



**OFFICIAL MEETING OF THE U.S.
NATIONAL AND GOVERNMENTAL ADVISORY
COMMITTEES
(NAC/GAC)**

Minutes

April 16–17, 2015

William Jefferson Clinton North
EPA Conference Room B-305
1200 Pennsylvania Avenue, NW
Washington, D.C. 20004

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Thursday, April 16, 2015

Call to Order and Introductions

Oscar Carrillo, National and Governmental Advisory Committees (NAC/GAC) Designated Federal Officer (DFO), Office of Diversity, Advisory Committee Management and Outreach (ODACMO), U.S. Environmental Protection Agency (EPA)

Mr. Oscar Carrillo, NAC/GAC DFO, ODACMO, called the meeting to order. He greeted the participants and thanked them for attending, noting that it was the 45th meeting of the committees. Mr. Carrillo stated that the purpose of the meeting was to work on the issues of the Commission for Environmental Cooperation's (CEC) Operational Plan, Traditional Ecological Knowledge (TEK), the North American Partnership for Environmental Community Action (NAPECA) grants, and ways to better communicate the CEC's work to external and internal partners. Mr. Carrillo asked the meeting participants to introduce themselves. He then introduced Brian Houseal, Chair of the National Advisory Committee (NAC), and Jeffrey Wennberg, Chair of the Governmental Advisory Committee (GAC).

Welcome and Overview of the Agenda

Brian Houseal, Chair of the NAC

Jeffrey Wennberg, Chair of the GAC

Mr. Houseal greeted the participants and thanked them for volunteering as members of the NAC/GAC. He also thanked Mr. Carrillo and all of the EPA colleagues for arranging an in-person meeting and offered a special welcome to Irasema Coronado, Executive Director, CEC Secretariat, and Mr. Bob Varney, Joint Public Advisory Committee (JPAC). He emphasized to the participants that the meeting was open to discussion of any North American environmental topic that the members deemed important. If the NAC/GAC believes an issue is important, EPA Administrator Gina McCarthy will hear about it from the committees. NAC/GAC advice has resulted in changes; for example, committee suggestions led to revisions to the process for Submissions on Enforcement Matters (SEM). More recently, after a July 2014 meeting in Yellowknife, Northwest Territories, Canada, TEK is now embedded in the CEC's thinking about how it will proceed. Administrator McCarthy pointed directly to the NAC/GAC's influence on that development.

Mr. Wennberg noted that he had served as the GAC Chair for 4 years and was term-limited out after 6 years, so he brought a unique perspective. He was pleased to be invited back to serve as the GAC Chair. During his prior 6 years on the GAC, the pace at which its advice was adopted was very slow, but now there is an impressive amount of progress. Having been away for 2 years, he can see clearly that many suggestions proposed by the NAC/GAC have been embraced and are being implemented. The process is slow because the CEC is a trilateral body and each nation, as an equal partner, has its own priorities. He congratulated EPA for its extraordinary skill in the diplomatic negotiations. He called upon Ms. Denise Benjamin-Sirmons, Director of ODACMO, to introduce Mr. Karl Brooks, Deputy Assistant Administrator, Office of Administration and Resources Management (OARM).

Ms. Benjamin-Sirmons thanked the NAC/GAC Chairs for their remarks and for their service and also thanked all the participants for traveling to the meeting, which she expected would produce very beneficial results. She stated that regrettably Ms. Jane Nishida, EPA Acting Assistant Administrator for the Office of International and Tribal Affairs (OITA), was unable to join the meeting due to conflicting priorities. Ms. Benjamin-Sirmons also thanked Mr. Carrillo and the ODACMO team for their tireless efforts in organizing the meeting, noting that Mr. Carrillo has taken on additional responsibilities as the Acting Staff Director for ODACMO's Committee Management, in addition to serving as the NAC/GAC DFO. Ms. Benjamin-Sirmons introduced Mr. Brooks, the new leader of OARM, providing a brief overview of his background, including as EPA Region 7 Administrator, and noting his passionate commitment to the work of the NAC/GAC.

Opening Remarks

Karl Brooks, Deputy Assistant Administrator for OARM, EPA

Mr. Brooks welcomed the NAC/GAC members and stated that EPA values the members' service. As an Idaho state legislator, Mr. Brooks learned about the importance of working together with people to achieve results, and he thanked the NAC/GAC co-chairs, as well as Mr. Varney and Ms. Coronado, for their participation. In beginning his work with OARM, starting in March 2015, Mr. Brooks has been impressed with the uniqueness of the NAC/GAC and EPA relationship. No other Agency works as hard as EPA to listen to the different perspectives that stakeholders have on the direction the Agency should take. The NAC/GAC members come from very diverse American communities, and the perspectives of the members are among the most valuable because they have non-federal experience with EPA programs and can serve as an advance guard regarding EPA's future as the Agency closely hews to its statutory obligations. The NAC/GAC can both highlight opportunities available to EPA and provide warnings if the Agency is missing opportunities. He noted that the July 14–15, 2015 CEC meeting in Boston, Massachusetts, will provide an important opportunity to engage on longstanding and emerging issues. EPA listens closely to the NAC/GAC's advice and responds to the challenges the committees pose. Mr. Brooks said that the job of ODACMO and OARM is to provide the NAC/GAC with the tools it needs to engage on important issues, and he offered his good wishes as the members pursued their ambitious meeting agenda. He again thanked the members for their service.

Mr. Wennberg thanked Mr. Brooks and said that the members look forward to working with him. He introduced Ms. Neilima Senjalia, EPA Acting Director, Office of Regional and Bilateral Affairs, OITA. He reported that earlier in the week he and Mr. Houseal had an opportunity to speak with Ms. Nishida and Ms. JoAnn Chase, Director, American Indian Environmental Office, OITA, by conference call. Ms. Nishida and Ms. Chase offered their apologies for the last-minute scheduling conflict that required them to travel to the West Coast. He noted that Ms. Senjalia would represent Ms. Nishida in presenting an update on U.S. priorities and guidance.

Update on U.S. Priorities and Guidance (Council Session, Strategic Plan, Operational Plan, TEK)

Neilima Senjalia, Acting Director, Office of Regional and Bilateral Affairs, OITA, EPA

Ms. Senjalia welcomed the NAC/GAC members and thanked them for their service, which has made a significant difference to EPA, including in the promotion of TEK as an important EPA priority. She expressed gratitude to Ms. Benjamin-Sirmons, Mr. Brooks and the ODACMO staff for their hard work. Ms. Senjalia reported that the CEC Alternate Representatives (Alt Reps) met on March 31, 2015, in Washington, D.C., and discussed the items on the NAC/GAC meeting agenda. She noted that meeting participants included Mr. Varney, Ms. Coronado and Ms. Sylvia Correa, Senior Advisor for North American Affairs, OITA.

Ms. Senjalia began by reviewing the status of the CEC Strategic Plan. The goal had been to produce a draft in time for the NAC/GAC meeting, but the draft is not yet ready. The Alt Reps want to ensure that the 5-year plan takes a broad enough outlook to sufficiently cover issues that could arise over the 5-year period and that it considers developments occurring globally. The Strategic Plan also will include output and outcome performance measurements, which are CEC priorities. In addition, the new Strategic Plan will acknowledge the value of TEK for climate change mitigation and adaptation, a new area in the plan.

Ms. Senjalia stated that the NAC/GAC has received a copy of the Operational Plan (OP), which includes 15 projects, some of them brought to EPA's attention by the committees. New projects include blue carbon and using ecosystem function and TEK to adapt to climate change. Other projects are focused on the CEC's three priorities of climate change: mitigation and adaptation, green growth, and sustainable communities. EPA looks forward to receiving additional NAC/GAC advice on the OP projects.

Ms. Senjalia next discussed NAPECA, which provides grants at the community level for environmental projects that play an integral role in achieving the CEC's goals. At the March 31, 2015 Alt Reps meeting, the Alt Reps acknowledged the importance of these grants. The next round of grants will be launched this summer. Ms. Senjalia also reported that the Alt Reps are developing a list of 15 TEK experts, five from each country (Canada, United States, and Mexico). The five U.S. experts have been confirmed, but Canada and Mexico have not yet confirmed their lists. The Alt Reps also are planning a "terms of reference" document to clarify the roles and responsibilities of the TEK experts and to provide examples of TEK.

Ms. Senjalia mentioned the CEC session to be held July 14–15, 2015, in Boston, Massachusetts, with the United States as the session Chair. The agenda is still under development, but it should be available on the CEC website in May. The meeting will feature a public forum on July 14 hosted by the JPAC, and the CEC session on July 15 will include a public session attended by the three Council members. The meeting theme will be climate resilience and adaptation.

Question and Answer Period

Mr. Houseal added information about a segment of the CEC's Boston meeting that Ms. Nishida had mentioned. There will be a Town Hall meeting, at which Ms. Nishida thought it would be

appropriate to present examples of extreme weather events. Mr. Houseal explained that all NAC/GAC members would have stories about extreme weather events in their communities. Ms. Nishida asked NAC/GAC members to notify her of people who would be willing to attend the Town Hall meeting by teleconference to discuss particular events. Members should send an email to Mr. Houseal, Mr. Wennberg, Mr. Carrillo or other staff with any recommendations. Administrator McCarthy wants examples of events beyond Boston's own extreme weather experience.

