the EPA to more clearly communicate its challenges to the Board. Dr. Meiburg agreed and said that was one of the things that the Agency is trying to work on. Dr. Meiburg said that it is a challenge to the board to ask, “what is the specific question that the board would like to address for the Agency.” Focusing on the question is critical.

Ms. Hope Cupit asked how the EFCs are setup and if there are any areas that are not served. Dr. Meiburg said that EPA has funds it makes available to the EFC and the Agency engages in a competition every six years to identify where those centers will be located. Region 8 did not submit any applications. Following this meeting, there will be an announcement for applications for Region 8. Dr. Meiburg said that the Agency is trying to make sure that it is providing service across the country. The EFCs are among the most cost-effective providers of service in the EPA. Dr. Meiburg said that it warms his heart to see the EFCs being strong, active, and involved.

Work Group Report Out: Financial Capacity Development for Small Drinking/Wastewater Systems
Heather Himmelberger and Jennifer Wasinger

Ms. Himmelberger walked the group through the report. The group's charge was to identify ways in which the Finance Center could work with various entities to provide a coordinated array of technical and financial assistance that will help small systems address their challenges. The group stayed focused on what the WIRFC could do to help. Ms. Himmelberger said that the working group did not want to recommend to WIRFC taking on something that already existed. The group asked the question: what are some of the greatest challenges faced by small communities in the financial capacity building arena?

Some of the greatest concerns/challenges for small systems:

- Aversion to taking on debt (some communities have maxed-out their debt capacity)
- Generally support other aspects of municipal government
- No financial expertise
- No technical expertise
- Lack of willingness to take action
- Lack of a separate finance utility (enterprise)
- Need to raise rates
- Ability to identify/define/educate the community on what they should be doing
- Some that are located in remote areas rely solely on whichever engineering firm is willing to visit them
- No affordable alternative
- System size defeating economy of scales

Work Group Recommendations for WIRFC and EPA:

- Maintain a list of resources and tools, both national and by state, for financial capacity
- Match resources with concerns/challenges to help systems connect resources to their needs
- Consider how the resource information would be structured, including recommendations on how a utility would use the resource
- Could act as a clearinghouse for work the state SRFs or regulatory agencies are doing that positively impact financial capacity

- Concentrate on hard or extremely complicated projects
- Peer-to-Peer exchange possibility; is there a way for EPA to act in a clearinghouse capacity to set up exchanges from community to community?
- WIRFC's focus needs to be on financial capacity for small systems (10,000 or fewer)
- Talk about what success looks like
- EPA could help coordinate TA providers and share coordination models

Ms. Himmelberger said that this work group is the most impactful to public health. This group has the most direct relationship to whether or not EPA will meet its drinking water criteria.

Discussion

Mr. Shapiro asked whether the group was making the distinction between recommendations that looked like shoulds, coulds, and may. Ms. Himmelberger said those were not intentional distinctions. Ms. Ducharme asked about the definition of "small systems" as being systems with a population of 10,000 or less. Ms. Himmelberger said the reason the work group chose 10,000 is because EPA's small community technical assistance funding has defined small systems as less than 10,000. About 90% of communities on the water side fall under 10,000.

Mr. Rick Giardina asked how WIRFC would reach out and insert itself into situations where the system and the state may not be advancing things. Ms. Himmelberger said that if the system and the state reached an impasse, and knew the WIRFC resources were out there, the system and state would reach out to the WIRFC. The group did not envision a large number of these "impasse incidents" occurring each year but wanted to make sure that WIRFC was available to help resolve an impasse should one arise.

Mr. Thomas Liu said that measuring success is having objectives and having a mission. The solution is to have a broader objective. Ms. Himmelberger agreed that it is a problem that people do not have a collective vision for their communities and they do not set goals. The least-liked aspect of asset management is goal-setting. Ms. Lisa Daniel said that "goals" sound more intimidating than "policies and procedures." Perhaps less intimidating terminology would spur action. The solution could lie in using different terminology to do the very same things.

Ms. Himmelberger said that the work group is going to redo their report by integrating new comments. In the next couple of weeks the group will send their report out to the full Board for additional comments and hopefully the entire report will be complete by February.

