

U.S. Environmental Protection Agency  
Environmental Financial Advisory Board

# Public Meeting Minutes October 15-16, 2024

*Location: Tempe, Arizona and  
Virtual Platform*

Respectfully submitted by  
Edward H. Chu, EPA Designated Federal Officer

Certified as accurate by  
Kerry E. O'Neill, EFAB Chair



NOTE AND DISCLAIMER: The minutes that follow reflect a summary of remarks and conversation during the meeting. Such ideas, suggestions, and deliberations do not necessarily reflect consensus advice from the Board. Formal advice and recommendations may be found in the final advisory reports or letters prepared and transmitted to the agency following public meetings. Moreover, the Board advises that additional information sources be consulted in cases where any concern may exist about statistics or any other information contained within the minutes.

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## Purpose

The U.S. Environmental Protection Agency (EPA) Financial Advisory Board (EFAB or Board) is an advisory committee chartered under the Federal Advisory Committee Act (FACA) to provide advice and recommendations to the EPA on creative approaches to funding environmental programs, projects, and activities. The purpose of the meeting is for the EFAB to discuss current advisory charges, provide updates on previous EFAB deliverables, and to learn more about the Administration's infrastructure investment opportunities. This meeting was conducted in a hybrid format of in-person and virtual via webcast.

The meeting was announced in the *Federal Register*; see <https://www.govinfo.gov/content/pkg/FR-2024-09-27/pdf/2024-22170.pdf>.

To view the agenda, see <https://www.epa.gov/system/files/documents/2024-10/efab-october-2024-meeting-agenda-draft.pdf>.

# Day One – October 15, 2024

## Welcome, Member Roll Call, Review of Agenda, and Recognize New Members

**Ed Chu** | EPA Designated Federal Officer

**Kerry O'Neill** | EFAB Chair

### Welcome

Ed Chu gavelled the meeting to start and welcomed participants to Arizona State University (ASU) in Tempe, Arizona. He said that per the *Federal Register* notice (FRN), the Board is accepting oral statements during the meeting. He stated that there are two public oral comments scheduled for Day One, and one public oral comment scheduled for Day Two. There was one written public comment submitted and posted on [the EPA's website](#). He explained how members of the public can request to address the Board during the meeting or submit written comments by emailing [efab@epa.gov](mailto:efab@epa.gov).

Kerry O'Neill welcomed participants to the meeting and conducted the roll call.

### Roll Call

Kerry O'Neill, present  
Courtney L. Black, present  
Steven J. Bonafonte, not present  
Angela Montoya Bricmont, present  
Matthew T. Brown, present  
Stacy Brown, present  
Albert Cho, present  
Janet Clements, present  
Lori Collins, present  
Zachary Davidson, not present  
Jeffrey R. Diehl, present  
Sonja B. Favors, not present  
Jodi French, present  
Phyllis R. Garcia, present  
Eric Hangen, not present  
Barry Hersh, present  
Craig A. Hrinkevich, present  
Uche C. Isiugo, present

Thomas Karol, not present  
George W. Kelly, present  
Gwendolyn Keyes Fleming, not present  
Cynthia Koehler, present  
Colleen Kokas, present  
Joanne V. Landau, present  
Sarah Margaret Lee, present  
Lawrence Lujan, not present  
MaryAnna H. Peavey, present  
Jenny Poreé, present  
Dennis A. Randolph, present  
Sanjiv Sinha, not present  
Aaron Smith, present  
Anna Smukowski, present  
Marilyn Waite, not present  
David L. Wegner, present  
Gwen Yamamoto Lau, not present

Kerry O'Neill welcomed new members, gave an overview of the Day One meeting agenda, and then began the water affordability workgroup discussion.

## Water Affordability Workgroup – Discussion

**Cynthia Koehler and Janet Clements** | Water Affordability Workgroup Co-chairs

Cynthia Koehler provided an overview that the Board accepted a charge from the EPA to address a variety of water affordability issues. She reported that the workgroup needed more time to finalize the

full report but has agreed to move forward with presenting the EFAB Water Affordability Executive Summary and Recommendations to the full Board for a vote in the interim.

Cynthia Koehler summarized that the Water Affordability charge was broken into five subparts:

1. **Capital Investments:** Explore alternative infrastructure investment choices that could be less financially burdensome on ratepayers.
2. **State Revolving Fund (SRF) Subsidies:** Research the flow of SRF funds for additional subsidization to ratepayers experiencing hardship due to rate increases needed to support capital projects.
3. **Rate Structure/Design:** Analyze options for rate structure/design to help households adversely affected by rate increases within the bounds of legal restrictions.
4. **Customer Assistance Program (CAP) Barriers:** Analyze common state and/or local legal barriers, including perceived barriers, to adoption of CAPs and other affordability measures, and provide recommendations for the EPA to address these.
5. **EPA Policy Development:** Provide recommendations for how the EPA can develop supportive policy for CAPs and provide leadership in guiding program implementation.

Cynthia Koehler stated that the report begins with a few contextual observations. She said that water, sewer, and stormwater services are paid for primarily at the local community level – affordability is a household-level problem, distinct from the cost of regulatory compliance for communities as a whole. She stated that about 4,300 utilities, or 9% of US utilities, serve 85% of the US population, including the majority of low-income households. She said that the affordability issues facing these utilities are of a different nature than the access and affordability issues facing the thousands of very small utilities serving primarily small, often isolated areas. She explained that the workgroup decided to focus primarily on the strategies appropriate for medium- to larger-sized utilities, while also flagging the need for a deep dive on the access and financial challenges facing those very small utilities. She shared that, for the purposes of this report, affordability is defined as “the ability of a customer to pay the water bill in full and on time without jeopardizing the customer’s ability to pay for other essential expenses.”

Cynthia Koehler explained that the workgroup developed an overarching affordability framework, which recognizes utilities can address affordability in various ways for their community and ratepayer needs. She reviewed the following elements of the affordability framework: 1) **Capital Investments**; 2) **Operations & Maintenance**; 3) **Federal/State Support**; 4) **Rate Structure Design**; and 5) **Customer Assistance Programs**.

Regarding the first element of the affordability framework, **Capital Investments**, Cynthia Koehler reviewed the workgroup’s recommendations and highlighted a case study of the California Pacific Institute, which estimates that “adopting proven technologies and practices could reduce urban water use in California by 2.0 million to 3.1 million acre-feet per year (AFY), or by 30% to 48%.” She added that several communities are investing at larger scale in green stormwater infrastructure (GSI) as a complement to gray stormwater management approaches. She said that the EPA has already recognized GSI can cost less than conventional gray infrastructure, provides green jobs, and reduces municipal water usage and cooling costs. She highlighted two case studies, Philadelphia’s Green City Clean Waters Program, where their GSI investments are outperforming expectations, and Milwaukee’s Green Streets Stormwater Management Program, which also represents a large investment in green infrastructure and is expected to save ratepayers more than \$40 million in infrastructure costs. She said that the workgroup also looked at source water protection as water quality infrastructure, where utilities like

Denver Water and Central Arkansas Water are investing to protect and enhance upstream forests and watershed lands to address water quality needs.

Albert Cho explained that there is increasing acceptance of the role that intelligent infrastructure (e.g., smart sewer sensors) plays in reducing the costs of project delivery. He said that the EPA has already identified it as an important opportunity to build more efficient and resilient systems at lower cost. He reported that the workgroup identified a few illustrative case studies that suggest that the application of intelligent infrastructure across water infrastructure could reduce the total capital demand by the water sector by 10% or more. He said that obstacles to adoption remain, including a lack of familiarity with these technologies and a lack of awareness of the potential public benefits. Albert Cho also highlighted the importance of regionalization of infrastructure as a potential lever for reducing capital investments that are required to meet community water and wastewater service needs. He explained that their research has identified significant potential reductions in total cost when communities work together to solve water challenges by sharing infrastructure at more efficient scales. He emphasized that regionalization remains one of the five major levers for capital efficiency.

Cynthia Koehler summarized the following recommendations regarding capital investment options:

1. Commission a study on relative costs of infrastructure investment options.
2. Identify a standardized approach to infrastructure life cycle benefits and cost assessment of water infrastructure alternatives.
3. Elevate tools for nature-based infrastructure benefits valuation.
4. Create a new EPA water affordability website page that integrates the EPA's current resources related to each component to the affordability framework.
5. Expand the EPA integrated planning guidance to help utilities meet drinking water, wastewater, and stormwater requirements.
6. Develop an affordability screen template that utilities can use as part of their capital investment decision making.
7. Develop a biennial publication of case study highlights related to non-traditional water infrastructure.
8. Create a distinct Performance and Innovation in the SRF Creating Environmental Success (PISCES) award for non-traditional water infrastructure.

Dennis Randolph reviewed the capital investments alternative delivery models. He said that there are many ways to deliver projects, but the most important factor is having a team of people that can understand the method being used and put it into place properly. He emphasized that communities are often left without technical leaders to implement project delivery systems. He described how some states also do not allow design/build systems and instead force a traditional design/bid/build system which does not foster long-lived projects. He said that building new leadership capabilities, potentially broadening the types of leaders that can lead project delivery systems into completion is critical, as well as addressing statutory constraints that limit the forms of project delivery systems used. He added that cost-effectiveness depends on how infrastructure projects are implemented. He said that challenges with conventional project delivery models include over-designing or overbuilding projects, using models that elevate lower up-front costs but are more costly over time due to high operations and maintenance, and misaligning incentives. He emphasized that they need to balance the lifespan of a project along with maintenance and operation.

Dennis Randolph reviewed the following recommendations regarding capital investment alternative delivery models:

1. Commission a project delivery strategies study.
2. Commission a study on legal barriers impacting water project delivery.
3. Develop best practices and recommendations on how utilities can best organize to have long-term capabilities needed to carry out water system capital improvement projects.
4. Initiate a series of studies to improve workforce development in the water sector.

Regarding the second element of the affordability framework, **Operations and Maintenance**, Dennis Randolph said that utility operations offer a further opportunity for lowering the cost of water services. He noted that the EPA has long recognized the importance of effective utility management practices (EUM), including asset management as a key operational tool for maximizing benefits and limiting life cycle cost. He reviewed the following recommendations regarding operational efficiency:

1. Highlight successful asset management programs that have resulted in significant cost savings.
2. Create an EPA water affordability website page with EPA's asset management and EUM resources as potential affordability strategies.
3. Incentivize asset management programs focused on maintaining utility fiscal health.

Regarding the third element of the affordability framework, **Federal/State Support**, MaryAnna Peavey explained that the EPA's two SRF programs represent the greatest level of federal financial support for local water infrastructure, primarily in the form of low interest (i.e., below market rate) loans. She said that Congress has directed both SRFs to provide "additional subsidization" – a portion of an SRF loan that does not need to be repaid – to utilities serving low-income populations; the additional subsidization is intended to defray all or part of an increase in household water bills necessary to repay the SRF loan. She explained that, under the Clean Water Act (CWA), additional subsidization can still be provided to SRF applicants that do *not* meet the CWA affordability criteria as long as specific metrics are met. She said that this provision could help more communities whose average income exceeds state thresholds for additional subsidization eligibility but contain substantial low-income populations that fall below those thresholds. She explained that there is no similar provision under the Safe Drinking Water Act (SDWA) as the "disadvantaged communities" definition directly impacts access to additional subsidy under SDWA.

Courtney Black reviewed the following recommendations regarding federal financial support:

1. Pilot a project that could be awarded additional subsidy for low-income utility rate payers.
2. Develop a guidance toolkit for clean water SRF (CWSRF) programs.
3. Continue to explore approaches for defining "disadvantaged communities" for the drinking water SRF (DWSRF).
4. Create an EPA water affordability website with affordability-related aspects of EPA's resources.

Regarding the fourth element of the affordability framework, **Rate Structure Design**, Janet Clements explained that setting rates consists of three key steps: 1) determining revenue requirements; 2) allocating costs across customer types; and 3) designing rates. She said that this traditional framework limits the type of costs that can be recovered through utility rates, which has implications for affordability. She also explained that requirements for rates are provided in state statutes and/or case law. She said that, while state statutes are mostly intended to ensure utilities adhere to cost-of-service requirements and safeguard against one class of customers cross-subsidizing others, they prevent utilities from providing different rates to low-income customers because that is seen as a violation of the cost-of-service principles and may be interpreted as "non-uniform" or "discriminatory." She said that the definition of utility services needs to include public health and affordability, which would allow

utilities to incorporate these considerations into their revenue requirement determinations. She suggested that a “common-to-all” cost allocation can distribute costs across all customer classes. She said that the water utility cost of service methodology could be expanded to explicitly include human health as a core utility function; this could result in significant benefits by providing a stronger legal basis for rate structures that improve affordability. She said that another way to think about expanding the cost-of-service framework is to quantify the costs associated with unaffordable water bills.

Janet Clements said that there are some options to enhance affordability through rate (e.g., lifeline rates, reduced fixed charges). She said that the jury is still out on income indexed rates, and there are alternative approaches to get around legal requirements (e.g., host community discounts) which can help in some communities, but do not provide sustainable solutions. She said that separately charging for stormwater can result in a more equitable rate structure.