Mr. Wennberg stated that he hoped the Strategic Plan would be available for the JPAC to review at its April 23–24, 2015 meeting in Monterrey, Mexico, and asked if the NAC/GAC could comment on the plan outside of its meeting if the Strategic Plan is made available for the JPAC. Ms. Senjalia responded that the NAC/GAC could comment; a way would be devised for that to occur. Mr. Wennberg emphasized to the meeting participants that the timing of when the NAC/GAC receives the Strategic Plan will determine the members' ability to provide comments. Not all members will be able to respond, but in case there is an opportunity to comment, he recommended that the NAC/GAC members monitor their emails and provide comments quickly. The Strategic Plan is important and there may not be another opportunity to comment before the CEC meeting.

Ms. Therese Goodmann (City of Dubuque), GAC member, noted that Mr. Brooks was the EPA Region 7 Administrator and did an excellent job primarily because he had to address water issues frequently. He spoke at the America's Watersheds Initiative—which includes 31 U.S. states and two Canadian provinces, encompassing six watersheds—about the problems of flooding and drought in the Midwest and elsewhere and the potential for water wars. California faces the possibility of a 30-year drought. She stated that she was pleased Mr. Brooks was in a leadership role, given his understanding of water issues. She noted that the Mississippi River Cities and Towns Initiative (MRCTI) is a new group that is largely funded by the McKnight and Walton foundations. The MRCTI is struggling with adaptation and resilience because of water issues, such as flooding. She observed that cities lack funding for water infrastructure.

Mr. Tracy Hester (University of Houston Law Center), NAC member, asked if written comments would be accepted during the public input session of the CEC's Boston Town Hall meeting. He also asked if the purpose in taking public comment was simply to hear about their experience or for a more specific purpose, such as requesting ideas for the CEC to consider. Ms. Correa, who is the lead organizer for planning the CEC session, responded that there would be an opportunity to submit written comments. In the past, written comments have not been submitted, but it was a possibility she offered to discuss with Mr. Hester. She suggested that the CEC Secretariat could establish locations in universities or EPA regional offices at which people could participate through the new remote technologies. She invited additional suggestions for such venues or "hubs."

Mr. Houseal added that in the phone conversation with Ms. Nishida, she had mentioned that Administrator McCarthy will involve the media during the CEC Boston meeting; she will promote President Obama's Climate Action Plan and is likely to generate significant media interest. He asked Ms. Coronado if she had additional comments on the topic. Ms. Coronado

stated that the technology is available to enable engagement at the Boston meeting and that the CEC would accept written comments.

Mr. Kirk Cook (Washington State), GAC member, suggested that extensive public participation could be expected because every part of the country is touched by extreme weather. With the possibility that too many people will want to participate, it might be necessary to ask for a single spokesperson to represent groups of people. Mr. Hester asked if he could Tweet from the meeting. Mr. Mark Joyce, Deputy Director of ODACMO, responded that all NAC/GAC members were encouraged to reach out to their colleagues and communities. Ms. Correa cautioned, however, that a NAC/GAC hash tag could not be used for the CEC, only for the committees, whose advice is for the EPA Administrator as the U.S. representative on the CEC, a point Mr. Joyce underscored. Mr. Wennberg emphasized that all NAC/GAC meetings are public and members are allowed and encouraged to reach out to their networks, but they should not imply that they speak for the committees, which communicate only through advice letters.

Dr. Cecilia Martinez (Center for Energy and Environmental Policy), NAC member, suggested that public input at the Boston CEC meeting should reflect not only a diversity of regions but also a diversity of experience regarding climate change resilience and adaptation. A city's government and communities can have varying experience, and tribal representatives should be present. She asked for a definition of the purpose behind seeking public input. Ms. Correa responded that for the CEC session, the purpose of the Town Hall meeting is to generate a discussion between the participants and the trilateral CEC Ministers. Focusing too much on a local community's experience may not produce such discussion, because the Ministers take a broader regional and national perspective. Dr. Martinez clarified that she was not recommending a highly localized focus, but "vulnerable communities" is a crosscutting theme, so those experiences should be part of the discussion. Mr. Varney added that at the JPAC Town Hall meeting, the format will include short statements from the Ministers followed by questions delivered through various methods. He emphasized that, with many people wanting to make statements, efficiency will be important. Longer statements should be saved for the JPAC meeting sessions.

Dr. Michael Dorsey (Joint Center for Political and Economic Studies), NAC member, stated that the Town Hall comments should not focus on extreme weather stories *per se* but on best practices before and after the events, including the collaboration that occurred and the institutions and knowledge building developed in response to the events. Mr. Varney added that participants also should be guided to comment on how they believe governments should address the issue of extreme weather. Those views were endorsed by several NAC/GAC members. Mr. Cook called for a focus on how weather events have affected large areas, including labor issues, agriculture, hydropower, food quality as water becomes increasingly scarce, and other such topics.

Mr. Timothy Bent (Bridgestone America), NAC member, and Ms. Mary Klein (NatureServe), NAC member, both highlighted their support for the idea of Tweeting to broaden communications. Dr. Theresa Pardo (Center for Technology in Government), NAC member, stated that she and another member jointly Tweeted that they were happy to be at their first meeting of the NAC, with a URL for the NAC/GAC included. As a result, 800 people were

instantly informed about the meeting and the committee members received a demonstration of the potential for the Twitter communication method as a whole new substitute for press releases. She offered to work on communications issues that were on the agenda.

Ms. Gail Small (Native Action), NAC member, added that the question of how governments should address the issue of extreme weather provides a useful framework for how different governments can work together, an issue that is creating a new paradigm for addressing climate change mitigation and adaptation. She does not want indigenous people to be an afterthought; as the new paradigm is being built, tribes should be brought into the discussion. Tribes along national borders should be identified as participants in cross-border solutions. The Federal Emergency Management Agency (FEMA) has hindered Indian tribes' involvement. For example, FEMA disregards tribes' plans for addressing fire and other issues.

Ms. Correa noted that Administrator McCarthy is very interested in EPA having a positive effect on vulnerable communities. A TEK presentation is planned for the agenda of the Boston meeting of the CEC. Mr. Varney agreed with the importance of Ms. Small's statements, noting that some coastal communities are losing their lands to rising oceans and have nowhere to go. Many vulnerable communities are well organized, but others are not, especially in Mexico. Mr. Hester asked if EPA's Office of Environmental Justice (OEJ) is involved in discussions of vulnerable communities and TEK issues. Ms. Karin Koslow, Deputy Director, American Indian Environmental Office (AIEO), EPA, coordinates closely with OEJ, which has staff for a tribal component. Mr. Joyce added that EPA's Good Neighbor Environmental Board (GNEB), which is charged with producing an annual report to the President and Congress on U.S.-Mexico border issues, is developing a report on climate change resiliency in the border area. The GNEB report will address many issues that the CEC and JPAC will face in the coming years, so definite opportunities exist for collaboration.

Update on Tribal Issues

Karin Koslow, Deputy Director, AIEO, OITA, EPA

Ms. Koslow stated that she was representing AEIO Director JoAnn Chase, who sent her greetings, to talk about the work of that office. She observed that the Strategic Plan's three crosscutting themes overlap extensively with AEIO's priorities and the connection with tribal governments is important to maintain. How to integrate TEK into EPA's work is becoming an increasingly important topic in many areas.

EPA has just completed celebrating the 30th anniversary of its 1984 Indian Policy, which established the nine principles for how the Agency interacts with tribal nations and governments. Although the meaning of the principles has changed over time, the document remains timeless. Change is slow, but it is occurring, and programs for the 566 federally recognized tribes are growing because they have been successful. Administrator McCarthy—and every EPA Administrator since 1984—has reaffirmed the policy, and for 3 years, training on the Indian Policy has been mandatory for every EPA employee. AEIO is now working on a policy document related to treaty rights; administrative barriers for tribal grants have been removed; and the process for delegating EPA programs to tribes has been streamlined. In 1984, no EPA statutes had provisions for delegation to tribes; today more than 100 programs have been

delegated to tribes. Ms. Koslow stated that climate change is a critical issue for the tribes and she will work to ensure tribal voices are heard at the Boston CEC meeting.

AEIO has many partnerships, including with the National Tribal Caucus (created in 1994), which meets regularly. EPA is now bringing states to the table to discuss issues with tribes, with climate change as a focus. More specialized tribal councils also have been formed to address water, air and other issues. The budget situation is very challenging, with less money for increasingly complex issues. Tribal programs, however, have maintained budgets or requested increases. For fiscal year (FY) 2016, a \$31 million increase was requested for grants to build tribal capacity for environmental programs, along with a \$50 million clean and drinking water set-aside and an additional \$3 million for sustainable waste management. A current AEIO priority is to develop recommendations for the White House Council on Native American Affairs, involving more than 20 federal agencies. EPA and the Department of Interior are co-chairs for the climate change subgroup that is developing a proposal that might be released in coming months for on-the-ground climate projects and adaptation and mitigation tools for use in tribal communities.

AEIO has communicated to the tribes that CEC has embraced TEK, and Ms. Koslow commended the NAC/GAC for recommending TEK as a priority. The University of Tulsa, Cherokee Nation, Navaho Nation and other partners are working under a grant of almost \$1 million to reduce children's home and school asthma triggers using a total exposure approach based on TEK. Another grant at Little Big Horn College and Montana State University is funding a study using TEK in climate models for existing and projected hydrological impacts under climate change. Ms. Koslow concluded by noting that Ms. Nishida and Ms. Chase were out West working on President Obama's recent Generation Indigenous Initiative.

Public Comment Period

Before resuming the discussion with Ms. Koslow, Mr. Houseal asked if there were any public comments, either in person or via teleconference. There were none, so Mr. Houseal closed the public comment period.