Work Group Report Out: Financing Pre-Development Activities in Communities

Ed Crooks and Hope Cupit

The charge to the work group was, “how can the Water Infrastructure and Resiliency Finance Center best support financing of predevelopment activities for environmental infrastructure projects in communities?” The group underlined the significance of undertaking and investing in predevelopment activities. It’s important that the Center approaches this issue with a clear commitment to encouraging communities to make these investments.

Ms. Cupit went through the work group’s recommendations for the Center:

- Compile information on sources of funding/financing for predevelopment activity, including how to contact and request such funding
- Compile information identifying which predevelopment activities are most critical to securing project capital financing (this will vary on project type and capital funding source)
- Provide case studies on how various communities have financed predevelopment costs
- Develop generic estimates of how much the predevelopment activities for various types of projects may cost
- Develop guidelines, manuals, handbooks, etc., for conducting predevelopment activity
- Consider how other federal agencies have addressed the need to provide technical assistance and how they delivered it
- Establish a customer service function (in collaboration with the EFCs), wherein Center staff assist local government agencies in exploring and accessing various federal grants and assistance programs
- Develop education modules for local government and provide training/educational sessions for local government staff on how to access predevelopment funding most effectively
- Develop guidance for EPA offices, SRFs and other funding sources on the value and importance of funding predevelopment activities, and provide recommendations for process and priority of funding decisions for these costs

Mr. Crooks said that he did not know how much outreach the Center should do. The consensus of the work group is that EPA is not thought of as a resource like the SRFs or state environmental protection agencies. Ms. Cupit said that the group also discussed success measures: 1) make project planning a priority; 2) local governments are better informed about the available financing opportunities; and, 3) jobs will be created once the projects move to the construction phase.

Discussion

Ms. Throwe said a checklist will assist in the predevelopment phase by helping communities meet the expectations of the state agencies with greater ease. Mr. Tracy Mehan suggested that the report might benefit from a generic reference to “partnering” with the state agencies. Mr. Crooks said that the work group felt the same way. The Center needs to develop a distribution channel. Ms. Tobias asked if there are any standard metrics used to describe expenditures for predevelopment planning. Ms. Cupit said that the report states that the Center should develop metrics because there are none right now.

Ms. Himmelberger said that the predevelopment problem is bigger than access to funding. It would be interesting to come up with reasonable estimates for project costs across states considering that projects tend to cost whatever a particular state gives in funding. Mr. Gebhardt wondered if there were idle funds within the context of the SRF that could perhaps be doing some double duty. The big questions asked are: Who is the primary audience and how will you leverage the most state-of-the-art thinking that is out there? Trade associations have a role to play here as well.

Ms. Ducharme asked if one of the things the Center could do is provide some thoughts about setting standards. Everyone is doing their own thing because no one knows what the standards should be. Mr. Crooks said that one of the group's recommendations talks about guidelines, manuals, and best practices. Mr. Crooks said that the work group's report could be done in a few weeks after a round of editing.

Mr. Shapiro noted the recurring theme of "distribution channel" connection to WIRFC and how the Center can play a value-added role in the context of multiple distribution channels.

The meeting was adjourned at 5:02 pm.

Wednesday, January 13, 2016

Opening Remarks

Mike Shapiro and Karen Massey

The Board convened at 9:06 am. Ms. Massey and Mr. Shapiro said that they appreciated the discussions from the previous day and were looking forward to more good discussions today.

Environmental Finance Center Network Update

Angela Buzard, President

Ms. Buzard began by saying that Dan Nees will be the next president of the EFC. The Network is adding new EFC partners:

Region 5 – Michigan Technological University: Tim Colling said that the focus of the Michigan Tech University center is on environmental infrastructure. Mr. Colling said that his research focuses on environmental and civil infrastructure asset management with a focus on GIS in management systems.

Region 9 – California State University, Sacramento: Ramzi Mahmood runs the Office of Water Programs (OWP). Mr. Mahmood's office is the largest developer and publisher of in-home study training materials in the nation for operators and managers of water and wastewater treatment plants, collection systems, and distribution systems. OWP has an applied research group focusing on stormwater management, effectiveness of best management practices (BMP), water quality, watershed planning, Low Impact Development (LID), data analysis, and development of GIS-based tools.