Janet Clements reviewed the following recommendations regarding rate structure and design:

1. Issue a policy statement supporting the expansion of the cost-of-service framework to include public health and affordability.
2. Tie federal financing to affordability.
3. Provide examples of state statutes that can serve as models for rate guidance.
4. Provide enhanced technical assistance (TA) to utilities for rate development.
5. Commission studies to explore rate-related affordability issues.

Regarding the fifth element of the affordability framework, **Customer Assistance Programs (CAPs)**, Janet Clements explained that the reach and effectiveness of utility-led CAPs is still limited. She said that the EPA conducted a survey and found that approximately 30% of utilities had CAPs, and assistance does not always reach the neediest households. She explained that there are legal and rate funding barriers to whether CAPs can be funded with rate revenues, so CAPs often require special funding sources (e.g., customer donations) and/or additional funding streams. She said that there are also high administrative costs for utilities and high administrative burdens on low-income customers, which often leads to low participation. She explained that many low-income customers are “hard-to-reach” – 26% of households earning less than 150% of the federal poverty level (FPL) pay for water/sewer as part of their rent, and 80% of these are multi-family renters. She added that 18% of households indicate they “have no charge” for water or sewer, and urban areas have much higher percentages of hard-to-reach customers. Janet Clements pointed out that no state operates a permanent water CAP and there is currently no national level assistance program that directly addresses water affordability. She emphasized that a national level assistance program could overcome many of the local level barriers. Janet Clements reviewed the following recommendations regarding CAPs:

1. Offer planning grants to utilities to support development of CAPs.
2. Develop a best practice/case study compendium of successful local, utility-led CAPs.
3. Study costs of nonpayment/shutoffs to utilities to help make the business case for CAPs.
4. Conduct a study to explore alternative program pathways for providing a federal CAP.

Cynthia Koehler summarized the recommendations on policy development and program implementation into the following categories:

1. Comprehensive water affordability webpage
2. SRF additional subsidy pilot program
3. TA and planning grants



4. Incentives
5. Studies/Information Gaps – a total of 8 recommendations of studies
6. Policy, Guidance, and Elevation of Best Practices – a total of 10 distinct recommendations

Ed Chu thanked the water affordability workgroup for their presentation.

## **EPA Office of the Chief Financial Officer Update**

**Faisal Amin** | Chief Financial Officer

Ed Chu introduced Faisal Amin, the Chief Financial Officer of the EPA. He explained that Faisal Amin oversees EPA's budget formulation and implementation, as well as EPA's strategic planning and continuous improvement performance.

Faisal Amin shared that the EPA, along with the rest of the federal government, is operating under a continuing resolution through December 20, 2024. He shared that both the House and the Senate have already released draft bills for fiscal year (FY) 2025; the Senate bill funds the EPA at \$9.29 billion, the House bill funds the EPA at \$7.37 billion. He said that the two chambers will work to reconcile their bills and will likely land somewhere between the House and Senate figures. He shared that the EPA has already submitted its FY2026 budget proposal to the Office of Management and Budget (OMB) and is continuing to advocate for the submission.

Faisal Amin reported that the EPA continues to manage significant supplemental funding, including nearly \$50 billion from the Infrastructure Investment and Jobs Act (IIJA), also known as Bipartisan Infrastructure Law (BIL), and an additional \$41.5 billion from the Inflation Reduction Act (IRA). He stated that the EPA has already obligated \$29.3 billion (78%) of the funds in the first three years of IIJA, as well as \$19.4 billion (78%) for the SRFs through the end of FY2024. He stated that the EPA has already obligated \$29.3 billion (70%) of IRA funds, which includes \$27 billion for the Greenhouse Gas Reduction Fund (GGRF): \$14 billion for the National Clean Investment Fund (NCIF), \$6 billion for the Clean Communities Investment Accelerator (CCIA), and \$7 billion for the Solar for All program. He said that the IRA also provided the EPA with \$3 billion to support zero emission port equipment and infrastructure, as well as climate and air quality planning at U.S. ports. The EPA announced two notices of funding opportunities (the Zero Emission Technology Deployment Competition and the Climate and Air Quality Planning Competition) and anticipates announcing the selectees and awarding the grants by December. He said that the EPA announced 34 recipients that were selected to receive \$300 million in Climate Pollution Reduction Grants (CPRG) for Tribes and territories, complementing the 25 recipients that received over \$4.3 billion under the CPRG Implementation Grants General Competition.

Faisal Amin reported that, during FY2022-2024, Congress appropriated \$3.7 billion for 2,220 projects that are identified as either community project funding in the House or Congressionally directed spending in the Senate. He said that Congress has awarded 483 projects or 99% of the grants that have a completed application, totaling \$600 million. He said that they are continuing to work with communities to get the required information and commit the remaining funding. He said that they are committed to achieving timely, transparent, and high-quality implementation of these projects. He said that they will continue to make bold actions, and infrastructure will remain a top priority. He thanked the Board for their time and said he looked forward to the continued input.

Kerry O'Neill opened the floor for questions from the Board.

MaryAnna Peavey asked Faisal Amin how the EPA plans to address the sunset of the BIL funding.

Faisal Amin said that the EPA has responded to these concerns by developing a glide path as they approach the end of IJIA implementation. He said that they are using tools, such as contracting and term hires, and they anticipate they will be able to absorb some of the new hires as they experience staff attrition generally. He reiterated that they have a multi-year glide path planned to end the IJIA implementation phase.

Cynthia Koehler asked whether there was a plan for addressing the earmarks on the SRF programs. She explained that the SRF programs have expressed concerns around their budgets for communities that do not have political access to earmarks.

Faisal Amin confirmed that earmarked funding comes from SRF budgets. He said that states are generally not in favor of Congressionally directed spending and the EPA's FY2024 administrative spending allowance report to Congress includes language that supports delegating funds to the states. He said that, additionally, some communities have found they can directly reach out to a member of Congress to receive priority for their water infrastructure projects. He said that they are continuing to provide a realistic perspective to Capitol Hill on how states and communities view earmarks, while also recognizing that their job is to carry out the directions from Congress.

Albert Cho asked for more information about funding made available through BIL and concern about the pace of the disbursements and implementation of funding. He asked Faisal Amin to share key performance indicators about utilization of the funding and movement of projects through the pipeline.

Faisal Amin responded that the EPA is waiting to publish an Investing in America report with obligation and expenditure data on the individual programs. He said that this report shows that the EPA is at the front end of federal agencies that have received IJIA appropriations and been able implement that funding. He said that, regardless of the election, the current plan is to do what Congress intended, which is to continue to accelerate the implementation of the programs.

David Wegner asked if the EPA has experienced any challenges in making 40% or more of the funding available to disenfranchised communities, who might not have the technical capacity or workforce to access that funding.

Faisal Amin responded that the Investing in America report shows that the EPA has provided closer to 60% of the funds and TA to disadvantaged communities. He said that the EPA has been a leader in the federal government in this area, as they have been focused on this issue since the beginning. He concluded by saying that there is good news to share and there is still a lot of work to be done.

Ed Chu thanked Faisal Amin for joining.

Faisal Amin said that the Investing in America report would be shared with EFAB via email. He expressed appreciation for all the questions and said it is important that they hold the agency accountable.

## **Water Reuse Workgroup – Discussion**

**Angela Montoya Bricmont** | Water Reuse Workgroup Chair

**Justin Mattingly** | Water Reuse Program, U.S. EPA Office of Water

Angela Montoya Bricmont introduced Sharon Nappier and Justin Mattingly, from the Water Reuse Program in the EPA's Office of Water, as EFAB's EPA clients. She thanked the workgroup members for their work on the committee, as well as Tara Johnson, Ed Chu, and Kerry O'Neill.

Angela Montoya Bricmont explained that there were two main objectives of the charge: 1) evaluate the public benefit of a potential investment tax credit for privately owned industrial facilities; and 2) evaluate optimal investment tax incentive to encourage innovation.

Regarding the first objective, Angela Montoya Bricmont said the workgroup found that a strictly financial analyses of reuse does not include the full value of the benefits of reuse. She said that a triple bottom line or a benefit-cost analysis can be used to evaluate projects like reuse, as well as using broad benefit and cost categories that can apply to reuse. Angela Montoya Bricmont reviewed that, based on the workgroup's feedback and research, the workgroup developed the following recommendations for measuring public benefits:

- Reuse provides significant benefits, especially in areas considered supply-constrained (e.g., supply that cannot meet increasing demand) or wet and discharge-constrained.
- Use a triple bottom line or benefit-cost analysis that reflects broad benefit and cost categories that apply to reuse.
- Use metrics that consider a variety of perspectives and an economic framework that provides a comprehensive model to measure the public benefits of industrial reuse.
- Update the 2006 Stratus Research on measuring costs and benefits of reuse.

Angela Montoya Bricmont said that they gathered feedback from utilities and industry on externalities and unintended consequences during the workgroup's listening sessions. She emphasized that these comments should be taken into consideration if there was a tax incentive. She added that they also identified potential research that could be gathered to mitigate the concerns that they heard during the listening sessions.

Regarding the second objective, Angela Montoya Bricmont explained that the workgroup was not able to fully develop a response for this objective, though they are able to provide the comments from the listening session about how a tax incentive should be structured. She said, in addition to the comments, the workgroup has several recommendations, regardless of how the tax incentive is structured. She reviewed the following recommendations for developing an industrial tax credit:

- Incentives should aim to attract a diverse range of participants (e.g., large-scale commercial users, such as stadiums, ballparks, and resorts).
- Incentives should be tailored to the challenge(s) being addressed (e.g., water scarcity versus water quality concerns).
- The drivers for municipally recycled water are different from onsite generated water reuse, so the incentives need to be different. Benefits to water supply may be easier to track and justify financially.
- The additional time it takes for permitting, complex local rules, and a longer investment horizon are gaps to overcome with the credit.
- Tax incentives can support both centralized and decentralized reuse approaches, benefiting customers who pay for multiple water-related services.

She added that municipal utilities have unique economic benefits and costs that should also be considered in an incentive, which include:

- Utilities typically price recycled water below treated drinking water and/or may have reduced impact fees.
- Municipal utilities may need to retain capacity for large users in emergencies.
- Utilities may experience a loss of revenue and/or the cost of treating more concentrated discharge.
- Utilities that provide drinking and recycled water but not wastewater face limitations in realizing the full benefits of reuse.

Angela Montoya Bricmont said that the workgroup has worked with Kerry O'Neill and the EPA client to consider a follow-up charge that would go further into structuring of the credit.

Justin Mattingly said that the charge presented to EFAB was based on a request from Congress. He expressed appreciation that the workgroup took on the charge and said that their work was very helpful to identify the different considerations for designing an optimal tax credit as well.

George Kelly thanked Angela Montoya Bricmont and Janet Clements for leading the charge. He said that, in juxtaposition with water affordability concerns, industry would not necessarily be interested in pursuing water reuse initiatives because the price of water is too low. He also noted that water reuse implicates water rights issues and so is sometimes prohibited, especially in water-scarce areas like the West. He suggested creating a tax structure like the IRA energy tax credit structure, which has an elect-to-pay credit program that allows credits to go to municipalities to pursue initiatives. He also reiterated that there is a difference between wastewater and drinking water. He described an example of a wastewater facility maximizing their revenue by reusing their water and selling it to cooling centers, which then sent it back to the wastewater facility to be treated.

Kerry O'Neill explained that the Board did not feel they had the right expertise to take on the water reuse tax incentive design question, which was why the second objective was less developed.

Ed Chu added that usually there is adequate expertise on the Board; however, in cases where there is not, they would discuss options with the client for providing additional technical experts or creating a follow-up charge.

Kerry O'Neill said that the vote is scheduled for Day Two so that new members can touch base on materials and follow-up on discussions before voting. She clarified that the vote would not include the design of the water reuse tax credit which was discussed with the client.

Justin Mattingly confirmed that the deliverable is satisfactory for the current charge as their priority is to understand the potential benefits of a water reuse tax credit. He explained that outlining the considerations for a tax credit is sufficient, since it would be implemented by the Internal Revenue Service and other agencies if it was passed by Congress.

## **EFAB Letter: Helping Climate Capital Land in Underserved Communities**

**Hieu Le** | Senior Advisor for Innovation, U.S. EPA Office of the Administrator

**Ted Toon** | Senior Advisor, U.S. EPA Office of the Greenhouse Gas Reduction Fund

**Alison Cassady** | Deputy Assistant Administrator for Strategic Initiatives, U.S. EPA Office of Environmental Justice and External Civil Rights

**Jenn Brown** | Special Advisor for Implementation, U.S. EPA Office of Air Quality Planning and Standards

Ed Chu said that EFAB issued a [letter on EPA TA resources for the climate related programs](#), in light of the unprecedented funding through IIJA and IRA. He explained that Hieu Le will be providing an update in response to that letter.