NAC/GAC members were invited to ask questions of Ms. Koslow. Ms. Small commented on the need for more timely EPA responses regarding the Clean Air Act, Clean Water Act and other program delegations. Transparency also is needed, for example, on EPA's criteria for approving tribal water quality standards. In a Northern Cheyenne Reservation case in Montana, it took 9 years to receive EPA approval of the tribal water quality standards, which were stricter than Montana's standards. During the 9 years, a coalbed methane gas boom occurred, and the tribe was unable to protect its primary river and drinking water source quality. When asked about the delays in approval, EPA responded that it was an issue of national significance. Furthermore, adequate funding is not provided for delegated authority. For example, air quality monitors were needed in Ms. Small's Reservation to enforce Class I air quality standards, but it took 4 years and did not include implementation funding, so the tribe settled with the coal companies to build air quality stations. Climate change requires broader thinking than the AEIO home asthma triggers study.

Ms. Klein asked to what extent EPA works and negotiates with groups of tribes in coalitions, as opposed to single tribes. Ms. Koslow responded that EPA works with many groups, such as the National Tribal Caucus, regional caucuses, and media-specific caucuses. EPA also works with organizations of tribal leaders, such as the National Congress of American Indians, but the Agency also is responsible for fostering the development of individual tribe's environmental programs. Mr. Gerald Wagner (Blackfeet Nation Tribe), GAC member, commented on the relationships between tribes and states, noting that the invitation for tribes to convene with states had been too long coming. The Environmental Council of the States (ECOS) and the National Tribal Caucus finally sat at the same table and had open discussions. They agreed on the need to work together and for better communications between the groups. He attended the 2014 ECOS meeting in Santa Fe, New Mexico, and the March 2015 meeting in Washington, D.C. At those meetings, Mr. Wagner said that every one of the 50 states has tribes, and he asked the ECOS members how they are working with their tribes. He expressed the hope that relationships are moving in the right direction as tribal representatives sit at the table with ECOS and other groups. The recognition of TEK's value is a very positive sign.

Mr. John Bernal (Pima County Public Works Administration), GAC member, announced that in June 2015 there would be a conference sponsored by the University of Arizona Water Resources Research Center, in cooperation with the Gila River Indian Community, on the indigenous perspective on sustainable water practices. He commented on Ms. Koslow's statement about the FY 2016 budget request for drinking water grants, noting that as a local government representative, his office has not relied on federal grants for many years. The \$50 million request sounds like a lot of money, but it is not when compared with the funding needs for building infrastructure. He said that he hoped the budget request provided flexibility for the \$50 million to be used for cooperative work between tribes and state and local government, rather than being strictly earmarked for tribes. Recently, his office worked with the Pascua Yaqui Tribe to develop wastewater treatment capacity for the tribe to address new development. It is difficult for smaller communities or tribes to develop infrastructure on their own with the limited funds available.

Dr. Octaviana Trujillo (Pascua Yaqui Tribe), GAC member, stated that last summer she and Mr. Bernal represented the NAC/GAC at the CEC's Yellowknife meeting, and Administrator McCarthy was excited about the pending decision by the three governments to accept TEK and to have TEK be the process for addressing climate change trilaterally. She thanked OITA and other Yellowknife meeting participants for their efforts on the historic development regarding TEK and the protection of vulnerable communities. She appreciated earlier comments made at the meeting by Dr. Dorsey and Dr. Martinez about knowledge building at the CEC's Boston meeting with the aim of developing civil society and communities so that they are prepared to address climate change. She will discuss these issues with tribal colleges and other universities to help prepare tribes to offer their knowledge about addressing climate change. She also applauded Mr. Wennberg's rejoining of GAC as the Chair.

Ms. Small commented that water development funding has been nonexistent in Indian country for many years, so many efforts are under way to obtain funding. One mechanism tribes have resorted to are water compacts based on their "senior" or first right to a certain amount of the water. In Montana, a Flathead Lake water compact bill is under consideration in the state legislature and has caused a furor. Built into all of the tribal water compacts with states is

funding to build infrastructure, such as for irrigation or flood control. The compacts are one way tribes are managing and developing water resources. A water compact is a modern day treaty that tribes negotiate and that must be approved by Congress and signed by the President. Tribes have had to resort to compacts that quantify their water rights, and this has been the only way they can pursue water development. Dr. Trujillo concurred with Ms. Small's observations, noting that in Arizona there are major issues concerning who will receive the water. The Gila River Indian Community, south of Phoenix, had the country's largest historical water rights case before the Supreme Court, and they were given a major source of water. They will have a very important seat at the table with local and state governments; the tribe's victory involved a nation-to-nation treaty right. Unless state and local governments and other institutions start working closely with tribes, there will be some major issues and conflicts regarding water rights.

Ms. Goodmann thanked Dr. Trujillo for her leadership. She also urged that the best practices mentioned by NAC/GAC members be collected, perhaps at the CEC's Boston meeting. She noted that Dubuque has 1,300 state and federal mandates that are unfunded. States and tribes also must be aware that mandates continue to increase, while funding declines. It is a challenge because there is currently a government that does not believe in government, making defunding a constant threat, so collecting best practices is important.

Mr. Cook commented on the statements by Ms. Small and Dr. Trujillo, noting that there is extensive discussion in Washington State about the relationship between tribes and EPA, the state and EPA, and the state and tribes. One major issue concerns salmon habitat and an infamous white paper regarding tribal rights at risk. The paper contains valuable content, but it has created a rift between the state and the tribes, as well as between states and EPA, largely over water allocation and fish protection. Tribal sophistication varies in the state; some tribes, such as the Yakima, are aggressively pushing tribal rights to the point where there is no interest in interacting with the state, partly because the tribes have a relationship with the federal government, not the state. Emotions are running high on the issue, particularly as Washington State begins to experience drought. Mr. Cook made clear that problems between states and tribes must be resolved so that tribal rights are satisfied, states and industry can continue to operate, and EPA can fulfill its responsibilities to the tribes. This darker side to the issue still needs a significant amount of work.

Mr. Houseal noted that some time ago the NAC/GAC requested that EPA consider water as a trade commodity, especially for out-of-state transfers. Colorado Basin water is exported across the Pacific Ocean, making for a complex subject. Ms. Ana Romero-Lizana (World Trade Center), NAC member, commented that water projects require large amounts of money. Foreign investors under the EB-5 program, which requires a \$500,000 minimum investment, can provide communities with large amounts of money at a very low rate. She suggested that working with economic development agencies to open EB-5 centers would be a way to mitigate the funding shortage issues, rather than constantly seeking EPA funding.

Ms. Carolyn Green (EnerGreen Capital Management, LLC), NAC member, responded to the comments by Mr. Cook. She stated that the idea that tribes should have asserted their rights earlier was mistaken; tribes have tried for many years to assert their rights, but they lacked definitive legal authority. She also asked to what extent the AEIO asthma study would examine

unique tribal features that might make the contributors to asthma different from the typical indoor air quality triggers. Ms. Koslow responded that she could not answer the question directly. She read a summary of the asthma research funded under the Science for Sustainable and Healthy Tribes grant program, which aims at developing a deeper understanding and respect for the living and non-living interactions in and between school and home environments that is a hallmark of TEK. The goal is to develop a more complete total exposure profile for children throughout the day. The Office of Research and Development can provide more details.

Dr. Pardo stated that many international health organizations are exploring new approaches to sustainable development based on “country ownership,” a concept similar to tribal ownership. A growing body of people is working in this new way to build partnerships, with defined responsibilities toward each other, capacity building and other elements. Dr. Abbas Ghassemi (New Mexico State University), NAC member, said that he appreciated the discussion about tribes, but the issues are not limited to tribes. Other people along the border, of various incomes and ethnicities, should not be neglected. Also, the impact of climate change is not limited to water resources, and the other effects should not be forgotten. He expressed concern that the discussion of water resources, allocation, quality and quantity not be lost because water is so precious.

Dr. Trujillo appreciated the comments by Mr. Cook and others about the relationships between government institutions and tribal nations. Historically, the relationships have been difficult, but there has always been an interest in working together to collectively find solutions. The Gila River Indian Community fought for decades over their water rights, and during the years when the issue was being processed within the court system, the community population developed the highest rate of diabetes in the world because of what happened to their water source. Among the Pima, the water problem created major illness and death, and now the community is using its water resources for health and sustainable development. Because of the duration of the conflicts and because of federal Indian nation-to-nation law—the issues are complicated and enmeshed with treaty rights—most of the hard cases have risen to the Supreme Court. Progress must be made along a positive path to avoid very difficult situations ahead. Mr. Wagner added that tribes have recognized for centuries that water is life, and only in the past 30 to 40 years has the dominant society awakened to this view. Tribes have been working in states on many issues with an understanding that water is life. When the water situation deteriorates, only the top 1 percent of the wealthy will be able to afford water, so work must be done now to ensure that does not happen because water belongs to everyone. Mr. Houseal recalled a statement at the 2014 JPAC meeting to the effect that curing water problems will cure many other problems.

CEC Update on the Operational Plan and NAPECA Grants

Irasema Coronado, Executive Director, CEC Secretariat

Mr. Houseal thanked Ms. Coronado for joining the meeting. Ms. Coronado greeted the NAC/GAC members and expressed her great satisfaction in her work as the Executive Director of the CEC Secretariat. She has brought great accountability for the organization’s budget and has empowered the staff, who have clear performance outcomes to achieve, and she has taken other steps to maximize the Secretariat’s performance.