Region 10 – Rural Community Assistance Corporation (RCAC): Heather Cannon said that RCAC is partnering with Eastern Washington University's Urban and Regional Planning Program in Spokane. RCAC has its own loan program and is a certified community lender. Eastern Washington University also has the Summer Tribal Planning Institute. RCAC's focus will be on adaptable, sustainable, reliable communities that are well-financed, as well as bringing traditional knowledge into the financial decision-making process.

Ms. Buzard gave a broad overview of the EFC Network and outlined some ongoing projects. Ms. Himmelberger talked about the EFCN's collaborative small systems grant program. EPA funds the small systems project. The EFCs have been doing the managerial and financial portion of the project. The project delivers a lot of popular webinars and spends a lot of time working with small utilities on energy management through workshops. Each system gets a free energy audit so that they can get a sense of what is happening in their system.

One example of successful technical assistance was in Lowcountry Regional Water System in South Carolina. This was a set of five different systems that were consolidated to create a regional water system. In the process of creating a new system they needed to reconcile five different rate structures. The EFCs helped the systems create a new rate structure and examine affordability issues.

Another example is the Yarnell Water Improvement Association in Arizona. A fire in 2013 destroyed 100 homes and wreaked havoc on the community. As part of restoring the water system, they wanted assistance in rate setting, financial planning, and capital improvement planning. The EFCs helped design a rate structure for the system that will increase revenue while considering affordability issues. The EFCs also advised Yarnell on how to make a rate case to the Arizona Corporation Commission.

Ms. Himmelberger said that during workshops, the funders are invited to come and speak about what funding sources are available and make time available for systems to connect with the funders. Over the years, the project has developed a database with over 30,000 systems. Ms. Himmelberger said they try to use any method they can to let systems know when there are going to be workshops. Ms. Buzard said that EFCN partners with AWWA (American Water Works Association) and all of their state chapters.

Mr. Khris Dodson, Associate Director of the Syracuse EFC, presented the trash free waters stakeholder partnership. This project is focused on looking at the nexus of trash and water. The purpose is to strengthen and develop regional marine debris protection efforts. Through the actions of public, private, and nonprofit stakeholders, the goal of the project is to develop strategy for aquatic trash prevention and reduction initiatives. In EPA Region 2 there will be two partnerships: one in New Jersey and New York and one in Puerto Rico. The project organized ten stakeholder groups, each focusing on a particular floatable (microbeads, boxes, Styrofoam, etc.). Reducing land-based water pollution is the main goal of the project. There is great buy-in from the state of New York. The DEP (Department of Environmental Protection) in New Jersey is involved but their buy-in is not as strong as New York's. The project is very popular in Puerto Rico. Hopefully the project can be replicated in other parts of the country.

Dan Nees from the Maryland EFC said the financing issue that has everybody "wrapped around the axle" is stormwater and how to pay for stormwater management. The estimate to achieve the EPA TMDL (total maximum daily load) requirements in Maryland is \$7 billion. The goal of the Municipal Online Stormwater Training Center (MOST Center) is to bridge the gap in technical and financial resources by delivering free, self-paced training to municipalities via the web. The program has a \$1.5 million commitment for five years from the EPA, the Chesapeake Bay Program, and the National Fish and Wildlife Foundation. Right now the goal is for the center to go live on March 1st. The next step in the process is to create a business plan to make the training center a self-sustaining program. Ms. Throwe asked where Mr. Nees sees the new website – the clearinghouse from EPA – fitting into the MOST tool. Mr. Nees said that the tools are complementary and hopefully both sites could point toward each other.

Martha Sheils from Region I said that their region's program areas reflect the most imminent problems of the Northeast, which are increasing sea level rise and severe storm events. The New England EFC

developed the COAST (Coastal Adaptation to Sea Level Rise) tool that assesses the economic damages to communities from projected sea level rise and storm surge. Region I has developed a process in which medium and small communities know where to start their process and sift through the many tools and guidelines for them in order to help them approach climate adaptation. Region I is partnering with the University of Maryland on the MOST program. Another program that the Region is hoping to roll out in the next few years is the Waste Reduction and Composting in Schools program. It is a pilot program designed to help K-12 schools set up waste separation stations. The program is financed by an EPA Healthy Communities grant.