Hieu Le introduced himself as the Senior Advisor for Innovation to the EPA's Chief of Staff, Dan Utech. He introduced the other members from the team, including Ted Toon, Senior Advisor within the Office of Greenhouse Gas Reduction Fund (OGGRF), Jenn Brown, Special Advisor within the Office of Air and Radiation, and Alison Cassady, Deputy Assistant Administrator for Strategic Initiatives within the Office of Environmental Justice and External Civil Rights (OEJECR). He said that a top priority for the Office of the Administrator is the implementation of the IIJA (i.e., BIL) and IRA programs. He reported that they obligated over \$60 billion (77%) in FY2022-2024 in BIL and IRA funding and are on track to obligate almost \$70 billion (90%) in total. He said that over 60% of the funding is directed to disadvantaged communities, exceeding the President's Justice40 target. He also reported that the GGRF team was able to finalize the award agreements and obligated \$27 billion dollars last month. He said that several grantees have announced the first ever investments made under GGRF, including two of the NCIF grantees, Climate United and the Coalition for Green Capital.

Hieu Le reported that on July 22, they announced the selected recipients of over \$4.3 billion from the CPRG. He said that the 25 selected applications will fund projects in 30 states that target greenhouse gas (GHG) pollution reduction. He reported that they announced an additional \$300 million for Tribes and U.S. territories, where they selected 34 applications to fund projects proposed by 33 Tribal recipients and the municipality of Saipan in the Commonwealth of the Northern Mariana Islands. He said that the CPRG team is working with selected grantees to finalize award agreements.

Hieu Le reported that on July 25, they announced more than \$325 million in funding from the Community Change Grants Program (CCGP) for 21 selected applications to help disadvantaged communities tackle environmental and climate justice challenges. He said the funding announcement is just the first tranche of \$2 billion from the program that was designed based on community input toward grants on a rolling basis.

Hieu Le expressed appreciation to EFAB for the identification of gaps in their programs and recommendations proposed in the letter. He said that they will take a coordinated approach across the programs to act on the recommendations and will provide a formal response by the Spring meeting.

Hieu Le agreed that the CPRG program offers an incredible opportunity to bring together states, Tribes, and local communities to learn from one another in all aspects of climate action planning. He said that they hosted a two and a half day in-person workshop in Minneapolis in early September, where interactions with grantees were one of the most valuable parts of the event. He said that they are actively working on ways to organize and share information about additional funding opportunities through the CPRG website and the newsletter so that all grantees, non-grantees, states, local government, and Tribal government entities and communities can access up-to-date information.

Regarding OEJECR, Hieu Le agreed that the EPA intends for the Thriving Communities Technical Assistance Centers (TCTACs) to be helpful navigators for underserved communities. He said that the National TCTAC Institute for Sustainable Communities has created [a helpful tool for communities to find relevant funding opportunities across the federal government](#) and they intend to expand this tool to include non-federal funding opportunities as well. He also agreed that there is a gap in early project level funding since the statute for CCGP only allows the EPA to provide funding to communities for a maximum of three years, so the program is focused on shovel-ready projects. He said that OEJECR

created the Environmental Justice Thriving Communities Grantmaking Program to provide grants for projects that are in the earlier stages. In terms of tracking the effectiveness of TA programs, Hieu Le explained that the CCGP tracks data on communities' experience in the TA program and they intend to evaluate the relative effectiveness of applications that receive TA compared to the effectiveness of the applications that did not. He said that they will share the EFAB letter with the TCTACs and the grant makers and look for more opportunities to implement EFAB's recommendations.

Regarding GGRF, Hieu Le said that all three GGRF programs include TA, community outreach and engagement, and market-building components to build the capacity of individuals, households, small businesses, and community organizations to assess projects and to apply for funding or financing under the appropriate GGRF program. He reported that all 68 grantees under all three GGRF programs have committed to the outreach necessary to reach underserved communities and their applications were partially evaluated on these plans. He said that they will also have robust reporting that will allow the EPA, EFAB, and the public to hold the program and the grantees accountable for achieving these objectives. Hieu Le concluded by thanking EFAB again for inviting him and his colleagues to speak.

Kerry O'Neill thanked Hieu Le for the thoughtful response to the letter and for providing an update on the actions taken in response to the letter. She asked if there has been any special or cross-cutting focus on rural communities.

Ted Toon responded that there are several ways they are reaching rural communities in the GGRF. Firstly, he explained that there is often a correlation between disadvantaged communities and rural communities; since 70% of the GGRF is targeted at disadvantaged communities, they hope to capture rural areas that fall into those categories. Secondly, he said that they are working closely with the U.S. Department of Agriculture (USDA) to ensure their program participants are aware of the GGRF and encourage linkage between their programs. Thirdly, he said that under the Solar for All program, there are 60 grantees across the country that have pledged to cover the entirety of their states, not just the urban centers. Lastly, he said that there is specific mention of rural communities under CCIA and NCIF programs, and many grantees have specifically targeted rural areas as their focus. He concluded by saying that, although there is not a specific set-aside for rural communities, they expect to see good representation of rural communities.

Alison Cassady highlighted that the CCGP has set aside \$50 million of the funding for targeted investment areas or disadvantaged, unincorporated areas. She said that they have seen a lot of applications from rural communities as they are considered unincorporated areas (not connected to the main sewer service, etc.). She added that they are considering expanding the amount originally set aside for that category as they see a large demand and applications from communities in that category.

Albert Cho asked if they have seen interest from water utilities in the GGRF and if there are any eligibility constraints or requirements that would bar them from accessing GGRF funding.

Ted Toon responded that it is too early to determine whether water utilities will be interested in the GGRF. He said that one of the eligibility criteria requires the applicant to prove that the project would not have otherwise been funded; the challenge with utilities is that they are likely to have access to other lines of funding, so it is harder to prove that their projects would meet all the criteria. He explained that additionally the CCIA is 100% focused on low-income and disadvantaged communities, so proving that for a utility's entire service area is difficult. He said that utilities were not their original intended goal, but that utilities could potentially be eligible depending on the circumstances.

Kerry O'Neill added that she is aware of a foundation that is focused on water issues and is trying to cultivate a pipeline that would fit the requirements of NCIF.

Barry Hersh asked if they are tracking how much money goes to different technologies (e.g., wind, solar, etc.) to see which technologies are taking advantage of the program.

Ted Toon responded yes; for the GGRF, they are collecting detailed information from the recipients on each of the projects they fund. He said that data will be collected on the types of interventions that are being deployed (e.g., alternative energy, electric vehicle (EV) charging) so they will be able to understand where they are having the greatest impact, what reductions they are seeing, what the returns look like, and more.

## Greenhouse Gas Reduction Fund Workgroup

**Lori Collins and Jeff Diehl** | Greenhouse Gas Reduction Fund Workgroup Co-chairs

**David Widawsky** | Director, U.S. EPA Office of the Greenhouse Gas Reduction Fund

**Ashley Allen Jones** | Senior Finance Advisor, U.S. EPA Office of the Greenhouse Gas Reduction Fund

**Aileen Nowlan** | Director, General and Low-Income Assistance Division, U.S. EPA Office of the Greenhouse Gas Reduction Fund

Lori Collins acknowledged everyone on the EFAB GGRF Mobilizing Private Capital Series Workgroup members for their contributions as well as the EPA clients, which included David Widawsky and Ashley Allen Jones from the OGGRF.

Lori Collins explained that in April 2024, the OGGRF engaged EFAB to help formulate and clarify the program's private capital mobilization strategy and approach, to ensure the GGRF creates robust on-ramps for the private sector to deploy capital that supports the overall GGRF agenda. She reviewed that there were three main GGRF program objectives and the EFAB workgroup focused on the third objective, which was to mobilize financing and private capital to stimulate additional deployment of greenhouse gas and air pollution reducing projects. She explained that the workgroup addressed private capital mobilization across GGRF's three priority program areas: 1) Net Zero Buildings; 2) Zero Emission Transportation; and 3) Distributed Energy Generation.

Lori Collins explained that the workgroup was asked to produce webinars and bring in expert speakers from the private sector that could give real world perspectives on how the GGRF can be used by the private sector. She reviewed the workgroup's progress:

The Net Zero Buildings Forum on July 30, 2024, had approximately 200 attendees (approximately 400 registrants). Susan Leeds, formerly of the New York City Energy Efficiency Corp., moderated the discussion, and had a great panel of experts and speakers join the event.

- The Zero Emission Transportation Forum September 19, 2024, had approximately 100 attendees (approximately 200 registrants). Dave Mullaney of truCurrent moderated the discussion, along with another great panel of experts and speakers.
- The Distributed Energy Generation Forum is planned for November 12, 2024.

Lori Collins opened the discussion for EPA client feedback.

Ashley Allen Jones said that the conversations so far have been extraordinarily useful to understand the existing challenges and opportunities as well as to consider the specific nuances of the private capital equation in the three priority sectors.

Dave Widawsky thanked EFAB and emphasized how rewarding and productive the workgroup was. He explained that they had set up the charge to utilize EFAB to better understand where private capital can participate in leveraging GGRF resources. He reiterated that the two webinars have allowed them to understand the potential obstacles, escalators, and elevators that exist to allow for capital mobilization. He emphasized that the webinars have given them insight into how and where to engage their grantees, and where gaps remain to maximize the success of the programs.

Lori Collins opened the discussion for workgroup member reflections.

Jeff Diehl thanked Lori Collins for the great leadership and the workgroup members for organizing the webinar. He agreed that it was interesting to learn about real-world experiences and find the commonalities in the market, the barriers, and the opportunities. He said that the biggest takeaway was that there is no “one size fits all” solution for developing the market to be receptive to the clean energy revolution. He said that other key takeaways were the standardization of contracts to improve the ease of execution, opportunities to securitize transactions, all the different entry points in the capital stack, and addressing credit support for households without FICO scores. He said that there were a few surprises, such as the electric vehicle lease residual value, as well as investment tax credit bridges.

Joanne Landau agreed with Jeff Diehl’s comments and added that other key takeaways for her were the need to leverage secondary markets, green bleaching (e.g., Google no longer calling a project “green”) because of strict regulation, and the use of the GGRF to capitalize large, stalled projects which are waiting to be leveraged.

George Kelly said that themes he noticed throughout the webinars related to aggregation of smaller scale projects, standardization, and definition of terms (e.g., “net zero” or “zero emission”), as well as an awareness about other factors (e.g., Federal Trade Commission, U.S. Securities and Exchange Commission, ownership definitional questions) that could create barriers. He said that key takeaways for him were having a power purchase agreement (PPA) contract to create guarantees, securitization, creating secondary markets, understanding tax structure questions, and leveraging public-private partnerships.

Lori Collins opened the discussion for EFAB member feedback and reflections.

Anna Smukowski said that she attended the Zero Emission Transportation Forum. She expressed interest in the conversation around the different scales and levels of financing; zero emissions transportation may be an infrastructure project, but it goes all the way down to a consumer loan and so they need to build the capacity to engage at all different levels. She said that key takeaways for her were defining private capital, especially at different levels of financing, and understanding how a consumer loan may leverage private sector capital.

Uche Isiugo said that he attended the Net Zero Buildings Forum and the Zero Emission Transportation Forum. He said that key takeaways for him were standardization and aggregation of projects to reduce risk, the catalytic function on the GGRF to leverage more private capital, and the blend of capital sources between public and private sources. He said that there is an overlap with the U.S. Department of Energy (DOE) work and energy efficiency topics, which could contribute to future projects.



Sarah Margaret Lee attended the Net Zero Buildings Forum and the Zero Emission Transportation Forum. She said that charitable institutions always look for government policy change before investing. She recommended that the EPA or the Board do more education and outreach on green infrastructure for people who are new to the concept but may have perspectives to contribute.

Aileen Nowlan reported that Climate United signed a deal for almost \$32 million of pre-construction financing for the Scenic Hill Solar project, for the benefit of the University of Arkansas system. She said that the deal has 18 different projects and 13 different service territories, the majority of which are built in rural areas. She emphasized that this deal is a groundbreaking project and is the fourth largest deployment of renewable energy by a university in the U.S. and one of the first financial assistance deals from the GGRF funding. She explained that this project will also serve as a learning lab for university students and can be integrated into workforce development initiatives. She explained that the financial structure has a layered, braided capital stack that combines GGRF funding, tax funding, and private financial leverage. She said that there will be a press launch next week and more to come as they continue with construction, energy production, and savings.

Barry Hersh asked Aileen Nowlan about the sequence of events of this project and if it was a project that they were already working on, or if it was a response to available funding.

Aileen Nowlan responded that they had already been contemplating solar projects, but they did not have the funds to reserve the spot in the utility queue, so the GGRF helped.

Albert Cho reiterated that water utilities may benefit from GGRF funding to expand solar installations. He asked how the public university demonstrated they did not have other funding resources to satisfy all the GGRF eligibility criteria.

Aileen Nowlan responded that other lenders were not able to offer the same level of financing (\$32 million) at the timeline needed for them to secure a spot in the utility queue.

David Widawsky clarified that there is nothing inherently blocking water utilities from accessing GGRF, if the entity was meeting the eligibility requirements for a particular project.

Lori Collins concluded by saying that the next step for the workgroup is the Distributed Energy Generation Forum on November 12, 2024, and then a final report. She opened the discussion for future outcomes of the GGRF. She said that the GGRF could be analogous to the American Recovery Act, which helped drive the adoption of clean energy and the construction of 100,000 renewable energy projects.