Regarding the current OP, which concludes in 2015, Ms. Coronado stated that there are 15 projects on track. She hopes to have a summary of the OP 2013–2014 deliverables in time for the CEC meeting in Boston. The Secretariat hired a consultant to evaluate its programs and received three recommendations. Based on its program analysis, the consultant recommended that the Secretariat (1) link project outputs to environmental outcomes; (2) be more specific and focused and less aspirational; and (3) consider longer timeframes for projects to show sustainable results. Projects run for 2 years and cost approximately \$200,000 per project. For the new OP covering 2015–2016, the Secretariat has provided the trilateral Parties with a list of the TEK experts who attended the July 2014 JPAC meeting.

The Secretariat needs the NAC/GAC’s help in communication. Along with JPAC, the Secretariat held a public consultation soliciting ideas, opinions, criticisms and recommendations from the North American public regarding the projects proposed for 2015–2016. Only 18 comments were submitted, despite significant outreach through Listservs, emails and other means. Ms. Coronado acknowledged it was a challenge to reach the 500 million people living in North America, but nevertheless the Secretariat can do better than 18 comments, even if the comments were substantive. Program Director Karen Richardson is writing terms of reference and holding consultants accountable, including avoiding plagiarism by applying the software program “Authenticate.” The quality of reports submitted by consultants has improved, thereby saving time and money.

Two issues currently are facing SEM review. One involves a quarry in Chiapas, Mexico, and is aimed at protecting Sumidero Canyon, and the other involves wetlands in Manzanillo. The Secretariat also is waiting for the CEC to vote on tourism development in the Gulf of California. No SEM submissions have been received for 2015, but website inquiries about active submissions have increased from 4,000 visits in 2012 to 13,000 visits in 2014. When a factual record is complete, the Secretariat meets with the affected communities, but communities have complained that the records are too legalistic and difficult to understand. A strategy is being developed to broaden dissemination of information about the CEC and the SEM process using radio interviews, local newspapers, community magazines and bloggers. The Secretariat is hosting more webinars on the SEM process and is seeking a nongovernmental organization (NGO), university or other partner to help communicate with their networks. A 90-second SEM video is being developed, and the Secretariat will work with Spanish-language and other cultural outlets; a SEM webinar in French also is under development.

Ms. Coronado provided an update on the NAPECA program. The Secretariat evaluated the funded grants, and preliminary analysis showed that organizations with a staff of 50 or more people have greater success in reaching larger audiences. For example, one group with a \$27,600 NAPECA grant reached 1,000 people; the Ecologic Development Fund reached 1,000 people with a \$100,000 grant; the Environmental Law Institute reached 200 people with a \$120,000 grant. Ms. Coronado noted that communities being reached are often small, remote, and dispersed, so it can cost more to reach fewer people. The number of people “reached” is determined by the number of meeting participants, number of interactions as a result of a grant, and so forth. The Secretariat is asking the trilateral Parties to review the evaluation materials and provide guidance on accepting only one application per organization, to provide a theme, and to set a cap on grants. Some communities apply for \$1 million in funding, which is almost the

entire amount available.

Ms. Coronado noted that the NAC/GAC can help the Secretariat communicate about the summer consultation period and other CEC news. In closing, she showed the members the poster for the CEC's Boston meeting.

Question and Answer Period

Dr. Trujillo agreed with Ms. Coronado's point about some rural and tribal communities being so remote that it takes time and resources simply to travel to such locations, and she hoped the project evaluators would understand that point. Ms. Small added that it would be important to respond to the evaluators' comments in the administrative record, especially if their criteria are not relevant to vulnerable indigenous communities. She also asked for an example of linking project outputs to environmental outcomes. Ms. Coronado responded that in the OP section on the CEC's priorities, the evaluators asked for a clear definition of the words "learning from and assisting vulnerable groups and indigenous peoples." The evaluator asked how that will be done concretely and how it will be measured.

Dr. Pardo asked if NAPECA is available for projects focused on capacity building. She also asked for criteria defining the most successful projects and clarification between generic and project-specific criteria. It may be that opportunities to mine the projects for insights are being lost. She noted that an organization had provided 10 small grants to communities to disseminate information to their members, with a requirement that they develop a communication strategy. Teams that received grants built their skill sets for reaching out, creating websites, Tweeting and using other means. She noted the importance of determining a community's technological capacity to receive communications.

Ms. Coronado described the Secretariat's process for reviewing grants, and noted that 18 applications were funded out of 1,000 submissions. All the grants have merit, and all are important to the communities; the challenge is to optimize the use of resources and affect the largest number of people. She hoped the CEC Ministers would consider the possibility of narrowing the criteria for grants, giving them only to projects focused on *x*, *y* or *z*. For example, perhaps grants should go to first-time grant applicants only. NGOs with full-time staff submit highly polished grants, while other small groups submit less-professional applications. Some applicants have complained that if they had known how limited the funds were for grants, they would not have spent so much time applying. Mr. Houseal reminded Ms. Coronado that the NAC's last advice letter on the OP congratulated the CEC on the TEK theme and strongly suggested that NAPECA grants be focused on TEK and vulnerable communities. That recommendation would help limit the field.

Ms. Green asked about the people who are "reached" through grants. She asked what input resulted and suggested that in the future the Secretariat can ask the people who were reached what difference the interaction had made to them. Ms. Coronado responded that comments on impacts have been submitted. Ms. Coronado noted that the Secretariat funded Trout Unlimited, for example, which has many funds, and raised the question of whether grant recipients should be limited to those people who have never received a grant.

Dr. Vincent Nathan (San Antonio Metropolitan Health District), GAC member, commented on the communications plans and asked if the CEC's three member nations see themselves as one North America. Ms. Coronado responded that the CEC tries to convey the concept of three nations, one environment. Perhaps NAPECA grants could be given only to trilateral projects involving locales in all three countries. Dr. Nathan added that many bad environmental issues are interconnected, such as tar sands and hydraulic fracturing. Mr. Roger Vintze (California Department of Toxic Substances Control), GAC member, asked whether the SEM webinars are in English so he could make his environmental justice community aware of them. Ms. Coronado responded affirmatively; in addition, Secretariat attorneys can speak with communities online. Dr. Martinez suggested as a crosscutting theme that the NAPECA grants be reviewed for their broader impact in all three CEC countries. Also, in past meetings, industry representatives had stated that they would have conducted projects even without grants.

Ms. Coronado noted that all project reports are edited and placed on the website. Mr. Varney added that at some JPAC meetings, presenters are invited from projects to share their advice and lessons they have learned in public meetings.

Mr. Bent asked if Ms. Coronado saw the Secretariat as a possible convener of organizations possessing different resources to expand the available funding. She responded that the idea had been discussed and recommended, but the Secretariat did not receive that mandate from the three Parties. Ms. Ginny Broadhurst (Northwest Straits Commission), GAC member, commented on the importance of bringing people together to share their experiences and lessons, which can provide a sense of a project's continuation beyond its termination date. Dr. Ivonne Santiago (University of Texas at El Paso), NAC member, noted that there was extensive outreach and asked if a list of best practices at the trinational level was available. Ms. Coronado responded that the Secretariat is trying to identify what approaches have been most effective; communities have informed the Secretariat staff that they are busy and experiencing information overload.

Dr. Santiago suggested ways to more clearly define grant criteria; for example, organizations with a budget exceeding \$1 million would not receive a grant; grants for more than \$100,000 must have a binational impact; grants for more than \$200,000 must have a trinational impact; and so forth. A method must be found to separate groups seeking \$30,000 for a community garden from groups seeking larger grants. Ms. Coronado responded that the Parties would have to agree if they wanted to adopt such parameters for grants. She agreed that some filter for grants would be beneficial, but it is up to the Parties.

Mr. Wennberg commented that most of the committees' discussion was about NAPECA grants, but the charge for the meeting is to review the overall OP and project funding. He praised the way the projects were organized and presented, but—with regard to metrics—some projects have good, easily defined and measurable metrics, but others are focused on outputs, not effects on the environment. He asked what efforts the Secretariat was pursuing to focus metrics more on outcomes. Ms. Coronado has asked her program managers to work with the experts assigned by the Parties to refine substantive performance metrics. Although the goal has not yet been reached, she is striving to achieve that result.

Mr. Hester commented that with the great emphasis on outreach regarding the SEM process, the low response may reflect concerns about the credibility of the process. The Parties could underscore that the process will be respected and produce results. Ms. Coronado responded that SEM is one tool in a larger toolkit that produces a factual record and can spotlight a problem. Some people call the Secretariat to say bulldozers have arrived and want action to stop them, but the Secretariat must explain that it does not have that function. It is difficult to explain the virtues and limitations of the SEM process. Mr. Hester emphasized that his point was to suggest that others support the Secretariat in its efforts to publicize and attract participation in the SEM process.

Mr. Houseal affirmed that the Secretariat was recommending an Article 13 report on hydraulic fracturing and urged Ms. Coronado to proceed because Council approval for the report is not required. Ms. Coronado responded that she needs the budget to proceed with the report. In addition, Mr. Houseal stated that NAC member Dr. Jodi Hilty (Wildlife Conservation Society), who could not attend the meeting, had requested a mention of the two monarch butterfly projects. It does not appear that the pesticide glyphosate, which is a major contributor to the demise of the butterflies, is receiving attention in the projects. Ms. Coronado expressed a hope that the committees would express their views on the projects during the JPAC consultation process. Mr. Houseal pointed out that the NAC/GAC had done so. The committees had not received an early draft of the OP but commented on the U.S. projects. Mr. Houseal also reminded the members that the deadline for comments on the CEC OP was the following week, and during the second day of the NAC/GAC meeting there would be an opportunity to provide observations.