Ms. Buzard presented the details of a program that Kansas has on energy efficiency. The Kansas EFC has done 28 energy assessments at wastewater treatment plants in Kansas. Energy usage varies between plants with similar treatment and processes from 2,500 to 11,600 kWh/million gallons. Plants on the upper echelon have a lot of room to introduce cost saving. One plant in Halstead, Kansas was able to reduce its energy use by 35% and save 56,000 kWh annually. That translated into a yearly savings of \$4,480.

Lauren Heberle, Director of the Environmental Finance Center at the University of Louisville gave a brief presentation. One project the center is working on is an organics recovery compendium for Region IV. At the end of March, the EFC will have a toolkit that will layout the parameters for the size of things and technologies behind the kinds of recovery systems that need to be set in place, from the very simple to the more complex. Ms. Heberle said this project also ties into an international commitment to reduce food waste by 50% in the US. The EFC also does webinars and is involved with HUD sustainable communities' capacity building program where the EFC's primary job was to help grantees integrate water infrastructure into their regional planning processes. The EFC's big project going forward is working with the EPA Brownfields program by using a (k)(6) research grant under the research and technical assistance program to create a community benefits assessment toolkit for Brownfields.

Discussion

Mr. Mark Kim said, "what a remarkable set of presentations," and wondered how all of the EFC projects could be scaled up. Ms. Buzard said that the EFCs try to collaborate amongst themselves and try to spread some of the projects to other regions. There are partnerships with AWWA and WEF (Water Environment Federation) to expand out the leveraging of collaborative projects. Ms. Himmelberger said that she has been getting more involved with AWWA work groups – so the trend has been to look more toward partnerships to reach all of the water utilities across the country.

Work Group Report Out: Public-Private Partnerships for Water Infrastructure Projects

Lisa Daniel and Richard Weiss

The work group's charge was to address how the WIRFC could best support communities interested in exploring public-private partnerships (P3) for their water infrastructure projects. Mr. Weiss said that the

work group spent its time coming up with tools that will help communities navigate some of the policy impediments. The University of North Carolina has begun compiling some P3 case studies and this should be viewed as a starting point. The work group will be providing feedback on those case studies and review the draft report.

Ms. Daniel said that every P3 that has been done has been different. There is no template for creating a P3. Getting specific about technical aspects and lessons learned about EPA P3 engagements would be helpful in offering future advice to communities. Primer material for establishing P3s should address what the P3 is attempting to solve: what the process is, what the policies and procedures are, maximizing clarity, and ways to engage the public and adopt consensus? What can the WIRFC be a clearinghouse of in terms of information repositories (lessons learned, case studies, etc.)? How does one establish steps for forming a P3 so that risks are mitigated? The work group wants to provide suggestions for content for the primer.

Discussion

Mr. Crooks said that it would really help for the Board if the WIRFC could articulate its objectives a little bit more clearly. Mr. Crooks reminded the Board that, “anybody with an Internet connection can find more information than you can possibly process about P3s.” Despite the readily available information on P3s in the public domain, the work that Jeff Hughes is doing to provide an independent interpretation to some of the case studies is valuable. Mr. Crooks said that the folks at Federal Highways have invested a lot of money in primers, tools, P3 toolkits, and value-for-money analytical platforms that are available on their website. Ms. Ducharme added that in her experience from a community and local government perspective, one of the biggest issues is that local governments often do not know how to cut a decent deal for themselves. There are a series of questions that local governments need to ask themselves prior to cementing a P3.

Mr. Hughes said that the key deliverables are the independent financial profiles (case studies). There will be a total of 12 case studies finished by the end of February. The other deliverable is an Excel cost-benefit model. Ms. Daniel said a next step would be to hear back from the client. Mr. Gebhardt added that there is a lot of interest in the P3 question and that P3 is part of a nationwide solution on the question of the infrastructure deficiency. Right now WIRFC is on a learning curve. The Center does not know precisely what it is asking for. At the end of the day, the WIRFC should be an impartial participant in the conversation and act to add value in an area that is still developing. P3 is not for everybody. Larger more sophisticated municipalities are going to have a better shot of extracting value from P3s. A P3 expert is being added to the WIRFC staff. Ms. Daniel concluded by saying that she understood the dilemma and the confusion out there and that EFAB can help end the nebulousness.