George Kelly said that private financing would be measured on the amount leveraged, but it would also be great to measure GHG reductions to see the beneficial impacts.

Anna Smukowski said that the GGRF is comparable to the launch of the Community Development Financial Institution (CDFI) Fund, which catalyzed the community development finance industry in the U.S. She said that the GGRF could catalyze community and climate lenders together to change the way lenders look at the transactions they are underwriting and to better understand the environmental benefits. She suggested that EFAB can help see what kinds of policy constraints arise that block funding from flowing into the industry.

Kerry O'Neill said that the key takeaways for her were standardization and aggregation; those conditions need to be present so that there are vehicles to allow projects to tap into private capital. She

emphasized that there is an opportunity to get standardization and aggregation in place across the multiplicity of project types across the country, but it will be a challenge as well.

David Wegner said that he attended the Net Zero Buildings Forum and the Zero Emission Transportation Forum. He said that there was pushback when they began to implement the Water Infrastructure Finance and Innovation Act (WIFIA) program at the EPA and the Army Corps of Engineers, but now the program is looked at as a success because it brings private investors into the water infrastructure financing world, and it is now even oversubscribed. He said that there is a lot to learn from the implementation of the WIFIA program on how to get the private capital groups interested in this dialogue.

Jodi French added that there is a lot of private capital on the sidelines, so it would be a great potential outreach effort for EFAB to get private capital involved.

Ed Chu said that a benefit from attending the webinars was hearing how the deals worked out. He emphasized that the transfer of knowledge is very important to understand the environmental results and the private capital leverage. He said that it would be beneficial for recipients, such as the University of Arkansas, to continue to share how the project is leveraging private funding and how it accounts for the greenhouse gas reductions.

## **Executive Summary of the Water Affordability Workgroup**

**Cynthia Koehler and Janet Clements** | Water Affordability Workgroup Co-chairs

**Ellen Tarquinio** | Director, Water Infrastructure and Resiliency Finance Center

**Michael Deane** | Chief, Clean Water State Revolving Fund Program

Kerry O'Neill introduced EFAB's EPA clients, Ellen Tarquinio and Michael Deane.

Ellen Tarquinio introduced herself as the Director of the Water Infrastructure and Resiliency Finance Center (WIRFC) at the EPA. She expressed appreciation for the workgroup members' tremendous amount of time and effort into the work.

Michael Deane introduced himself as the Chief of the Clean Water State Revolving Fund Program at the EPA and thanked the workgroup for all the work.

Cynthia Koehler opened the discussion for workgroup member feedback and comments.

Janet Clements suggested it would be helpful to prioritize their recommendations and group them in different ways based on impacts or ease of implementations.

George Kelly asked whether the workgroup discussed regionalization and trading mechanisms.

Cynthia Koehler explained that the workgroup focused on mid-sized and large utilities because of the nature of the original charge, and that regionalization would be more applicable for the smaller utilities. She emphasized that affordability and access issues for smaller utilities need to be addressed in a separate charge since they have a distinct set of issues.

Albert Cho welcomed the idea of a revitalized charge on small utilities. He added that there is more evidence of the potential benefits of regionalization and a greater diversity of opportunities. He also

suggested a name change in their recommendation to create a new award for non-traditional water infrastructure and recommended updating the name to PISCES and AQUARIUS.

Cynthia Koehler confirmed that the name change could be made. She responded to George Kelly's question and said that the workgroup had not explored the topic of trading mechanisms.

Janet Clements said that trading mechanisms can reduce capital costs for utilities, which can translate into affordability implications. She explained that the objective of the overall capital investments section is to provide a high-level overview and examples of significant cost savings, but she said that trading mechanisms can be mentioned in the report.

George Kelly said that they may have an existing report on trading mechanisms, so it could be an incorporation by reference.

Ed Chu said that it would be worthwhile to have another revitalized charge addressing the smaller utilities about regionalization. He added that there has been previous EFAB work about regionalization and trading that can be revisited and updated to reflect the changes in technology and policy.

Courtney Black said that another consideration about the additional SRF subsidy is related to regionalization. She explained that when a large utility achieves economies of scale, disadvantaged communities get blended into the income data and can no longer receive the additional subsidy. She said that not recognizing disadvantaged communities that are contained within the service area of a larger utility punishes these communities that have accomplished regionalization.

Cynthia Koehler agreed with Courtney Black. She said that the larger report also mentions that smaller communities face issues of being unable to access the additional SRF subsidy because they are too small to be eligible for the SRF loan. She said that it would be worth elevating that there are multiple opportunities to make the additional subsidy more impactful.

Dennis Randolph said that any program will need to have flexibility so that systems are not forced into suboptimal solutions (e.g., forcing systems into regionalization). He said that administrators need to be able to see the differences and allow for flexibility to tailor help to the community; this same concept applies to project delivery. He said that they need training for grantees but also for the administrators, so that administrators can be comfortable in applying a flexible set of rules.

Craig Hrinkevich asked how they would direct the EPA to implement the numerous recommendations. He also pointed out that they do not want to administratively burden the customer and prevent them from opting into the affordability program, but also ensure that the beneficiary is truly in need of it.

Jenny Poreé emphasized the importance of asset maintenance in the report. She explained that significant affordability crises stem from underinvestment or major catastrophes, which are then much more expensive to correct and results in affordability issues and rate shock issues. She expressed curiosity about whether the political bodies would be more comfortable once the most vulnerable customers have been protected and whether that would allow for a greater rate setting autonomy. She asked for clarification on the concept of reduced-fixed revenues, as fixed revenue provides a consistent financial cushion and is critical for utility managers to be able to leverage.

Cynthia Koehler agreed with Jenny Poreé that the fixed charges are important for fiscal health, but they are also challenging from an affordability perspective. She said that it is hard to rely primarily on volumetric revenue in an industry where 80 to 90% of costs are fixed costs.

Janet Clements agreed with Jenny Poreé's comment and clarified that the report describes that this method would only be done if the utility has flexibility. She explained that reduced-fixed revenue is only one tool, and it depends on the utility's assets.

Ellen Tarquinio said that it was a difficult charge to develop and thanked the workgroup for addressing the different areas included in the charge. She said that they are confident that the report is in a good place and that the recommendations are incredibly helpful for beginning to put together a roadmap to address affordability. She said that they may still need more input on what pieces will make the biggest impact. She clarified that there are also areas where they are limited to as a federal agency and will be working with the workgroup to find those limitations.

Ed Chu added that, for any recommendations that are directed at entities other than the EPA client, to make sure that they are noted clearly in the report.

Angela Montoya Bricmont said that prior to Denver Water applying for BIL funds, they had a partnership with Urban Renewal Authority to get lead replacement funding for homeowners who cannot afford it. She suggested staying updated on other innovative financing solutions that may arise from the new Lead and Copper Rule Improvements (LCRI) requirements. She asked the EPA client on if they had a target audience, as that could be a way to organize the recommendations, since some tools are easier for smaller versus larger utilities.

Cynthia Koehler said that they can clarify utility size applicability for each of the recommendations.

Ellen Tarquinio responded to Angela Montoya Bricmont and said that all utilities and communities face water affordability issues, and so likewise, their target audience is everyone. She added that the prioritization of the recommendations would help with implementing those recommendations. She said that the EPA is committed to working on this charge and that they have resources and staff at the ready.

Kerry O'Neill summarized that the Board would be voting tomorrow on the Water Affordability Executive Summary and Recommendations as an interim deliverable, which would allow for editorial flexibility in the final report. She said that the workgroup will then move forward with finalizing the full report and would bring it to the Board to discuss and vote to approve the final report deliverable. She said that the vote would likely occur virtually, ideally before the Spring meeting. She recognized the tremendous amount of work and thanked the workgroup for all the hours put into the work.

Ed Chu agreed that he was impressed with the substance and depth of the deliverable.

## Public Comments

**Larry Levine** | Natural Resources Defense Council

Larry Levine said that the Natural Resources Defense Council is an international environmental advocacy organization that works on clean water, safe water, water infrastructure funding, and water affordability. He applauded the members of the workgroup for their work on the draft executive summary. He underscored the value of auto-enrollment for low-income programs. He highlighted an example of a water department, which used auto-enrollment to more than double enrollment in their city's programs (more than 36,000 people added). He expressed appreciation for calling out the business case for utilities having water affordability programs. He recommended that the report also includes the benefits of having water affordability programs; not only are utilities avoiding the costs of nonpayment

and shutoffs, but they are also increasing the collections rate from customers who are currently struggling to pay an unaffordable bill. Lastly, he recommended highlighting the expansion of the cost-of-service framework. The purpose of the public water systems is to provide for public health; to serve that goal, utilities need to provide universal service to everybody in their service areas. He reiterated that providing universal health is a function of the utility and therefore should be part of the revenue generation needs to serve that function.

Ed Chu thanked Larry Levine for the public comment.

## **Day One Wrap-Up & Adjourn**

**Ed Chu** | EPA Designated Federal Officer

Ed Chu wrapped up Day One of the meeting and adjourned the meeting.

# Day Two – October 16, 2024

## Welcome, Member Roll Call, and Review of Agenda

**Ed Chu** | EPA Designated Federal Officer

**Kerry O'Neill** | EFAB Chair

Ed Chu welcomed everyone to Day Two of the meeting and gaveled the meeting to start.

Kerry O'Neill conducted the roll call.

### Roll Call

Kerry O'Neill, present

Courtney L. Black, present

Steven J. Bonafonte, not present

Angela Montoya Bricmont, present

Matthew T. Brown, present

Stacy Brown, present

Albert Cho, present

Janet Clements, present

Lori Collins, present

Zachary Davidson, not present

Jeffrey R. Diehl, present

Sonja B. Favors, not present

Jodi French, present

Phyllis R. Garcia, present

Eric Hangen, not present

Barry Hersh, not present

Craig A. Hrinkevich, present

Dr. Uche C. Isiugo, present

Thomas Karol, not present

George W. Kelly, present

Gwendolyn Keyes Fleming, not present

Cynthia Koehler, present

Colleen Kokas, present

Joanne V. Landau, present

Sarah Margaret Lee, present

Lawrence Lujan, not present

MaryAnna H. Peavey, present

Jenny Poreé, present

Dennis A. Randolph, present

Sanjiv Sinha, not present

Aaron Smith, present

Anna Smukowski, present

Marilyn Waite, not present

David L. Wegner, present

Gwen Yamamoto Lau, not present

Kerry O'Neill gave an overview of the Day Two meeting agenda and began the water affordability workgroup discussion.

## Water Affordability Workgroup – Discussion/Vote

**Cynthia Koehler and Janet Clements** | Water Affordability Workgroup Co-chairs

Cynthia Koehler asked the Board for support on the Water Affordability Executive Summary and Recommendations presented on Day One. She noted that the full report is still in progress and will be coming out in the next few months. She clarified that the vote would be an acknowledgement of review and provisional acceptance of the interim deliverable.

George Kelly reiterated a point he made on Day One during the Water Reuse Workgroup discussion about how tax incentives may not work due to the cheap price of water. He also recommended adding a contextual comment in the report to recognize environmental concerns and considerations about

promoting water affordability in regions where water is scarce. He questioned whether they would want to promote water affordability in the West, for example, where water is scarce. He also questioned whether the water affordability recommendations would apply to existing communities in need or if it applied to new growth affordability issues, such as building affordable housing.

Cynthia Koehler agreed with George Kelly's point of adding further context. She said that the report defined affordability in terms of consumers who are struggling to pay for essential needs and that they are not using affordability as a synonym for cheap. She said that that they can make that clearer in response to his concern.

Kerry O'Neill suggested adding more context in the section of the report where affordability is defined to emphasize that the term "affordable" does not mean cheap.

Courtney Black suggested that they can also emphasize the ability to recover the full cost of water from those who are not in positions of need as they solve for essential service access. She recommended adding that point to help emphasize that they are not aiming to make the cost of water cheap.

David Wegner agreed with George Kelly's concern about making water too affordable. However, he also raised the concern of quickly making water too expensive wherein people cannot build it into their budgets. He said that providing a glide slope or transition process is necessary so that the cost of water is kept affordable but also realistic.

Kerry O'Neill summarized that there needs to be a balance of focusing on low-income consumers who are struggling to access basic water services, while also acknowledging that there is a broader context of the water crisis. She reiterated the provisional nature of the interim deliverable and reminded attendees that there would be an opportunity for the Board to review and vote on the final report. She reiterated that the vote for approval of the interim deliverable would allow the client to reference the interim deliverable publicly as other EPA reports are being published.

Seeing no further questions or comments, Kerry O'Neill asked whether the Board was ready to motion the vote. Jeff Diehl motioned the vote to approve the Water Affordability Executive Summary and Recommendations; Angela Montoya Bricmont seconded. The vote passed unanimously.

## **Water Reuse Workgroup – Discussion/Vote**

**Angela Montoya Bricmont** | Water Reuse Workgroup Chair

Kerry O'Neill said that Angela Montoya Bricmont drafted a transmittal letter to go along with the EFAB Water Reuse Workgroup product. She noted that Angela Montoya Bricmont was able to socialize the letter with the EPA client, Ed Chu, Tara Johnson, and Kerry O'Neill.