JPAC Report-Out

Bob Varney, JPAC

Mr. Housel offered collective thanks to Mr. Varney for his tenure as the JPAC Chair and for significantly advancing important issues, especially TEK.

Mr. Varney stated that the CEC has excellent leadership and was very fortunate to have someone of Ms. Coronado's caliber because it is not easy to have bosses in three countries with different priorities and issues. The CEC definitely needs help with communication, and the more the NAC/GAC can do to help in this regard, the better. He urged the NAC/GAC members to propose ways that the CEC could cost effectively do a better job of reaching audiences. The JPAC wants broad public participation and measurable benefits from expenditures and needs the NAC/GAC's help to achieve both. Mexico does not have a GAC, and Canada currently has neither a NAC nor a GAC, so the input and outreach of the NAC/GAC has never been more critical.

The JPAC had an excellent meeting in Yellowknife, with TEK as a priority, including at the Town Hall meeting with the three environmental agency leaders. In a private meeting, those leaders pledged their commitment to TEK; they are following through on their commitment. The JPAC also had a very good meeting in November 2014 in Arlington, Virginia, on "North America's Coasts in a Changing Climate," which dealt with the emerging issue of blue carbon and coastal protection and restoration. All three countries face such issues.

Drafting the Strategic Plan has been a frustrating process for all involved, and the draft is not yet completed. The delay is partly because the CEC members and their alternates are trying to improve the document, which is now in its fourth revision. It was due for delivery to the JPAC today to allow a week of review before the Monterrey, Mexico, meeting, but it now appears likely to be delivered only 1 or 2 days before the meeting. The OP will be discussed at the meeting as well. The JPAC review of the Strategic Plan is supposed to be completed on a quick schedule, with its advice delivered to the three CEC members by early May.

The JPAC had hoped to have a complete roster of the TEK experts by now, including biographical information and subject matter expertise so that the experts could be called upon as needed. The roster will be completed by and made public at the CEC's Boston meeting, which will focus on climate change. The JPAC has a working group that is developing a program consistent with the CEC session. The JPAC also would like to have an annual conference call with the full roster of TEK experts to discuss emerging issues and is eager to begin that activity.

The JPAC has extensive work to do on developing advice regarding the OP, SEM and the Strategic Plan. In addition to the meetings in Monterrey and Boston, the JPAC will have a meeting in November 2015 in Winnipeg, Canada. Former JPAC Chair Dave Angus is helping to shape the program for that meeting. When Mr. Varney was involved with NAC/GAC, data could not be aggregated because databases were all different and a picture of the North American environment could not be developed. The amount of harmonization that has occurred over the last several years is quite an accomplishment and should not be overlooked.

At their last meeting, the Alt Reps discussed SEM and identified two deliverables for the Boston meeting of the CEC: (1) a SEM outreach strategy and (2) increased accessibility to factual records. The three Parties' SEM contacts are tasked with working on the deliverables and trying to improve the SEM process. The agreement is to advance only items that represent a consensus of the three countries, as well as the CEC Secretariat and the JPAC.

The Monterrey meeting program is excellent. Secretary Juan José Guerra Abud will be present for the second JPAC meeting in a row and, as with the Oaxaca meeting, the governor will attend as well. Their attendance will greatly enhance media outreach. The meeting will have two panels, one on sustainable energy and climate change and the second on water and climate change. Great speakers are lined up, including Bob Sandford, the EPCOR Chair for the Canadian partnership supporting the United Nations' "Water for Life" Decade; Nancy Sutley, former Council on Environmental Quality Chair, now with the Los Angeles Department of Water and Power; and other outstanding presenters.

Ms. Broadhurst commended Mr. Varney for the quality of the November 2014 meeting, part of which she attended when the Restore America's Estuaries conference was held in a nearby location. She encouraged NAC/GAC members to listen to the high-quality presentations online. Mr. Varney added that JPAC meetings are accessible online for anyone who cannot attend in person and urged members to publicize that information to others. Mr. Raymond Lozano (Racial Justice and Cultural Collaboration), NAC member, added that the TEK presentations at the Yellowknife meeting were excellent and he benefitted from attending in person. Ms. Klein noted that on the budget spreadsheet sent to the members in advance of the meeting, she had noticed a

\$522,000 line item for communications. She suggested that the NAC/GAC might want to make recommendations for how that money should be spent. She wondered how much of the money is highly directed and constrained. Mr. Varney noted that communication also must be in three languages, which adds a huge cost.

As an aside to the NAC/GAC members, Mr. Wennberg informed the meeting participants that Justin Johnson (Vermont Agency of Natural Resources), GAC member, was unable to attend the meeting because he serves as the chief advisor to the Vermont Governor, but he responded to the Tweet sent earlier, and wrote, “Sorry I couldn’t be there. Keep the Tweets coming.” Members applauded the success of the Tweet communication. Noting this success, Ms. Goodmann suggested that perhaps one of the NAPECA grants could be earmarked for trilateral communication efforts every year about the CEC’s work and opportunities.

Ms. Small thanked Mr. Varney for his assistance in bringing the emerging field of TEK to the forefront of the CEC agenda. Given the gaps in knowledge in Canada and Mexico, some way must be found to fill the gaps. Perhaps white papers could be commissioned on the indigenous construct in Canada and Mexico. If the legal framework of indigenous people in those two countries could be understood, it would enable an analogy to TEK in the United States and be much more acceptable. Before dialogue occurs among the three nations about TEK, they must have a common understanding and framework. The United States should not be so far ahead of Canada and Mexico that they must catch up and fit into the United States’ construct. Mr. Houseal responded that it was a very good point. Three distinct legal systems exist for the indigenous populations of those countries. Ms. Green asked why there are no NAC/GAC counterparts in Canada and Mexico. Mr. Varney responded that at one time Canada had committees, but the government changed. Mr. Carrillo added that in Mexico, groups advise the government; there are eight sectors around the country, and sometimes the sector Chairs are brought to the CEC as advisors. Canada has an advisory process, but EPA has never met the advisors at CEC sessions.

Mr. Houseal thanked Mr. Varney for his work on the JPAC. Mr. Varney thanked the NAC/GAC members for volunteering their time to support Administrator McCarthy. He also asked the members in their other capacities as members of organizations and as private citizens to funnel comments and advice to the JPAC. More public comments and recommendations should be sent to the JPAC and are highly encouraged.

TEK Discussion: Gaining a Deeper Understanding

Octaviana Trujillo (GAC Tribal Member) and Gail Small (NAC Tribal Member)

Mr. Wennberg explained that he and Mr. Houseal had been asked to suggest meeting agenda topics that would be useful for NAC/GAC members. They agreed that members could benefit from learning more about TEK, and that was the impetus for this session. He stated that the NAC/GAC was extremely fortunate to have nationally recognized TEK leaders among their members. He invited Dr. Trujillo to provide a basic overview of TEK and a presentation on the benefits the CEC, NAC/GAC and others can derive from integrating TEK into their work.

Dr. Trujillo began by welcoming Ms. Small, Dr. Martinez and Mr. Wagner to join her in leading the initial discussion about TEK. For her presentation, Dr. Trujillo described a project funded by

a grant from the National Science Foundation to the National Council for Science and the Environment (NCSE), in partnership with the American Indian Higher Education Consortium (AIHEC), which represents all the tribal colleges and universities in the United States. Dr. Trujillo then described the process she used at Northern Arizona University in partnership with Tohono O’odham Community College to develop a teaching module for NCSE, which had a very large climate change project and wanted to bring attention to TEK because it is increasingly recognized as important for climate change adaptation and mitigation.

Sacred knowledge is central to TEK. It is important for Native scholars to have elders who help inform the topic, develop curriculum and implement teaching. Native scholars value both traditional and Western knowledge; both are helpful in addressing problems in Indian country, which includes urban areas, where more than 50 percent of Native Americans now live, as well as rural reservations. To begin the discussion for the curriculum project, participants were given a matrix with columns for TEK, Western knowledge and their commonalities. The goal was to develop a clear framework for participants’ understanding of TEK and Western knowledge. She presented a series of slides to demonstrate why the curriculum development process was important for faculty from many departments and TEK scholars to ensure a thoughtful presentation of TEK for global understanding. The process was slow but important, with participants seeking to provide a mechanism for both Native American and non-Native students to learn how TEK can be helpful in addressing climate change. Under climate change, many topics could have been addressed, but water was chosen as the focus because the participants live in Arizona and it is the most critical for life.

Dr. Trujillo explained that in developing the curriculum project, participants agreed that climate justice, legitimizing TEK and encouraging interdisciplinary dialogue were important. Those perspectives are important across science, policy and education. Equal and equitable input from communities was emphasized, including input from students, who have many views on issues that affect their lives and communities. Water was selected because it gives life—and can take away life—and is essential to food systems. The problem centers on (1) how to take current water policy and management and adapt it to changes due to climate change and (2) how to define the key people involved in the issues and their roles. There are questions about the best strategies for including indigenous knowledge and cultural traditions and the respect for the rights of nature in water policy. The curriculum outline covered the topics of (1) elder knowledge on water; (2) water policy, which is very important for tribes and involves both state and federal policies; (3) scientific knowledge of climate change and its effects on water; and (4) strategies for the future, with a special concern on what this means to students, who will be tomorrow’s leaders and decision makers.