Work Group Report Out: Financing Stormwater and Green Infrastructure Programs

Mathilde McLean-Crosby and Joanne Throwe

The work group's charge with regard to financing stormwater and green infrastructure programs was to look at what sources of revenue are out there, outline the steps municipalities can take, and see how WIRFC can help with some of these steps. Ms. Throwe talked about some of the barriers to financing these programs. Local governments have a difficult time getting buy-in from elected officials. Legal hurdles are another barrier. These barriers include the legality of putting a funding mechanism in place to complete a project. Local governments do not want to be consumed with legal battles over dedicated funding mechanisms. Geographic issues can be an issue with communities that span rural/suburban/urban areas. Equity and affordability concerns can vex local governments that are small to medium sized. Overcoming a lack of information and awareness around stormwater is another challenge. What activities do local governments need to consider in surmounting these barriers? The way to begin is by identifying the costs of stormwater projects, and also understanding the level of service that a community requires.

Things that the Center can do to help communities include providing fact sheets, financial worksheets, templates, guidebooks, and asset management training for stormwater. There is often an overlap of O&M costs that are not separated out for stormwater. The Center can help communities evaluate their options. Hosting more webinars, reaching out among various partners, and actively giving assistance could be things that the WIRFC can start doing. Ms. Throwe said that the question of "who benefits" needs to be better analyzed so that collaboration between nonprofits and municipalities can be better promoted.

Some other ideas on assisting communities with developing stormwater strategies:

- Providing technology like GIS and other mapping techniques to communities through partnerships with universities
- Billing logistics case studies on billing logistics
- Communicating with stakeholders

Discussion

Ms. Grodnik-Nagle said that the work group reports should include a note that the reports are strategy documents for the WIRFC. Ms. Massey agreed. Ms. Himmelberger noted that there needs to be a standard nomenclature for WIRFC (is it "WIRFC" or "the Center" or both). Ms. Throwe said that the work group report will be edited to include a mention of climate change. Ms. Massey asked Mr. Gebhardt if the work group reports were hitting the mark. Mr. Gebhardt said that all of the reports were hitting the mark and that there was a lot to digest.

Work Group Report Out: Household Affordability Challenges in the Water Sector

Tom Liu and Rick Giardina

The work group's charge was to identify ways that the Center can assist local governments with affordability challenges in the implementation of their water infrastructure projects with a particular emphasis on addressing the challenges of household affordability. Mr. Liu said that EPA is working on a research report titled the Water System Rate Assistance Program Research Report. The purpose of the report was to compile information regarding the various water and wastewater systems that have already implemented affordability or rate assistance programs.

The work group had four major recommendations:

- The US EPA/WIRFC should add additional survey questions to its Water System Rate Assistance Program Research Report. Mr. Liu said that the work group emphasized three areas to help make EPA's ongoing research in the area of affordability more useful: 1) How are affordability decisions made; 2) What the funding sources are; and, 3) How success is measured. Measuring success has to include identifying those most in need and getting them to participate in affordability programs.
- The EPA/WIRFC should serve in a facilitation function to encourage partnerships with states and utilities by acting as a clearinghouse or a central source for affordability program information.
- The EPA/WIRFC should serve as the central source for affordability information from the EFCs and other interest groups like the AWWA or WEF.
- The EPA/WIRFC should compile and evaluate the development and funding of affordability programs in the electric and natural gas industry. Looking into the experience of other industries can shed light on the other recommendations.

Mr. Liu cautioned that the case studies are not the solution; they are simply examples of what has worked in certain areas. Ms. McLean-Crosby said that there are two ways that the WIRFC can look at the federal Home Energy Assistance Program (HEAP): 1) to use it as a model to provide a similar national program for water and wastewater costs, and, 2) there are utilities that leverage their local HEAP list and the administrative process that has gone into creating that list to administer their own affordability programs. Ms. Himmelberger noted that a lot of communities do not think deeply about how to define success. WIRFC could share the process of how communities come to their own definitions of success. Looking at the question of how the vulnerable population changes as rates go up and down would be worthwhile.