Angela Montoya Bricmont explained that the drafted letter helps contextualize why the research was requested. She reviewed that the transmittal letter includes the directive for the research as well as a clarifying statement on the primary focus of the workgroup, which was to evaluate the "public benefits" of an investment tax credit. She reviewed that the letter also includes the Water Reuse Workgroup charge approach as well as the documents from the workgroup's listening session which are available to the public. She reviewed that the letter also includes an executive summary of each of the recommendations proposed by the workgroup presented during Day One, along with the considerations for designing a tax credit. She noted that the transmittal letter is not final, as it still needs to get on

letterhead and have additional minor edits. She requested the Board to vote on the letter as a final deliverable from the workgroup to accompany the PowerPoint presentation.

Albert Cho asked about recommendation four in the letter which directs the EPA to refresh the 2006 Water Research Foundation Project #1587. He asked whether the EPA has the authority to do that.

Justin Mattingly responded that he interpreted the recommendation as using the Water Research Foundation project as a basis for an update, rather than updating the project itself, and therefore it would not matter who led that update.

Ed Chu clarified that Albert Cho's question was whether the EPA had the authority or jurisdiction to complete this project update as stated by the recommendation.

Justin Mattingly confirmed that the EPA does not have the authority to direct the Water Research Foundation. He said that the project could still be used as a starting point for a different product.

Albert Cho suggested that the recommendation wording should be framed differently to reflect that.

Angela Montoya Bricmont said she would clarify the language so that it is clear that the recommendation is to build upon the work in the 2006 Water Research Foundation Project #1587 and leave it agnostic as to who would be conducting the work, whether it is the EPA or someone else.

Ed Chu reiterated that vote would still allow for editorial flexibility.

Angela Montoya Bricmont welcomed the editorial comments and asked the Water Reuse Workgroup members if they had any input.

Sarah Margaret Lee asked what the relationship is between the Water Research Foundation and EFAB.

Justin Mattingly explained that the Water Research Foundation is a consolidation of multiple research foundations. He said that the Water Research Foundation is a nonprofit organization mostly funded by public utilities and other entities to conduct various research projects. He said that the EPA and EFAB cite work done by the Water Research Foundation to help inform recommendations. He clarified that the Water Research Foundation is not affiliated with the EPA, but they have received EPA funding before. He noted that he used to work there, for full disclosure.

Kerry O'Neill added that EFAB work products will often cite outside literature, some of which EFAB members have been involved with either directly or indirectly. She clarified that the intention of recommendation four is to recognize the great work done and recommend an opportunity to refresh the research since the project is now dated.

Anna Smukowski recommended adding community facilities that have experience using investment tax credits, such as health centers and other educational facilities, in addition to commercial facilities under the considerations for development. She suggested that those facilities could be a big potential market for a tax credit program around water.

Angela Montoya Bricmont asked Anna Smukowski to clarify what she means by community facilities and if those would include nonprofit organizations.



Anna Smukowski confirmed that community facilities could be nonprofit or for-profit. She said that nonprofits are used to using investment tax credits as part of a capital stack.

Angela Montoya Bricmont said the suggestion was a great idea but that the workgroup did not get to explore considerations beyond large commercial users. She deferred to the rest of the workgroup whether community facilities should be added to the recommendations.

Kerry O'Neill explained that the original charge was focused only on industrial facilities, but the workgroup felt strongly that the scope be expanded to include large commercial water users. She asked whether the workgroup felt comfortable with updating the recommendations, given that they were nearing the end of the research process. She proposed that this topic could potentially be a future opportunity for a follow-up charge.

Angela Montoya Bricmont said that given the original charge was focused on industrial users, the workgroup did not want to stray too far from that originally requested scope of research.

Ed Chu recommended that an option would be to start a new line of work for additional considerations as opposed to modifying what has already been done. He urged the new members to think about additional considerations that get raised throughout the meeting discussion, as these are topics that the Board can approach clients about for new work.

George Kelly suggested that they could remove the word "commercial" from recommendation one and instead say "...aim incentives to attract a diverse range of participants, including large scale users..." so that community facilities could still be included, without needing to highlight community users.

Angela Montoya Bricmont agreed with George Kelly's suggestion.

Kerry O'Neill asked if there were any thoughts from the workgroup or the client around that suggestion.

Justin Mattingly confirmed he had no further thoughts and said this conversation was very helpful.

Seeing no further comments or questions, Kerry O'Neill asked whether the Board was ready to make a motion to vote. Cynthia Koehler motioned the vote to approve the transmittal letter; George Kelly seconded. The vote was unanimously approved.

Kerry O'Neill said that they would work with Angela Montoya Bricmont to get the letter transmitted in the next week.

## Arizona State University Welcome

**Michael Crow** | President, Arizona State University

Ed Chu introduced President Michael Crow from ASU and said President Crow is a visionary leader for ASU and higher education. He explained that President Crow is the reason for his detail at ASU and thanked President Crow for joining the meeting.

President Crow recounted his experience of being the deputy provost and faculty member in the School of International Public Affairs and founder of the Earth Institute at Columbia University. He said that he saw leadership at universities as being focused on a selfish model of glorifying individuals instead of

working to safeguard the liberties of future generations. He described creating a vision of a “New American University” with a radical new charter. Firstly, he said that the charter would measure success based on inclusion, instead of exclusion. He explained that many public universities measure success as a function of exclusion or selectivity, so instead, ASU would strive to be an institution built around the success of the student body being representative of the nation, with no qualified student being left out. Secondly, he said that the charter would focus on building a university whose research can be measured and valuable to the public, not only valuable to the university. Lastly, he said that the charter would focus on taking responsibility for public education. He described how ASU runs public high schools that currently have 4,000 students with a 99% high school graduation rate.

President Crow emphasized that ASU has worked towards sustainability and global futures in a multitude of ways. He explained how ASU has replaced 85 academic department schools and colleges with transdisciplinary schools, and created the Global Futures Lab, to avoid isolated disciplines and encourage creating collaborative solutions to today’s issues. He also described how ASU has worked to reduce their carbon footprint by changing their buildings and operations, such as building net zero buildings and LEED-platinum research laboratories, eliminating solid waste, and generating electricity from solar plants. He described how ASU has diversified research and, in doing so, has surpassed a billion dollars in research expenditures. He concluded by describing how ASU has changed their culture in their engineering schools and built new ways for all types of students to become engineers, resulting in a dramatic increase in their engineering graduates. He then opened the floor for questions.

George Kelly asked President Crow how Ed Chu got brought to ASU.

President Crow explained that he had been Jim Gulliford’s research assistant at Iowa State in 1973, and through Jim Gulliford, he met Ed Chu. He explained that Jim Gulliford is a forester and was a regional leader in Kansas City as well.

George Kelly asked if there is more opportunity for interface between the EPA and the university.

President Crow responded yes; they are very interested in interfacing between the EPA and the university. He said they would like to fund people to come to the university, encourage collaboration, and appoint many more professors of practice at the Center for Planetary Health, which is the headquarters of the Global Futures Lab. He explained that they are striving to build a school that addresses issues affecting the planet which needs various people working together to tackle complex environmental problems.

Ed Chu added that one of the items that he has accomplished at ASU was creating an official memorandum of understanding (MOU) between ASU and the EPA to encourage more exchanges.

Sarah Margaret Lee asked President Crow what is next for ASU.

President Crow responded that they are focused on accelerating their carbon hub and developing sustainable technologies for the marketplace, such as algae-based food systems, water cleaning systems, and water extraction systems. He said that, on a larger level, they are working on breaking down built-in barriers in education and creating new ways of teaching so that anyone can come away with measurable learning outcomes. He said that they have also recently decided to teach sustainability to all 35,000 new incoming students each year as well.

Jodi French complimented President Crow for being an inspirational leader and said that it was great to be in a place surrounded by solar since she has a solar background.

President Crow said that all the solar was done with private sector capital through a solar PPA. He added that they have completed billions of dollars of projects which not only included energy projects, but housing projects as well.

Jodi French explained that one of the sectors she concentrates on is education, but most of the time there was not a leader, so there was no consensus, and projects did not have much success. She said that she had massive success at Johns Hopkins but that was it. She emphasized that the process to achieve consensus can be very frustrating and applauded all the work President Crow has done at ASU.

President Crow agreed that this is a problem with academic institutions decision-making. He said at ASU, a project moves forward if there is a majority approval.

Albert Cho asked President Crow how ASU has been able to make radical changes while also being a public university and maintaining alignment with the large range of stakeholders to whom they are accountable.

President Crow said that they conducted a project to assess areas of common perception. He said that the project identified with the most shared public value of the people of Arizona is sustainable outcomes and environmental futures; over 92% of Arizonans want sustainable outcomes. He said that they also explain to stakeholders that the market is a driver of their solutions, rather than regulation. He explained that they use data, rather than political arguments, to build consensus with their stakeholders.

MaryAnna Peavey asked President Crow to describe about how the College of Global Futures is set up to give students a diverse educational background and prepare them for the workforce.

President Crow said that they created an executive master's degree in sustainability as a transdisciplinary degree made for working professionals. He described how the School of Sustainability had faced doubts about whether there was a demand for these degrees in the workforce; however, they have since shown that these degrees and programs are all highly desirable in the job market.

Cynthia Koehler asked if they have seen opportunities for a ripple effect into the solution work, given that ASU has invested heavily in the College of Global Futures.

President Crow responded yes; he does see a ripple effect. He described how they built the School for Complex Adaptive Systems to work on producing better solutions and more robust models that can visualize and predict complicated outcomes in the Earth's system.

Ed Chu concluded the session by thanking President Crow for his time and discussion.

## Arizona Water Innovation Initiative

**Dave White** | Director, Global Institute of Sustainability and Innovation, Arizona State University

**Sarah Porter** | Director, Kyl Center for Water Policy

**Cora Tso** | Senior Research Fellow, Tribal Water Policy, Kyl Center for Water Policy

Ed Chu recognized ASU's work, passion, and expertise in the space of water. He said that one of the reasons it was important for the Board to come to ASU was to ensure that the Board had insight into water issues in the western United States and learn more about the water situation in the region. He turned the discussion over to the panel to speak more about the Arizona Water Initiative.

Dave White shared that it has been a pleasure to have Ed Chu at ASU for the past year. He reiterated how President Crow directly requested Ed Chu for the role at ASU. He said that Ed Chu has made incredibly valuable contributions to the university, such as starting "Climate Chats with Chu" which have been enormously popular. He described how Ed Chu brings leaders, such as EPA Regional Administrators, to speak about their substantive work, their areas of expertise, and their leadership journeys which have been incredibly powerful and inspiring for students. He also emphasized the valuable work Ed Chu has done to sign the formal MOU with the EPA, which includes several areas of proposed collaborative work, including research, workforce development, internships, and other activities.

Dave White introduced himself as the Director of the Global Institute of Sustainability and Innovation, which supports ASU's organized research centers and large-scale research projects. He also said that he is the leader of the Arizona Water Innovation Initiative. He said he has been at ASU since 2001 working to support President Crow and the leadership team in advancing ASU's efforts around sustainability.

Sarah Porter introduced herself as a professor of practice and the Director of the Kyl Center for Water Policy. She described her experience beginning as a lawyer to then becoming the State Director for Audubon where she joined with other Audubon leaders to protect the riparian habitat in the Intermountain West and the Sonoran Desert. She described becoming interested in water policy, which led to becoming the first director of the Kyl Center for Water Policy. She explained that the Kyl Center for Water Policy is an independent stakeholder that looks at water policy as it impacts Arizona and the Colorado watershed. She said that a big project they have done is produce a hub of water resources information called the Arizona Water Blueprint, which is a centralized area to learn about water and water resources in Arizona.

Cora Tso said that she was originally from northeast Arizona, born and raised in the Navajo reservation. She described growing up as a product of relocation, as her family originally lived above the Black Mesa area near Canta Mine and was moved below the mesa in the 1970s due to the Peabody Coal Mine development. She described how many parts of her identity are reflected throughout her career journey. She described how she attended the American Indian Studies program at ASU and graduated with a law degree in 2020 to help advocate and protect Indigenous people and Tribal sovereignty. She explained that the Navajo Nation is part of both the upper and lower Colorado River basins, which require dual management and issues. She explained that she worked at a local nonprofit on state tax policy work, then worked in her nation in a water regulations unit position, then worked at Western Resource Advocates as a Western Lands Attorney. She said that, with the launch of the Arizona Water Innovation Initiative, she began to work at the Kyl Center for Water Policy in January to build something that speaks to Tribal water policy as well.

Dave White provided an overview of the list of water quality and quantity challenges facing Arizona, which are mainly grouped into two categories: environmental and social challenges. He described several environmental challenges, including the millennium drought (the driest 22-year period from 2000 to 2022 in at least the last 1,200 years), which impacted groundwater and surface water supplies, as well as increased extreme and average temperatures due to global climate change. He explained that the increased temperatures have resulted in a "hot drought" – a drought caused by heat despite the

same amount of precipitation, due to a greater evaporative demand. He also described the social challenges that Arizona faces, including significant population growth and urbanization, as well as legacy effects of policy, law, and governance which continue to challenge Arizona. He asked Sarah Porter and Cora Tso what they think are the top challenges facing Arizona.