In 1994, the United Nations Educational, Scientific and Cultural Organization (UNESCO) convened indigenous people from around the world to discuss TEK. UNESCO issued a statement that indigenous people “possess immense knowledge of their environments based on centuries of living close to Nature, living in and from the richness and variety of complex ecosystems.” They have an understanding of the properties of plants and animals and ecosystems; relationships with these are often an important part of cultural identity. TEK developed out of indigenous people’s relationships to their homelands, lifeways and practices;

decades and centuries of observation and understanding; and the relationships of indigenous people and the natural world, which includes air, earth, fire, water, plants and animals.

Vine Deloria, an important Native scholar, now deceased, made a statement in his book *Red Earth, White Lies* that resonates with Native Americans: He stated that the main difference between indigenous knowledge and Western science is that for Native Americans the knowledge is personal, and with it comes a responsibility. In the 2003 Kyoto Water Forum on Indigenous Peoples of the World, one statement made was to recognize, honor and respect water as sacred and sustaining all life. Water is the blood of Mother Earth, the giver of life. Water is worthy of reverence and great respect. At the forum on Water and Peace, there was discussion of water as a living being. Western science does not teach that water is a living being with rights.

Dr. Trujillo underscored that Ms. Small's point about understanding the indigenous framework in Mexico and Canada was important. In the Southwest, precipitation statistics are alarming. The role of Native Americans in Southwest water management is extensive because tribal lands are widespread, encompassing approximately one-third of the land base. Another third is public, and the last third is private. Dr. Trujillo showed a map of tribal lands in different Southwest states. Working with tribes involves the complexity of each tribe's different culture and laws. She discussed the O'odham Nation, which has 25,000 members living on 2.8 million acres, and their survival in the Sonoran Desert region in southern Arizona. They rely on saguaro cacti for many purposes, and the Baboquivari Peak is the center of their universe. Their ancestors developed a complex irrigation system from the Gila and Salt rivers. Dr. Trujillo explained the O'odham Nation's knowledge of planting seasons and other knowledge for survival in the desert, and she described the Water Users Association's reclamation period in Arizona when dams were constructed that blocked water to the tribe, resulting in years of litigation and, finally, a major legal victory for the tribe. During the 1930s, the Civilian Conservation Corps helped build "charco" dams to retain water, and the Central Arizona Project brings water from the Colorado River to tribes. Dr. Trujillo described the impact of climate change on the Southwest, noting the Colorado River Basin as the water source. In Lake Mead, water levels are dramatically lower, affecting ranchers on the O'odham reservation.

To engage students, her curriculum project used case studies, as well as role playing and other pedagogic techniques. The students developed adaptation plans for their own communities. Federally recognized tribes always require tribal resolutions to effect policy change, so the students also were taught to draft good resolutions and policies.

Ms. Small made her presentation, introducing herself with her tribal names. She emphasized the importance of tribal languages to support an emerging international doctrine of indigenous self-determination. TEK is a multidisciplinary paradigm that offers new and old understanding based upon indigenous epistemologies. Indigenous people are especially vulnerable to climate effects because they have resource-based cultures, and the resources are integral to their environmental homelands. Tribes have complex world views that reflect the interrelationships and responsibilities among species and the environment, not just human beings as the top species. Currently, in the United States the domestic sovereignty model is insufficient to address climate change's effects on indigenous people, particularly to homelands that are off reservations. There are power dynamic issues involving who regulates the environment, as well as the transitory

effects that cross political boundaries as a result of the market economy, such as hydraulic fracturing and salmon habitat issues. International treaties and conventions are necessary for nations to consent to the new jurisdictional frameworks.

One question is how to define indigenous cultural and human values as international rights that afford protection. The collective and communal rights that indigenous people have to their homelands and environment must be defined and incorporated into the international climate treaty and trilateral conventions. As an example of an international treaty, the Declaration of the Rights of Indigenous People was adopted by the United Nations General Assembly in 2007. President Obama declared in 2010 that the United States would endorse the Declaration of the Rights of Indigenous People, and that decision advanced the international concept of self-determination of indigenous people. Native American tribes are using international human rights as a basis for an indigenous right to environmental self-determination that tribes are trying to carve out. The current strategy for climate change adaptation and mitigation will displace entire Native American tribes from their ancestral homelands, which already is occurring in low-lying islands and Alaska. How can these people be compensated for the loss of their homelands and indigenous culture? Is money adequate compensation? What is the remedy? The Western-Anglo concepts of individual property rights, religious rights and environmental rights often conflict with the cultural worldviews of indigenous people. A foundational basis for a new right to indigenous self-determination is premised on culture, using TEK and Native languages to expand indigenous epistemologies for territorial sovereignty. International climate treaty negotiations will occur in Paris in December 2015, and indigenous people would like their new right incorporated into the treaty. Ms. Small stated that she has 30 years of experience working with tribes on TEK and natural resources on the northern Great Plains.

Dr. Martinez thanked Dr. Trujillo and Ms. Small for their excellent summaries, noting that they had taken on the challenge of summarizing TEK, which has been thousands of years in the making, in 30 minutes. Their talk prompted several thoughts, which she shared. She quoted Vine Deloria, who wrote, “Power and place produce personality,” which articulates the power of geography, nature, and environment, and how communities govern themselves. The power communities give themselves to make decisions results in the kind of personalities found in communities. We can create exploitative personalities or personalities grounded in social values of justice and ecological preservation. She has a Western educational system Ph.D. in Energy and Environmental Policy, but she also goes to learn from elders who are TEK practitioners. They have little formal education but could stand next to any climate scientist in the United States and explain what is happening with climate change in their areas. The TEK protocols are extremely complex, and learning such knowledge has occurred over generations, just as the scientific method has developed over generations. The protocols are just as complex and rigorous, which is not understood outside of Native communities. An exciting aspect of TEK’s current recognition is that it embodies the longitudinal knowledge that enables practitioners to understand what is different in the current decade from 50, 100 or 200 years ago. It is extraordinary to hear the elders discuss their knowledge.

The point that Ms. Small made about language is important. Native languages and concepts inherently are about nature. They are very process-oriented, not noun-oriented. The language itself has incredibly rich meaning, and depends on the indigenous language and the place around

which it evolved, such as in the Arctic and the Ojibwe language of the Great Lakes. Language is an integral part of TEK and the problem of language extinction must be of concern. A basic concept of indigenous culture is the idea of the sacred. TEK is sacred and cross-disciplinary, and it is an understanding of nature as a “commons.” It is communal, and tribes understand that the Earth belongs to no one, a perspective that rejects the notion of private property rights. The atmosphere and water belong to no one. When Nobel Laureate Elinor Ostrom spoke of the commons, it received attention, but when TEK practitioners speak of the commons it is sometimes regarded as romantic language; in fact, TEK has been speaking of the commons for thousands of years. TEK can bring to all people an incredible amount of knowledge about climate change effects that can benefit everyone. During many years of working in the climate and energy field, Dr. Martinez observed that the first models tried to answer whether climate change was happening; models dealing with climate effects are relatively new, so science is somewhat behind on understanding the effects of climate change. TEK can make a substantial contribution to that understanding.

Mr. Wagner introduced his Blackfeet name, noting that naming is important in his people’s culture and that all people at some point in the past were nomadic or tribal people. Speaking in personal terms, he stated that TEK is sustainability: “How we have made it this far.” The Blackfeet were not supposed to be here as a people, but it was TEK, deep knowledge of the land, that has sustained them and made them strong and adaptable. “They photographed us and thought we would be gone as people, found only in museums, but TEK has sustained and will continue to sustain us.” TEK is a learned knowledge that the peoples have gathered over time immemorial, from the beginning of the creation stories. “We were here; we have always been here.” Over time, as Dr. Martinez noted, the climate models can only go back so far in gathering data—100 or 200 years—whereas TEK goes back thousands of years. There is plenty of history for our elders to have drawn on and passed on. TEK is a visual knowledge; it is observing, sitting down and watching, being patient; it is sitting down and interacting with the environment around you. Mr. Wagner explained that TEK was learned over generations upon generations. For a long time “sustainability” seemed to mean that lumberjacks’ and fishers’ children could all harvest resources, but over time fewer and fewer could do so. He heard someone say he wanted to cut down all the wood and fish all the fish, and children could look at pictures of fish, but that’s the wrong concept. TEK is sustainability. It is a sense of where you are and where you belong geographically; if you can tie yourself to a place, that connection is when you know the value of where you are and what you need to protect. Finally, Mr. Wagner said, TEK is belonging. “When you take the concepts of where we come from and why we place value on traditional knowledge—not just on ecological knowledge—we as a people knew how to survive, even in some of the worst places.” TEK is valuable to everyone, tribal and non-tribal people, because the whole human race is in this together, and the whole human race has to work together to get out of it.

Question and Answer Period

Mr. Bernal commented on how much Mr. Wagner had emphasized sustainability. He noted that when he worked to expand a wastewater treatment facility near the Santa Cruz River, an extensive irrigation system built hundreds of thousands of years ago was well documented. As Dr. Trujillo pointed out, the Arizona environment is not easy to live in, and yet people have survived there and the Native people learned how best to live with nature. When the North American Free Trade Agreement (NAFTA) was first adopted, the Border Environment Cooperation Commission (BECC) was established to help environmental projects along the U.S.-Mexico border. Mexico had been discharging untreated waste into the Rio Grande River for many years. Mr. Bernal became involved in building wastewater treatment plants in Mexico to prevent such discharges. Mexico would have done the same if it had had the resources, but the United States brought the resources. That is a lesson to apply, because one of NAFTA's motivations was to ensure an understanding of the effects of job creation and increased trade. The BECC established project standards using sustainable development criteria that called for building today in a way that would not negatively impact future generations. TEK is not yet a well-known term, but the buzzwords of sustainability and sustainable development are heard more frequently.