Ms. Grodnik-Nagle raised the point of conservation and demand-side management and using less. Ms. Massey added that there is a lot more money put into the federal weatherization program than into LIHEAP (Low Income Home Energy Assistance Program). Ms. Surgeon said that in house-to-house surveys, it is the elderly who pay in small systems – doing homework on who the actual vulnerable

populations is critical. It would be good to move toward a national program where affordability data is aggregated and easy to access.

As far as next steps, Mr. Liu said that the work group will look at the EPA research report and incorporate Board comments into the work group report. The work group's report should be finalized by next month.

Work Group Report Out: Financing Operation and Maintenance Costs at Green Infrastructure Sites

Donna Ducharme and Leanne Tobias

The work group's charge was to focus on how WIRFC can best support communities to develop dedicated sources of revenue for stormwater and green infrastructure programs. Ms. Ducharme said that the work group report looks at what green infrastructure is and moves into laying out why there is a need for financing green infrastructure. The report also discusses 13 to 14 financing mechanisms with examples and descriptions. There is a funding matrix in the report that lays out the tools and explains the pros and cons of each and the resources. The report goes on to talk about selected case studies and selected federal grants.

The work group agrees with using the matrix as a basis for the executive summary. A couple of paragraphs would be wrapped around the funding matrix and then the matrix along with the commentary paragraphs could be used as a standalone document. The matrix could be altered to help it function as an executive summary. Ms. Ducharme said that the group talked about reordering the mechanisms to create some categories (e.g. publicly funded vs. privately funded) to help people sift through the financing mechanisms. There is also a set of capacity building recommendations which are credit enhancements and environmental insurance. And there is a category of partnerships which includes P3 and social enterprises. Ms. Ducharme said that a table of contents will be added to the document. There is an appendix with some cases studies which will be integrated into the report as sidebars. Mr. Gebhardt said that after reading the work group's report, he felt like a client for the report.

Mr. Hughes said that the report will be required reading for the students in his applied environmental finance course.

New Projects

Jim Gebhardt, Director, Water Infrastructure Resiliency and Finance Center

Mr. Gebhardt began by saying that there were only two charges. He suggested that the client is the Office of Wastewater Management in both cases, although drinking water comes into play on the second charge. Mr. Gebhardt said it would be good if EFAB's influence reached more offices within EPA. Ms. Throwe asked if there is a way to go outside the charges and ask the EFCs hear from them and get EPA to back the charges. Mr. Gebhardt said that would be fine. Mr. Shapiro said that some of EPA's partner offices often don't understand that they have a financing-related issue because it is not within

their construct of looking at certain challenges. The EFCs are a good source of outside perspective for the EPA.

Ms. Throwe asked if there were any ideas for new charges before discussing the two charges that Mr. Gebhardt had in mind. Ms. Throwe raised the issue of nutrient trading and Ms. Massey said that nutrient trading was something that her state was thinking about as well. Mr. Nees said that his watershed has been thinking about water quality trading for 25-30 years and they still do not know what all the issues are. Mr. Liu said that EPA has been involved in nutrient trading and that Connecticut has a program that has been around a long time and that the folks from Maryland and Missouri might want to check-in with the folks in Connecticut on the issue of nutrient trading.

Mr. Hughes said that in the environmental finance world, the recycling markets have fallen apart. Looking at the economic drivers of recycling is a hot topic. The old finance model was built on recycling revenues at a certain level. Private companies are getting out of the recycling business or they are asking to renegotiate contracts. One of the big topics in solid waste right now is packaging and the supply stream of packaging.

Ms. Grodnik-Nagle said that financing issues related to the clean power plan is a hot and urgent topic. HUD (Housing and Urban Development) is in the midst of announcing a billion dollars that they are going to be distributing to jurisdictions throughout the country to rebuild after natural disasters. Many of those rebuilding projects will be water-related projects. Ms. Daniel said that with gas prices as low as they are, there might be some negative air-impact related to people buying more and bigger cars. More thought needs to be given about how to offset this possible negative air-impact by helping to finance bike lanes, green lines, Uber/public transit. Mr. Gebhardt said that a short written articulation of the new charges will be helpful for the Agency.