Sarah Porter said that most of the water that the Phoenix area (along with most big cities in the Southwest) relies on is imported and Arizona is aware of this issue. She said that there is a conflation of the idea that urban growth and water supply problems relate to each other – in the Phoenix to Tucson area, there has been a 45% increase in population and only a 14% increase in water demand from 2000 to 2020. Therefore, she said that the biggest challenge is politics, figuring out how to unify the various stakeholders behind solutions. She explained that 75 to 80% of human water use in the American West and the Colorado Basin goes to farming and agriculture. She said that cities will find the solutions, but asked: How do we include rural areas in those solutions? How can we continue to have food production with less water available? She emphasized that these issues become very partisan, particularly within the context of a swing state. She said that this is reflected in the record number of water-related bills introduced in the last legislative session.

Dave White added that the state of Arizona uses the same total amount of water as they did in 1952 – even after adding three to four million people and increasing the economy 21 times since then. He said that this shows a success story of being resilient despite the challenges. He summarized Sarah Porter's argument that the main challenge facing Arizona is policy development, politics, and governance, as well as bringing people together to focus on solutions.

Cora Tso agreed with Sarah Porter. She added that there are also legal challenges from the past 120 years of laws and policies that were made without inclusive processes and participation of stakeholders. She said that there are many legal challenges in trying to protect Tribal sovereignty, as they must consider the intricacies of the state and local laws of the seven basin states, as well as the Tribal laws of 30 different Tribes. She said, for example, they are in conversations with the federal government and the seven Colorado River Basin states on the Colorado River's management guidelines once they expire in 2026. However, currently the 30 Tribes within the Colorado River Basin do not have voting power or voices in those conversations. She explained that there has been an MOU executed in the upper basin that commits the upper basin states to having a conversation with the Tribes, and there is a very large distinction between the Tribes that have resolved their water rights versus the Tribes who have not. She added that larger cities' resiliency and sustainability have advanced in partnership with Tribes who have settled their water rights and have the flexibility to lease their water to municipalities. She explained that they face issues in trying to define, protect, and advance Tribal sovereignty as a government-to-government relationship, but also trying to work with community members who are Arizona citizens. She said there is also a societal challenge of changing the narrative, as it is hard to make a large claim to water rights after having been historically left out of policy conversations. She said they need to address the challenges societally, politically, and legally, as well as adapting the policies and laws to the needs in that area accordingly.

Sarah Porter added that the highest deaths per capita occurred in the Navajo Nation during COVID-19 for a while. She said that the lack of access to water exacerbated this issue; the Navajo Nation has the least water use per capita in the entire nation. She explained that central Arizona grew explosively during World War I and World War II as cotton was needed for airplane tires, which led to people pumping groundwater to grow cotton and dewatering the aquifers. She explained that their solution was to build a 330-mile aqueduct (Central Arizona Project (CAP) Canal) to move part of the state's

Colorado River water allotment to the Phoenix to Tucson areas, with pumps powered by coal-fired plants created in the Navajo Nation. She explained that there is now a settlement pending on Congress that will take the water from the decommissioned coal mine and give it back to the Navajo Nation, the Hopi Tribe, and San Juan Southern Paiute Tribe. She concluded by saying that their history is largely impacted by federal policy.

Dave White added that the CAP Canal is the single largest use of electricity in the entire state; it highlights the implications of past policies in affecting historically underserved and overburdened communities, as well as highlighting the importance of the Environmental Justice 40 initiative and other investments through IRA and BIL to try to address historical injustices. He explained that the state of Arizona asked ASU to lead the Arizona Water Innovation Initiative; the state has contributed a lot of funding to address critical priorities including: ensuring that they can continue to grow the economy while protecting their water resources; developing and contributing to a sustainable water management framework for the Colorado River; addressing groundwater over-allocation in their active management areas within the state; helping achieve water equity; and helping ensure there is clean water and sanitation access for all Arizonans. He explained that the effort is focused on an interdisciplinary approach to encourage creative solutions and innovations, in areas such as technology, policy and governance, engagement, and more. He asked Cora Tso and Sarah Porter about what the most promising approaches they have seen so far in the Arizona Water Innovation Initiative.

Cora Tso said that having an open-door policy across the university and within the Arizona Water Innovation Initiative has been a great approach in working with the Tribal communities as a partnership. She also said the continual learning mindset within the university has also been a great innovation; the interdisciplinary and inclusive mindset towards learning has been helpful to continue to grow and connect with people who do not necessarily come from a technical background, as well as a willingness of community members to learn what the university is doing. She said that the top-down leadership approach towards solving the issues as a neutral party apart from state legislature has been another great approach that has been also recognized by the state government.

Sarah Porter said the city of Phoenix is ramping up a multi-billion dollar project for direct potable reuse (DPR), also known as advanced water purification, to reduce the city's reliance on the Colorado River by 50%. She said that the Arizona Water Innovation Initiative had Marisa Manheim, a PhD student at ASU, conduct a study on people's response to DPR and found that their concerns were alleviated once they understood the water purification process. She said that the Arizona Water Innovation Initiative is now developing an animation to explain the water purification process to reach a large audience. She added that utilizing data to develop practical responses is a promising approach.

Dave White added that Marisa Manheim focused on embodied cognition to change people's understanding of DPR – getting people to understand the taste, feel, and smell of recycled water, instead of just approaching with analytical arguments. He explained that Marisa Manheim found that the process of engaging people through embodied cognition, along with the evidence-based information, was a big breakthrough in getting people to understand and support advanced water purification, particularly in communities that historically have had low trust in government.

Sarah Porter reiterated the concept that Arizona has an issue with evaporation. She said that, through the Arizona Water Innovation Initiative, she was brought around to supporting the technological innovation of atmospheric water harvesting, particularly for cooling towers and industrial applications.

Dave White added that there are multiple potential applications for atmospheric water capture, such as small scale off-grid solar-powered atmospheric water capture for household use. He clarified that, although it is currently small scale and limited, there is an atmospheric water capture company from the university that is considered one of the fastest growing companies. He agreed with Sarah Porter about being skeptical initially and then coming to support the idea particularly for industrial water capture applications. He opened the floor for questions.

Lori Collins asked for their views on trying to attract private capital or capital markets, whether it is private equity or listed equities, to innovative resilient solutions.

Dave White said that one of their projects, called the Southwest Sustainability Innovation Engine, works with venture capitalists, accelerators, and early-stage startup companies to tackle the question of drawing in private markets. He said that there is a lot of private equity and capital looking for more certainty in the policy and governance processes regarding these issues; a lot of equity is ready to go in if the federal, state, and international government policies are aligned in that direction.

Sarah Porter added that the perception of the water need is not aligned with the actual need. She described an example with ocean desalination, where a company offered 300,000 acre/feet a year of desalinated ocean water but there is not a market for that amount of water – that is the same amount of water the city of Phoenix currently delivers to taps. She emphasized that the perception of the need is very misaligned, and so more conversations are needed about the actual need and capacity to pay.

Jenny Poreé asked about the opportunities and challenges with respect to groundwater management, particularly in the western part of the state where the state does not necessarily have as much control, and how they think groundwater management could affect supply in the future.

Sarah Porter clarified that pumped water within a certain range of the Colorado River is considered water from the Colorado River, not Arizona's groundwater. She said that Arizona has both highly regulated groundwater in the bigger cities and then nearly unregulated groundwater in the rural areas, which is a very contentious issue. She said that the legislature has the authority to regulate the water whenever it decides to do so, but it is dependent on legislative action. She said vulnerability will remain until they can regulate the groundwater in the rural areas, which is ultimately a political issue.

Dave White added that they now have an expanded understanding of the groundwater capacity and aquifer levels. He explained that they are focused on empowering communities to manage their own groundwater. He said that, when engaged properly, those communities have invited additional active management into their communities to help address water issues, such as the first voter-approved groundwater management districts.

Sarah Porter said that communities in rural areas become concerned about groundwater when there is a big new demand for water – mostly from industrial scale agriculture, which can legally come and develop new wells. She explained that usually the rural areas do not have the capacity for expensive water augmentation projects.

Cora Tso added that there is an opportunity to look at groundwater management with their settlement agreements across the state, which include Tribal parties, non-Tribal local community parties, and the state. She described how northeastern Arizona Tribes have created one- to two-mile buffer zones to protect their aquifers that mitigate groundwater pumping. She said that, in the Verde Valley, there is a partnership with local communities and the Tribal nation to set groundwater pumping restrictions by

creating water budgets and mitigation provisions if those budgets are exceeded. She said that there are opportunities to look at how their Tribal settlements are negotiating agreements in a proactive manner.

Cynthia Koehler said that there was a successful mobile beer tasting program in Arizona to overcome the “yuck” factor of reused water. She asked if they are continuing to pursue those types of efforts.

Dave White responded yes; they have ongoing beer tasting. He agreed that beer tasting has been one of the most successful outreach strategies. He added that Marisa Manheim conducted a policy analysis of advanced water purification plants investment processes in locations that passed DPR projects successfully. He said that one product of her work will be a public-facing policy development roadmap for communities that are looking to do DPR.

Sarah Porter said that she would be interested in seeing what kind of pushbacks there will be for DPR, particularly around equity, since DPR developments will be in high income communities.

Dave White added that a very big narrative will be that one of the most advanced manufacturing facilities in the world is building industrial reuse and recycling as part of their plants and is headed towards zero liquid discharge at that facility. He said that this could be framed as an advanced approach to water management, along with the advances in semiconductor manufacturing.

Angela Montoya Bricmont asked Cora Tso about the pace of the conversations with the seven states. She asked if there is anything they can learn from the Tribal nations in terms of cooperation and collaboration and if there were any insights from working across both upper and lower basins.

Cora Tso responded that they see a collective mindset of wanting sustained access for future generations. She said that there is a growing split between upper and lower basin Tribes because of how the litigation distinguishes the water allocations. She explained that there are also differences between the Tribes north of the Colorado River, western Arizona Tribes, and central Arizona Tribes that receive CAP water; the significance of the policy is that the CAP Tribes will be the first to realize shortages due to the placement of the settlements and how the federal government made the contracts. She said overall there has been tension between the Tribes and wishes there were more collaboration, however there is some partnership. She said there is the Ten Tribes Partnership, the Water and Tribes Initiative, and the Intertribal Council of Arizona which represents 21 of the 22 tribes and has a Tribal Water Policy Council. She said that supporting those forums is a step forward, but they also need to allow space for those divergent perspectives to exist and find support where needed. She said that they are seeing an overall fractured approach in the communities due to the regulation and restriction of state policy, federal policy, and Colorado River laws.

Ed Chu said that there were treaty rights for northwest Tribes for salmon fishing. He asked if those treaty rights have affected legal contracts and discussions around water rights, since treaty rights supersede the state laws and rights.

Cora Tso clarified that not all Tribes have treaty rights; some were created through Executive Orders or Congressional legislation. She said that for the Tribes that do have treaty rights, not all of them have explicitly negotiated water rights in those treaties. She explained that, through the Supreme Court’s precedent and in Indian law, they consider the context of the history along with the federal policy of self-determination, because when treaties were originally negotiated, Tribes were under duress or in enslavement and had barriers of language, and so it is instructed to interpret the treaties for the benefit of the Indians which is how they help make their water rights claims. She concluded that, overall, most



treaties do not have that specific retainment of water rights, though they do have provisions for education, school, health, agriculture, and creating a permanent homeland, which cannot be done without access to water.

Sarah Porter added that, in 1908, the Supreme Court ruled on the Winters Doctrine which states that when the federal government creates a reservation, it implicitly reserves a water right sufficient to fulfill the purposes of the reservation. She said, however, that it was then up to the federal government to uphold those water rights.

Cora Tso added that because of litigation with state and local parties, Tribes are hauled into state court now, so it becomes a state political matter and there is a triple sovereignty issue. She said, however, that states do not have the same responsibility that the federal government does.

David Wegner said that one of the biggest challenges for water innovation was capturing the benefits or the value of that innovation, such as ecosystem services or climate services. He asked if they are looking at ways to quantify the indirect benefits for innovation.

Dave White responded not yet; they have not yet quantified indirect benefits for innovation. He said that they have colleagues, Michael Hanemann and Kerry Smith, who are working on this. He explained that they do not yet have a strong economic presence in the Water Initiative; therefore, they are not directly supporting work to help understand those indirect benefits. He said that is a good question and they have interest from some of their economists, but it is an area they are wary of exploring.

Sarah Porter agreed with Dave White. She explained that they are hesitant to explore that topic because that may also require them to quantify environmental impacts, which would be a complex endeavor.

George Kelly asked about the opportunity of using drip irrigation to reduce water use and nutrient load to the Colorado River. He asked how to get funding for drip irrigation infrastructure, how to value the benefits of drip irrigation, and how to create a market structure that would allow for these types of projects. He explained that in Utah, they have legislation on statutory and contractual water banks and are harnessing markets and asked what role they see markets playing in Arizona.