Ms. Romero-Lizana asked about the diversity of tribes, noting that even in her group there are difficulties in reaching agreement. She asked if the tribes encountered communication issues because of different languages and so forth, and what methods tribes were using to overcome communication issues. Mexico has 28 different dialects. Dr. Trujillo responded that English is the common language, but the National Congress of American Indians (NCAI) was established a few decades ago when tribes were being terminated. It is the largest such organization in the country and has helped to develop good policy. It is headquartered in Washington, D.C., and has an embassy because it is part of the nation-to-nation interactions. The NCAI has a process for coming to consensus so that during their annual meeting at the White House its members can speak with one voice on priorities needing attention. At President Obama's first meeting with tribal leaders, he wanted all department secretaries and the head of EPA present so that they had a clear policy about how to work with tribal nations. As Ms. Small noted, tribes are now in a global platform for a new self-determination.

Ms. Green stated that in the United States TEK is almost synonymous with Native American traditions and culture. She asked when Native American communities that are not recognized by the U.S. government or non-Native communities become indigenous enough that their traditional knowledge is to be protected. For example, the Cajun culture in south Louisiana and the Gullah in the Carolinas both have close ties to the land and traditional mores and institutions. She asked how to ensure such voices are heard in TEK discourse. Dr. Trujillo responded that the Declaration of the Rights of Indigenous People's definition, which recognizes the knowledge base of local and indigenous peoples, is broader than the U.S. definition with regard to federally recognized tribes, but more needs to be done. The organizations she works with speak to local and indigenous peoples. Ms. Green stated that her primary concern is to ensure inclusive discussions because although Western scientific thought narrowly defines the box to control TEK, TEK is not a controllable concept; it not only thinks outside the box but also blows up the box.

Ms. Small added that TEK is by no means trying to be restrictive to include only tribes. It is tied to people, such as ranchers in Montana who have been on their ranches and are fighting large coal strip mines. She noted that on YouTube there is a clip called “Intrinsic Worth” in which Montana’s poet laureate states, “We’re all becoming Indians.” She urged the members to watch it and offered to send it to them.

Mr. Houseal stated that in his view TEK is place-based knowledge that has persisted, sometimes for millennia. He noted that he had worked with indigenous people in Latin America and the Caribbean who have lived in the rain forest for a long time, and co-evolved with the forest. The term “ecosystem people” was used because they obtained everything they needed from the world around them. Today, the United States faces an existential threat of having a large amount of its produce come from California, when perhaps the bioregionalism model should be adopted, sustaining people in their various landscapes. Ms. Small mentioned that there has been a paradigm shift. As a conservationist, she and other professionals believed 30 years ago that if a large area could be set aside, then biodiversity could be saved. Now, conservation biology has found that bird breeding grounds are shifting and animals are moving north to colder climates. In past treaties, Native Americans were given land, but with climate change the migratory species and birds and the ecosystems as a whole are changing under the feet of people who have a long enduring knowledge of the landscape. TEK will be so important in the future because it is the early warning system. The International Union for Conservation of Nature also has good guidance that the committee members could benefit from reading.

Dr. Nathan added that he had worked with indigenous people in Alaska. When doing an environmental study, the Agency for Toxic Substances and Disease Registry (ATSDR) sent a team to Alaska because persistent organic pollutants were found there, even without any industrial activity. The goal was to conduct a subsistence dietary study, especially in the Aleutian Islands. The team met with elders, but ultimately they were asked to leave for fear that ATSDR meant to impose a diet on the people, so the study had to be reframed. He also noted that AM radio is the major form of communication in the Aleutian Islands. Dr. Pardo added that in the Everglades during the Katrina disaster, AM radio was the only means to communicate.

Mr. Bent stated that the TEK concept was very deep and all-encompassing. Indigenous cultures possess a great reverence, and the committee members were approaching a topic with their own cultural perspectives that interfere with understanding. He asked what action the NAC/GAC could take with regard to TEK. The concept “traditional” means different things to different people. He was trained in geology, which he considered to be a traditional teaching developed as far back as the 1600s. Its knowledge is verified, peer reviewed and handed down. Indigenous is a more descriptive term than traditional. Ms. Small gave an example of TEK in Montana, noting that her homeland is surrounded by coal strip mines; to obtain coalbed methane gas, 70,000 wells have been dug around the two Cheyenne reservations along the major water sources. Ms. Small interviewed the tribes. There was great concern for the beaver as an indicator species and the undisturbed perpetuation of ceremonies. Certain plants and soils were needed, and there was a great spiritual level of interest. After her research, she met with the federal agencies. A statewide coalbed methane Environmental Impact Statement (EIS) process involved the federal government because much of the land was federal. A Montana member of Congress stated that \$500,000 would be made available for the EIS, but it had to withstand challenges. Many

resources are transitory, including the gas that is shipped miles away. The southern Ute tribe complained that their methane was being stolen, and a scientist said that a large number of wells could be built along reservation borders to stop tribal methane from being siphoned. The tribe asked why, if so much money could be spent to protect the methane, it could not be spent on protecting the beaver, the important plants and other resources that the tribes valued. The scientists valued the methane more. Values dictate what is important and should be funded. After a difficult effort, a mitigation plan was developed that incorporated tribal knowledge to ensure enforceability.

Mr. Wennberg stated that so much of the subject under discussion was based on one's worldview and value system. His own views are based on his upbringing and cultural context. For example, a person who lived in a Brazilian rain forest could never understand a description of snow. He stated that he is cautious about assuming that he understands TEK because he has not shared the history and reverence that are essential to the Native American's experience. Ms. Goodman thanked Mr. Wennberg for his perspective, as well as the speakers for sharing their understanding of TEK. She agreed that students in the United States are not taught about Native American knowledge, and the NAC/GAC cannot change the educational system. She suggested using NAPECA grant money to tell the story in a big way because it is long overdue. Early European settlers learned a lot from indigenous tribes. Dr. Santiago drew a parallel with Amazonian medicines, such as the Mayan use of pigments to fight certain cancers that were expropriated by a scientist; she hoped that credit for the Native American's TEK and compensation would be provided to those who have had solutions for hundreds of years.

Dr. Dorsey emphasized that TEK is not new; there is an extensive peer-reviewed literature on the subject built over at least the past 25 years, including indigenous ecology, psychology and other knowledge. The Intergovernmental Panel on Climate Change would not accept TEK without a solid foundation. Mr. Wagner added that there has been reluctance to accept TEK as valid knowledge, which Natives have been trying to teach for decades. Ms. Paige Ingram, OITA, representing Ms. Correa, emphasized that TEK is constantly discussed at EPA, but it is a difficult subject to understand for people who have not grown up in indigenous communities. She encouraged the members to continue promoting understanding of the concept.

Ms. Small announced that she had located the YouTube clip on "Intrinsic Worth," and she briefly introduced the story before it was broadcast for the NAC/GAC to watch. The clip presented the story of Clint and Wally McRae, father and son ranchers in Montana, whose way of life is threatened by the proposed Otter Creek coal mine, one of the largest strip mines in the West, and the nearby coal ash ponds (<https://www.youtube.com/watch?v=hR4ANakKiNk>).

Following the viewing, Ms. Small noted that she had worked with the ranchers for many years. The coal mines are approximately 5 miles from her reservation. The coal is being demanded by the Asian markets, so if the coal trains receive permits, all of southeastern Montana will deteriorate. She echoed Mr. McRae's view that they are in a cultural war with the mining company, which creates a tough challenge.

Ms. Klein stated that she was inclined to see commonalities with other people, even where genuine differences exist. As a Western-trained scientist, and in her community of Western-

trained scientists, she and her colleagues often talk about the spiritual attractions of their work and why they became biologists or naturalists. Many of her community have been influenced by Native American thinking and expressions of connection to the land. At the same time, her religion has a history of being at odds with biological sciences, so in professional settings, Western-trained scientists are reluctant to acknowledge the spiritual connection that inspired their scientific interests. Ms. Klein expressed excitement about exploring TEK because it speaks to something deeper that she would like to address and to bring back to her own scientific community. She welcomed being corrected if she made erroneous assumptions about her level of understanding.

Mr. Wennberg commented that the conversation had been inspirational. For some members, the difficulty will be determining how best to translate TEK concepts and principles into policy recommendations. The first step must be to understand the ideas. In his summary of the discussion so far, he noted that he had spent 5 years as a consultant in the climate-change field, often working through teleconferences; however, the face-to-face meetings are invaluable and that value will be reflected in the quality of the NAC/GAC advice letters. He suggested that the advice letters mention that point.

Mr. Houseal commented on the spirituality of the NAC/GAC discussions. In addition, the discussions of climate change, as well as the CEC's OP and Strategic Plan, were valuable. The CEC must hear from the committees about the details, such as the NAPECA grants, as well as at the broader "Article 13" level. He echoed Dr. Dorsey's comments recognizing that TEK is being pursued on many fronts. The committees' goal is to elevate the discussion to the CEC level, notably for Canada and Mexico.