The new project charges for EFAB are the following: 1) Identify existing and prospective funding strategies that better address the challenge of funding the repair or replacement of failing decentralized wastewater systems; and, 2) Identify strategies and guidance for better promoting and developing funding sources for predevelopment capital. Ms. Massey said that decentralized systems are a huge issue for her state. Mr. Knight added that there is a financing mechanism called property assessed clean energy that relies on liens placed on property owners for covering the cost of the property improvements. Stephanie Von Feck from EPA said that there might be a partnering entity in local county health departments that have the charge of permitting and enforcing improvements.

Mr. Shapiro said that in many places, particularly in the Chesapeake Bay watershed, there is pressure to go beyond the basic septic systems. This pressure may drive communities to small, clustered package treatment systems. Mr. Walker noted that county agencies do not want to be banks. Texas is doing a lot of transitioning decentralized systems to centralized systems and the projects are very expensive. Ms. Surgeon said that Craig Lindell from Aquapoint has been doing a lot of work around decentralization and she will reach out to him and try to frame something. Ms. Himmelberger said there is a big chunk of

money going from the EPA rural water program for decentralized systems. It would be good to know what the EPA has found out about this issue.

Mr. Gebhardt said that charge number two is linked closely to the report out on predevelopment. He wondered if there was a social impact opportunity for SRF. Is this an idea in search of a problem or is “there a there there?” There are a lot of NGOs that are active in the predevelopment space and it is worthwhile to think about how to partner with those NGOs and learn from them. SRF is being used as a financial intermediary to start to drive predevelopment investment.

Ms. McLean-Crosby asked if Mr. Gebhardt was talking about investments like the one that the New York State Environmental Facilities Corporation (NYSEFC) made with the Nature Conservancy for its debt service reserve fund or talking about providing a loan. Mr. Gebhardt said that NYSEFC funded one of its pledged reserves for a New York City transaction by using an investment with the Nature Conservancy. The Nature Conservancy had purchased land in New York State, and they were looking for financing to takeout prior financing from a private party; to accomplish this, they became the source of the reserve fund investment for an SRF financing, from which the investment returns that paid interest subsidies to New York City Water. Charge two is more closely linked to what the SRF does because the WIRFC is looking for more seed capital to drive projects into the SRF pipeline.

Mr. Gebhardt said that how predevelopment is defined depends on the views of the individual. Mr. Walker said that in Texas those projects that have a plan before asking for funding are more successful than those that do not have a good handle on what their funding needs will be. Ms. Himmelberger said there is more of an issue than “is there money available” to do predevelopment because predevelopment first needs to be defined. Many people do not understand what predevelopment is and do not take it seriously. Mr. Liu said that Iowa encouraged the SRF to come up with a zero percent funding design loan for a limited time period. That got the program up and running and increased demand for loans.

Ms. Massey said that there were two parts to the charge: 1) The research part 2) What can the SRF do to better use this? Where does the data lie? Mr. Gebhardt said that he did not know if the folks on the inside have granularity on this level of investment. The states know where the money is coming from but is the funding sufficient? Ms. Wasinger said two great questions to ask SRFs are: 1) are you funding predevelopment cost/how predevelopment defined? and, 2) is there a demand for SRF dollars? Ms. Ducharme asked if municipalities are doing the predevelopment they need to do to get the money or are they doing the predevelopment they need to do to make good decisions? There are communities that are reluctant to take SRF money because they do not want to do construction, take on debt service, raise rates, etc.

Mr. Shapiro said that there was a “gap in information that people are looking for in terms of what the state of the current world looks like.” Perhaps the Board could do some work with CIFA (Council of Infrastructure Financing Authorities) to fill some of the information gap. EPA needs to go back and think

about what sources of information there are that would establish some basic background information that could then be provided to the Board.

No one signed up for public comment.

Next Steps and Adjournment:

Ms. Massey said that all of the reports should be wrapped up within two months. In terms of quantity and timeliness of work product, the Board has never shone through quite like this before.

The meeting was adjourned at 2:59 pm.