Dave White responded that the partners with the CAP have worked on supporting investments in infrastructure for drip irrigation and other gravity-fed irrigation systems. He said that there have been significant quantifiable benefits of those infrastructure projects, such as a reduction in 48% reduction in water demand for crops. He explained that it is currently a smaller-scale pilot program that is using CAP to provide TA and funding, as well as taking advantage of IRA funding. He said that the Water Infrastructure Finance Authority in Arizona has also been able to invest in those projects (approximately \$200 to 300 million). He said that there is less optimism about the market.

Sarah Porter said that markets are going to emerge organically. She said that, within places where groundwater is highly regulated—where 85% of Arizonans live—there is a cap-and-trade system and a highly regulated, structured market for stored groundwater. She said that Indian Tribes have federal authorization to lease Colorado River water, which has resulted in a market emerging for leased water along the Colorado River. She said that although these are not huge water markets like the Murray-Darling Basin, markets have emerged as needed and as willing partners appear.

George Kelly agreed that markets do not have to be a large complex system. He said that enabling the markets to be recognized in the legal system has been a difficult challenge to overcome and pointed out that another issue is that most of the agricultural land is for alfalfa.

Sarah Porter responded that alfalfa is a cover crop and uses a lot of water because it is in the field all year, but farmers would use the same amount of water to grow two or three crops in a given year. She said that we need to learn more about farming instead, since the reason farmers are growing alfalfa is because there is a market for it.

Cora Tso added that there is an opportunity to open the market for Tribal economies. She explained that currently Tribes do not own their land and therefore are unable to leverage their land or build infrastructure which is why they are handicapped by federal policy. She added that state policies could be changed to allow Tribes to reinvest in their economies. She explained that currently there are millions of tax dollars derived from transactions occurring on Tribal lands which are subject to state taxation; this money could be used to reinvest into water infrastructure for Tribes, but instead goes to the state and goes into a tax distribution formula that goes to non-Tribal communities. She added that state policies also do not allow Tribes to tax on Tribal lands; therefore, Tribes are unable to build their economies because most Tribes do not have property taxes or sales taxes from which to build an economy. She concluded that changing the state policies would help open the Tribal markets.

Dave White added that they have seen a 30-year trend of market forces at work as there has been a transition from historically agricultural to predominantly residential areas, particularly in central Arizona.

Uche Isiugo asked the panel what they see as the strategies for business models at the intersection of clean energy and water infrastructure, what they see as scaling, and how they approach technology transfers. He explained that the DOE has a technology transfer to the national labs, and they are looking at opportunities for scaling business models.

Dave White said that they have a sophisticated technology transfer called SkySong Innovation which supports the university in developing intellectual property, patents, and spin-offs. He said that they can connect through SkySong Innovations if interested with engaging with the university. He said that there has been significant development and scale-up in utilities going solar, including the Arizona Corporation Commission and the major utilities, such as Salt River Project, Arizona Public Service, and Tucson Electric Power. He said that there has been a trend in community-scale solar. He added that household solar energy seems discouraged due to the tax policies, although residents can opt-in to certain community-based solar programs and renewable energy programs. He concluded by saying that he sees large-scale community solar installations as being the future unless the environment changes.

Sarah Porter agreed with Dave White. She said that everyone is excited about solar, apart from needing to manage the storage issue. She said that hydrogen is another important non-carbon energy source for the future. She added that there is a degree of vulnerability in Arizona because they allow groundwater withdrawals in rural areas and have a lot of salt bodies for storage for hydrogen, so it depends on which energy, where, and what water source. She said that the actual consumption of water in Arizona for thermal-electric power production is the same as golf (about three percent of water demand), so there is probably a bigger story with energy for water.

Janet Clements asked the panel to talk more about the key economic challenges they are working on and how they are approaching those challenges.

Dave White reiterated that they do not have a strong body of work at the Arizona Water Innovation Initiative in economics. He said that he is the Chair for the city of Phoenix's Water and Wastewater Advisory Committee, which sets the rates for the city of Phoenix, so most of his work experience is around rates and rate setting. He explained that the city of Phoenix has been raising rates to increase revenue to invest in drought resilience, infrastructure for managing risk against the shortage on the Colorado River, and advanced water purification.

Sarah Porter said that the key economic challenge is for areas in the Southwest to make land use, industrial development, and economic choices that are more cognizant of their water constraints. She said that it is very difficult for the people in Phoenix to admit that they do not have water resources available to do everything that everybody wants.

Dave White added that there has been an acceleration in the level of understanding around hydrology and water resources from consultants, which has driven the economic development community, such as the Greater Phoenix Economic Council and the Arizona Commerce Authority, to be much more well informed about water-smart economic development.

Sarah Porter emphasized that there will likely be cities and places that may not be able to achieve their aspirations due to the water shortages.

Ed Chu thanked the speakers for joining.

## Environmental Financial Center Network

**Heather Himmelberger** | Director, Southwest Environmental Finance Center

Heather Himmelberger introduced herself as the Director of the Southwest Environmental Finance Center and described the formation of the Environmental Finance Center Network (EFCN). She offered a disclaimer that her viewpoints and statements are her own and do not imply that her organization is better than others. She explained that the first 10 Environmental Finance Center (EFCs) were specifically chosen to be at universities. She highlighted several examples showing how being a university EFC is beneficial because they offer neutral services, are results-oriented, are innovative, and have access to university resources. She underscored that neutrality is very important so that everyone can receive help respectfully, despite personal perspectives or views. She highlighted how EFCs can be catalysts for change and emphasized how many EFCs work with and hire university students as full-time employees.

She explained that EFCs do training, TA, operator certification for Tribes, workshops, and green infrastructure with water and wastewater; however, EFCs do not work exclusively on water. She highlighted an example of a partnership with the city of Albuquerque to synthesize and communicate data from the San Jose Pool Air Quality Monitoring Trailer, where the EFCs are working with the city to figure out the best ways of communicating the results of the sampling to the customers in that area.

She described how many different EFC organizations signed onto the MOUs and EFCN bylaws in Albuquerque in 2002. She pointed out that the EFCN is a product of the EFCs, not the EPA. She said that the power of the EFCN is a strong bond and collaboration, since the EFCN sets rules for collaboration at the exclusion of competition. She added that each EFC has different specialties and the EFCN helps the EFCs continue even in the absence of EPA base funding. She explained that EFCs leverage funds with a wide array of other sources, but EPA base funding is money from the EPA specifically for the multimedia

EFCs (MM EFCs). She explained that there is a lot of project-specific money available, but there needs to be more MM EFC funding, which allows them to do more general projects. Heather Himmelberger said the EPA is missing out on innovation that could occur if there was more MM EFC funding.

She said that true EFCs are committed to the EFCN structure, not just for a specific project. She added that EFCs are not advocacy organizations; their neutrality would be affected if they advocated. She explained that generally universities are thought of as research or teaching, but EFCs fit within the third branch of the university: public service. She reiterated that calling something an EFC does not make that organization the same as a true EFC. She concluded by saying that she has been in the EFC world for 30 years and believes it is a great program.

Kerry O'Neill thanked Heather Himmelberger for sharing and opened the floor for questions.

Ed Chu added that the TA letter that the Board sent to the EPA also supports the work of the EFCs as a leverage point to help deliver TA to communities. He encouraged attendees to review the TA letter.

Angela Montoya Bricmont thanked Heather Himmelberger for her presentation and asked about the EFCN. She asked what each center's expertise is, whether those specializations are fluid or intentional, and if their specializations are listed on their websites.

Heather Himmelberger responded that the specializations are fluid so that they can continue to grow and evolve as times change. She added that EFCs are somewhat intentional in their specialties so that each center is different. She described examples of food waste and pollution prevention as topics that have been identified as specialties at certain centers. She agreed that the specializations may not be fully transparent on their websites. She said that all EFCs work in water in one way or another, so there are overlaps, but there are significant differences at each center which allows them to pull in expertise from different places and a lot broader in their specialties.

Ed Chu added that a lot of the EFCs were set up initially to help communities based on regional needs. He said that when he managed Region 4, there were two centers in the region and the EFC at the University of North Carolina (UNC) was working on climate and energy issues because it was a need in that region. He added that, when the EPA began to run out of money for the EFCs, the centers began to consolidate specialties to function without support from the EPA. He explained how there is a lot of money currently, so the EPA is funding other programs which is a reflection on the evolution of the EFCs, as well as an evolution of the specialties in response to the current issues. He said that the EFC program has been a long-time EPA-supported program success. He complimented Heather Himmelberger's tenure at the Southwest EFC in New Mexico, where there has been an evolution of the program as well.

Heather Himmelberger added that the other EFC in Region 4 used to focus on brownfields when brownfields could be grant-supported. She said that Region 4 has the largest number of states, so it made sense to have two EFCs in the region at UNC and University of Louisville. She said that, even within water, there are specialties, such as rate-setting versus technical specialties. She clarified that EFCs get about \$50,000 under the MM EFC award and then millions of dollars under the other programs to work with rural small Tribal systems, small systems, and BIL. She said that they are flush with money from the EPA on project-based work, but the MM EFC money is more flexible with how it can be used, so it can be flexible to meet the specific needs of the region. She reiterated that they are not lacking in funds; however more innovation could be done with more MM EFC funds.

Sarah Margaret Lee asked whether they are working with communities and utilities on brownfields or on pollution prevention. She asked whether they are working with manufacturers in business or industry.

Heather Himmelberger responded that she does not work with pollution prevention directly at the Southwest EFC so cannot speak more specifically on that topic; however other centers do, such as Syracuse University. She said that Region 1 is doing some pollution prevention work specifically around microbreweries. She explained that her center is not well-positioned enough to pursue that work. She added that EFCs are not doing brownfields currently though they are doing pollution prevention work.

Ed Chu added that some of the TA letter advice to the EPA recognizes that the EPA money is very fragmented, as it is dedicated to specific programs or projects. He said that an example is brownfields; although EFCs do not work with brownfields, the brownfields program has different TA providers (e.g., Kansas State has their own assistance centers funded by the brownfields program). He emphasized that EFAB discussed the lack of a unified place for people to go to for support. He explained that there was an initial attempt with the EFCs to have a unified center, but because of the nature of the project-specific funding, such as the IRA, BIL, and Superfund, the programs are fragmented.

Sarah Margaret Lee clarified that her question was more about whether there were programs through the EFCs that focus on industry or manufacturing businesses, or if EFCs focus on communities.

Heather Himmelberger responded that the EFCs do not exclude businesses, but they are overall much more community focused.

Ed Chu added that there was a conversation about certain providers, contractors, and industry members in the TA letter as well. He explained that the EPA has typically done direct outreach to communities rather than working with companies. He said the letter also addressed contractors, but the private sector has not been the focus of outreach.

Stacy Brown asked how per- and polyfluoroalkyl substances (PFAS) may be affecting small wastewater treatment plants, and if so, what is currently being done. He asked what challenges are apparent right now (e.g., equipment upgrades, financing, and treatment) and where they can help finance smaller facilities.

Heather Himmelberger said that the big issue for both water and wastewater is how to get their attention on emerging contaminants when there are many other basic needs they need to attend to. She said that another challenge is identifying what kind of sampling and testing is needed to identify PFAS when it is present. She explained that, at University of New Mexico (UNM), they are trying to get their equipment upgraded to analyze water and wastewater samples for emerging contaminants, including PFAS. She added that there is the third issue of how to treat PFAS and what to do if there is resulting waste or media from treating PFAS. She concluded by saying that the conversations are just beginning and that they need assistance with everything – the way to talk to systems so they care, how pervasive the problem is, treatment technologies, and understanding how to deal with the waste.

Albert Cho commented on the range of work that EFCs do and asked if it is correct to say that EFCs are the cooperative extension services for the EPA, or whether there is a better analogy. He also asked for more clarification on the statement “calling something an EFC does not make it an EFC” considering the new EFCs from the BIL funding and what it would take to make those “real EFCs.”

Heather Himmelberger said that she describes EFCs as a nonprofit consulting firm, in that they act more like a consulting firm than a typical university employee. She said that it is not a bad analogy to say extension of the EPA, though they have many clients other than the EPA and are always adapting based on funding. She explained that the EPA has been putting out requests for applications for EFCs, but the new EFCs do not have a long-term commitment to the EFC structure. She said, for example, a BIL EFC said they would only function as an EFC for five years. She explained that this structure does not allow for long-term non-competitive collaboration and additionally, some EFCs that were hired are competitors. She explained that true base grant EFCs have a long-term commitment to EFC work and will always have a non-competitive collaborative relationship with other EFCs in the EFCN. She reiterated that being at universities gave EFCs a lot of unique features that do not exist in other entities, and so university EFCs also operate differently from the new EFCs.

Kerry O'Neill thanked Heather Himmelberger and the Board for engaging in the conversation.

## EFAB Forward Planning

**Kerry O'Neill** | EFAB Chair

Kerry O'Neill summarized that there were three charges to the EFAB: 1) the Industrial Water Reuse Tax Credit charge, which will wrap up once the transmittal letter is sent; 2) the Water Affordability charge, which will wrap up in the next two to three months; and 3) the GGRF charge on private capital mobilization, which will wrap up over the next month.

Ed Chu reviewed some basic EFAB processes for new members. He explained that all EFAB meetings are public because they are a federal advisory meeting as defined by the Federal Advisory Committee Act (FACA); however, the law and regulations allow workgroup meetings and administrative meetings to be non-public meetings. He explained that the Board has operationalized workgroups by requiring workgroups to be a minority of the Board members (currently 35 EFAB members; workgroups can have a maximum of 17 members) and therefore, whenever there is a quorum, the meeting is required to be public. He explained that public meetings must be announced in the Federal Register, which must be published at least 15 days prior to the meeting date and have agency-approved language. He explained that the EFAB Chair sets up workgroups so that they can be more efficient and effective in their work; however, the default is for meetings to be public and to allow the public an opportunity to join. He reiterated that everything done during a public meeting is a matter of record and is also posted to the National Archives and Records Administration (NARA).

Ed Chu stated that workgroup products are not automatically official products of the Board. He explained that consensus is required on the products before they are considered official products of the Board. This consensus process ensures that there is integrity and transparency in the creation of EFAB products because the Board is structured to ensure a variety of members with different areas of expertise that represent the different sectors and perspectives. He clarified that any materials presented during the public meetings get posted online and become publicly available; however, being a public document is different from being an officially approved product of the Board.

Kerry O'Neill added that there have often been draft materials that are presented and made public, and then a final Board-approved version. She reiterated that there would be a separate meeting to vote on the Water Affordability Workgroup final documents; this would likely occur in a virtual meeting. She said the GGRF Workgroup product would likely be approved via email.

Kerry O'Neill asked if any new members wanted to join the Water Affordability Workgroup in the final months. Jenny Poreé, Aaron Smith, and Sarah Margaret Lee requested to join the workgroup; Kerry O'Neill approved.

Kerry O'Neill asked if any new members wanted to join the GGRF Workgroup. Jodi French, Anna Smukowski, and Uche Isiugo requested to join the workgroup; Kerry O'Neill approved.

Kerry O'Neill said that once all three workgroups have completed their work, the Board will be turning to new charges in the Spring meeting. She noted that there will be new EPA priorities based on the new administration. She opened the discussion on ideas for new charges.

Albert Cho said that they could explore cross-national and cross-geographical examples of incentives that have worked well for industrial reuse adoption. He suggested looking to Singapore, which has an effective system in place, and other jurisdictions to get a sense of what might be effective and including perspectives from other experts outside the Board to assist in the design.

Kerry O'Neill said they could potentially have a conversation with Justin Mattingly about follow-up work and developing an additional charge if there was interest from the Board.

Jenny Poreé expressed interest in the topic of rural issues, smaller utility issues, and regionalization issues. She said that it would pair nicely with Dennis Randolph's earlier comment about affordability, as well as asset management for smaller, more rural utilities. She emphasized that smaller utilities have very different customer bases and workforce challenges.

Cynthia Koehler agreed and reiterated that the Water Affordability Executive Summary and Recommendations were more appropriate to mid-sized to large utilities. She suggested that there should be an exploratory group as opposed to a charge, because smaller communities are faced with distinct issues from large utilities, such as issues with access to drinking water or sanitation. She emphasized that this exploratory group should be formed separately from the current Water Affordability Workgroup, as it needs different expertise. She said they should emphasize the importance of small communities' issues and make it clear that the final water affordability report does not address those issues while also recognizing that it is a critical next step. She reiterated that the exploratory workgroup would be valuable on the heels of the report.

Ed Chu said that every recommendation and document created by EFAB is posted online. He noted that the first Small Community Financing Strategies for Environmental Facilities was published by EFAB in 1991, so he urged the Board to look at the document and consider it for updates, as there have likely been many technology, funding, and policy changes.

Jeff Diehl said another idea to consider is creating a charge or letter to the EPA about organizing what the GGRF program has currently, such as driving collaboration around the awardees who have received awards from GGRF to encourage replication, standardization, and acceleration of funding allocations. He said that the EPA can take a leadership role with the GGRF awardees. He reiterated that EFAB could create a charge or a letter that could provide recommendations to the EPA.

Lori Collins suggested bringing the resiliency lens to the money and effort with GGRF projects. She recognized that the rules had already been set, but it could be a complimentary aspect. She emphasized that there are many potential benefits to building projects with resiliency. She suggested building on the conversations around the cost of resiliency and how to overcome barriers around building for resilience.

Anna Smukowski added that resiliency is considered a co-benefit.

Lori Collins suggested shining a light on the co-benefits and bringing examples of resilience, as many people still do not understand the terminology around resilience.

Albert Cho suggested expanding on resilience and exploring the first-, second-, and third-order impacts of climate change, such as physical destruction (first-order impact), loss of insurance (second-order impact), and homeowner migration from areas that face difficulties in acquiring insurance policies or face increased climate disasters (third-order impact). He suggested that the Board could pursue a project around understanding these financial impacts on water utilities and turning point for utilities which depend on certain rate structures. He added that this idea would explore not only being resilient to natural disasters, but also being financially resilient from an overall risk perspective.

Angela Montoya Bricmont added that the Creating Resilient Water Utilities (CRWU) program is about to put out a second report with specific recommendations to water utilities on public-facing documents, which Curt Baranowski from the EPA leads. She explained that they have also been discussing disclosure – what needs to be disclosed, what is required to be disclosed, how should it be disclosed, and is it consistent. She added that people are making investment decisions based on climate data, which is another issue that arose around insurance rating institutions accessing sophisticated modeling and data. She said this could be an opportunity to combine that with education on the financial viability of these risks, from Albert Cho's suggestion.

Ed Chu said that there was a previous mention around making the EPA's information available and open source to help markets make decisions. He added that this may be a topic that the EPA would want to revisit, though it would depend on the new administration.

Jenny Poreé agreed that disclosure would be an interesting topic and pointed out there were common challenges between water affordability and disclosures, in that large utilities would be able to meet these requirements, but it would be very difficult for smaller utilities to do so. She agreed that a shared data set provided by the EPA would bring a lot of transparency to the market and to newer investors, which would provide many benefits. She explained that rating agencies and insurers use independent data, so a sophisticated investor may be familiar with terminology and have their own data to refer to, but a mom-and-pop who buys a bond and that is their main retirement do not have transparency around rating systems or have other resources for investing.

Anna Smukowski said that there is a lot of overlap between the GGRF, affordable housing developers, and community facilities, particularly around disclosure and standardization of reporting. She said that there will potentially be thousands of new entrants into the climate finance space who have no experience with disclosures or reporting, so there needs to be more explanation across the climate investing industry on what the investments are doing and how they are benefiting their communities. She suggested that the GGRF program explores getting more commonality and standardization around reporting. She explained in the CDFI world, there are many financial transactions that cannot be standardized based on their terms so there is a challenge in creating a standardization that people understand, especially as they are going into a new asset class.

Jodi French agreed with Anna Smukowski's comment and said that more reporting around lessons learned, effectiveness, and basic metrics around where the money is going and what the money is doing will give the EPA and investors more answers and add validity to the benefits of the money. She agreed with Jeff Diehl's comment about money being deployed but lacking capture of the resulting benefits.



Sarah Margaret Lee suggested that another project idea is to explore the practical scalable ways to bring in charitable and philanthropic dollars to leverage federal grants or the GGFRF.

George Kelly recommended talking more broadly about disclosures and exploring how to integrate the different disclosures. He said that Jim Gebhardt, from the EPA Office of Water, has been working on accelerating nutrient reduction using innovative finance and created an action plan, and asked about the role of EFAB. He explained that the EPA has been trying to promote innovative nutrient reduction funding and finance since 2003, but not very successfully. He recommended reaching out to Jim Gebhardt to hear what has been done so far.

Kerry O'Neill proposed requesting Jim Gebhardt provide a briefing about the work during the Spring meeting. She also suggested a briefing on the disclosure work done by Angela Montoya Bricmont and Jenny Poreé. She explained that getting a briefing is a way that they can generate conversation and ideas for EFAB work and said that they could put those topics on the agenda for the Spring meeting.

Albert Cho suggested that another project idea is to explore the use of credit enhancement or other financial products to enhance infrastructure projects, such as loan guarantees, first loss capital, or a broader range of products for water infrastructure.

Kerry O'Neill concluded the discussion by saying that she would regroup with Ed Chu and Tara Johnson, and then send out an email asking for new workgroup volunteers in several areas discussed.

## Public Comments

**Celina Mahabir** | Federal Policy Advocate, Community Water Center

Celina Mahabir thanked the Board for talking about affordability issues and introduced herself as a Federal Policy Advocate for the Community Water Center (CWC). She explained that the CWC is a frontline community-led organization, working to achieve the right to safe, clean, and affordable drinking water and wastewater in low-income farm worker communities across California. She recognized that the workgroup has worked on a report to address the affordability crisis in midsize or larger ratepayer bases, but in California alone, there are nearly 1 million households that rely on small and rural systems that are failing due to contamination, limited supply, and unaffordable rates. She added that many families are also paying for water twice, once for contaminated water from the tap, and again for alternative water sources such as bottled water delivery. She said that the California water and wastewater bill debt amounted to just over \$1 billion during the COVID-19 pandemic alone. She asked the Board to adopt the following recommendations in implementing solutions to address the growing water affordability crisis, especially for small and rural systems:

1. Consider systems that have been severely underfunded or disinvested in that are struggling to meet basic technical, managerial, or financial capacity standards, let alone the implementation of intelligent infrastructure.
2. Prioritize community-driven solutions and investments that not only encompass the needs of utilities, but also the most affected rate payers to create solutions that are safe and affordable.
3. Dismiss the inclusion of prioritization criteria in selecting utilities to receive SRF funding, as this can perpetuate inequity and broaden the gap between compliant and failing systems.
4. Focus on solutions that prioritize allocating critical resources as soon as possible in tandem with data collection through the studies recommended by the group.

5. Recommend a permanent national water assistance program.

She emphasized that they would like to see support for communities on the ground as soon as possible. She thanked the Board for the opportunity to share her comments.

Ed Chu thanked Celina Mahabir for her comment and requested she send a written comment to accompany her verbal comment.

**Max Gomberg** | Advisor, Water Equity and Climate Resilience Caucus

Max Gomberg introduced himself as an advisor to the Water Equity and Climate Resilience Caucus (WECR). He explained that the WECR is a nationwide coalition of several dozen environmental justice organizations, including the CWC. He said that the WECR is focused on water affordability, including pushing for a permanent national assistance program, modifications to the SRFs, and for the EPA to do a comprehensive needs assessment in other areas of federal policy. He expressed appreciation that the EPA gave the Water Affordability charge to EFAB and for the work that the Board did on this topic. He suggested that the executive summary comes up short on what is currently needed. He said that CAPs at the local level are inadequate; most systems lack the capacity or legal authority to authorize full-scale assistance programs, and therefore it is incumbent upon the federal government. He said that the time has passed for pilot programs; the Low-Income Household Water Assistance Program (LIHWAP) program that operated for the past few years can be considered a pilot program which met a critical need, and the need for a national program still exists. He emphasized that a fully funded national program is needed to assist people who are struggling with covering their bills. He also urged the EPA and EFAB to seek input from the National Environmental Justice Advisory Committee (NEJAC), as the committee has a different membership, perspectives, and experiences that could help inform the completion of the report and recommendations. He thanked the Board for the opportunity to share his comments.

Ed Chu thanked Max Gomberg for his comment and requested he send a written comment to accompany his verbal comment.

Cynthia Koehler asked if it was possible to send the Executive Summary to the NEJAC for feedback, since it is currently a public document.

Ed Chu responded yes; they can send the document to the NEJAC. He added the EFAB has historically done projects separately with the NEJAC and that they may still have a liaison. He explained that they should be also engaging with the OEJECA as well. He asked whether the Board would want to do that before the delivery of the product to the EPA.

Cynthia Koehler agreed that it would be valuable to approach NEJAC before their deliverable goes final.

Kerry O'Neill suggested talking offline as a workgroup and with the client.

## Day Two Wrap-Up & Adjourn

**Ed Chu** | EPA Designated Federal Officer

**Kerry O'Neill** | EFAB Chair

Kerry O'Neill concluded by saying that it was a highly productive meeting with a lot accomplished on the charges and deliverables. She expressed pride in the assimilation of the new members. She thanked Ed Chu for the opportunity to learn more about Arizona, the region, and the initiatives at the university. She said that she looked forward to the Board's future work.

Ed Chu announced that they will be asking for EFAB member nominations starting in November. He explained that approximately half of the Board members are coming up for either renewal or term expirations. EFAB members have a six-year term limit and must renew their membership every two or three years. He encouraged members of the public to submit comments to [efab@epa.gov](mailto:efab@epa.gov) and said that those will be shared with the Board and on [the EPA's website](#). He said they are looking forward to the final GGRF webinar and the Spring meeting, which will occur in DC.

Ed Chu thanked Tara Johnson and the staff for all their effort and work to coordinate the meeting. He thanked all the workgroup members and workgroup chairs for their work.

Ed Chu adjourned the meeting.