Mr. Carrillo explained the logistics for the following day's continuation and completion of the meeting. He asked members to inform him if they are interested in attending the CEC meeting in Boston to be held July 14–15, 2015; EPA will try to send as many people as possible within the limited budget available. The meeting adjourned for the day at 5:30 p.m.

Friday, April 17, 2015

Call to Order

Mr. Carrillo introduced Ms. Stephanie McCoy to provide logistical information regarding vouchers and other matters.

Plenary: Joint Committee Meeting

Mr. Houseal conveyed that Mr. Varney and Ms. Coronado greatly appreciated the NAC/GAC discussion of the previous day, especially on TEK, which is Mr. Varney's legacy as the JPAC chair. He reminded the committee members that their purpose was to review the charge questions, and efficiency would be appreciated by EPA because the deadline was fast approaching, especially for comments on the draft CEC OP. The JPAC will consider the OP at its April 23–24, 2015 meeting in Monterrey, Mexico. The second charge question pertains to the NAPECA grants. The proposal for the NAPECA grant applications will be issued in late summer

and CEC members are looking for ways of incorporating the grants into the strategic priorities and thematic aspects of the Strategic Plan, as well as delivering good results on the ground. The third charge question pertains to communications. The CEC could learn from Twitter, Facebook and other outreach methods that could be deployed to reach North American audiences more effectively. In addition, Mr. Houseal noted that the NAC/GAC advice already is making a difference, as evidenced by EPA's responses to the committees' advice letters resulting from the previous meeting's charge questions. The draft CEC OP reflects the NAC/GAC advice on projects. Also, both committees recommended the creation of a trinational TEK committee; the CEC has adopted the recommendations, and the TEK committee members will be announced at the CEC's Boston meeting in July. The NAC/GAC comments on performance metrics for the CEC have led to a strong emphasis on outcome metrics in the upcoming Strategic Plan. He thanked the members for their participation.

Mr. Wennberg noted that the 30 minutes on the agenda for public comments likely would not be used, in which case, he proposed using some of that time to extend the prior day's TEK conversation to focus on the question of how TEK can be translated into policy advice.

Mr. Carrillo presented the results of a poll he had conducted of NAC/GAC members to determine their availability for the October meeting, which showed a split on the dates deemed best. Mr. Carrillo suggested adding an option of Friday, October 23 or 30, and members agreed that would be helpful. Mr. Carrillo will resend a poll to the NAC/GAC members offering a new set of dates. He also asked members to indicate if they were available to attend the July 14–15, 2015, CEC meeting in Boston; 13 members indicated their availability. EPA will discuss how many members the Agency can afford to send to the meeting and inform them soon.

Mr. Wennberg stated that he appreciated the NAC/GAC members' interest in attending the CEC session. He suggested that if there is a limit on the number of members that EPA can send, perhaps members who have not previously attended should be given priority. The sessions provide an opportunity to understand how the different parts of the CEC are related, and he strongly encouraged members to attend if they have not previously done so.

Public Comment Period

Mr. Wennberg opened the meeting for any public comments. There were none, so he closed the public comment period.

Mr. Hester asked if the NAC/GAC publicizes the opportunity for public comments to be made at its meetings. Mr. Wennberg responded that the meetings are announced publicly through the *Federal Register*, but he added that it is a continuing struggle for the NAC/GAC to attract public interest in committee activities, as it is for the CEC, although less so. He welcomed any suggestions. Mr. Houseal added that he often hears from his constituents about oil trains, an issue that is either trilateral or bilateral in nature. He urged committee members to inform their constituents that they can send comments to the NAC/GAC about any North American environmental issues. Mr. Carrillo stated that he would forward *Federal Register* notices about the meetings to committee members, so that they can forward the notices to their constituents. Ms. Green added that she never sees the NAC/GAC meetings mentioned on the EPA Highlights

email, which is sent to a very large audience. Members agreed that the EPA Highlights would be a good approach for expanding awareness of the NAC/GAC. Mr. Houseal stated that the recommendation should be included in the advice letter discussion of communications issues.

Mr. Wennberg reminded members that their advice letters to EPA can raise issues outside the scope of the charge questions. Any advice relevant to the CEC trilateral relationship would be appropriate, including topics raised by members during the previous day's meeting.

Mr. Wennberg then led a brief discussion about how to translate TEK principles into specific advice, policy changes or implementation concepts that the U.S. government might want to consider proposing to the CEC.

Ms. Goodmann suggested NAPECA grants could be directed at advancing TEK in a trilateral context. As with the grants she works on as a city manager, all grants have parameters set to achieve a goal and effect some change. When the committee members examine the grants awarded in this cycle, perhaps some portion of the grants could be earmarked for a specific grant challenge to spread TEK. Grant applicants would be challenged to seek partners, most likely from tribes, as well as other trilateral entities, to work together on implementing a program that would help to spread knowledge about TEK. Mr. Wagner added that grant applicants would know from the outset that they would be working on TEK. Ms. Goodmann added that the CEC would have the authority to require all grants to have a TEK element.

Mr. Houseal reminded the members that in the advice letters from the previous meeting, the NAC/GAC recommended the trilateral TEK group and also that NAPECA grant funds be assigned to TEK. Building on Ms. Goodmann's idea, a proposal was made for the CEC to produce an Article 13 report on TEK across the North American continent, examining the legal aspects of the three nations' TEK protocols. Mr. Hester seconded the idea of an Article 13 report. It would be helpful to obtain an operational understanding of TEK if the CEC Parties could provide a collection of basic materials on how they currently use TEK in guidance documents, policies or memoranda. Ms. Broadhurst commented that incorporating TEK is a very broad issue; consistent with the recommendation for NAPECA grants to be more specific, the committees would need to be clear about their intention regarding TEK in grants. A smaller group might be needed to consider the details. Ms. Goodmann responded that grants could stipulate "you must include tribal entities." Such specific requirements would make applicants leave their comfort zones.

Ms. Klein commented that indigenous or traditional knowledge appears to mean the very personal experience of a people in a place. Some direction would have to be provided on when it is most appropriate to bring in such a community. In addition, guidance would be needed on how the holders of TEK want to be engaged to avoid misunderstandings about the intentions of grant applicants and tribes who are involved in projects. Mr. Houseal added that TEK is not exclusively tribal. In the Adirondacks, for example, people who have worked the land for six or seven generations know the cycles of the land, animals and plants. TEK is traditional in a broad sense, and also pertains to vulnerable communities that sustain themselves through hunting, fishing, farming and forestry. Dr. Martinez cautioned that it is not the NAC/GAC's role to determine how to integrate TEK into grants and decisions and that there are experts who can address such matters. She has served on other EPA committees that also have sought to integrate

TEK. Dr. Dorsey announced that he had sent to the NAC/GAC members a list of 43 recommendations in some federal agency literature. The committees' discussion seemed overly *ad hoc* and should instead be systematic and additive to existing federal agency knowledge and practices. It behooves the NAC/GAC to draw on the existing literature and processes that have already occurred, such as the 2010 EPA meeting of tribal leaders.

Mr. Houseal noted that in the past, the NAC/GAC created working groups on topics. TEK at the trination level will take several years to work through, so he urged the members to consider a working group separate from either committee. It should be small enough to avoid triggering FACA requirements.

Committees Meet Separately

Mr. Wennberg explained the procedure for the NAC and GAC to meet separately and then reconvene for a report on their individual deliberations.

GAC Separate Meeting

Mr. Wennberg opened the GAC discussion, noting that the NAPECA grant budget had received NAC/GAC attention but the CEC program budget also warranted discussion. Members discussed the \$500,000 communications budget, such as the amount devoted to modern social media and other approaches. Members expressed interest in a more detailed budget breakdown to better understand aspects of the communications budget.

In discussing the OP, members emphasized the need to strongly emphasize TEK in the NAPECA grants. Ms. Goodmann raised the idea of infusing the entire program with TEK, and Dr. Trujillo noted the possibility of a focused request for applications regarding TEK.

Mr. Wennberg reviewed the logistics of drafting the GAC advice letter, which he will attempt to have in its final version by May 7, 2015, because of his schedule constraints. Members' comments will be incorporated and any conflicts will be resolved. He stated that the advice letter should address the issue of metrics, some of which are excellent and focused on effects or outcomes; but others are not. Members agreed with the need to highlight the issue, citing examples of good and bad metrics from the OP.

Mr. Wagner asked about blue carbon, and members reviewed the definitions. Mr. Wagner would like to raise the issue with the national and regional groups, as well as his own tribal council. At the November 2014 JPAC meeting, there were good presentations on the issue. Mr. Carrillo suggested that the National Oceanic and Atmospheric Administration and other agencies leading on blue carbon issues could be invited to speak on the topic.

Mr. Bernal returned to the issue of a NAPECA grant focused on TEK, including one in the OP for the amount of \$250,000 over 2 years. Members discussed how to strengthen the support for TEK in the GAC advice letter, including a recommendation that the 2016 climate negotiations in Paris should include TEK. Mr. Wennberg cautioned that the GAC's role is to advise EPA Administrator McCarthy as the United States' CEC representative. The issue could be raised not

in the formal advice letter, but within the context of the cover letter. Members approved of that approach. Dr. Nathan commented that air quality issues also should be addressed in the GAC recommendations, including the need to harmonize the trilateral approaches to air pollution. He suggested that an air quality monitoring and public information project that was not incorporated in the OP should be included. Members discussed the process whereby the CEC selects projects, which in the United States are proposed by many federal agencies with EPA serving as coordinator.

Mr. Wennberg noted that water issues are the same for the three CEC nations, even if the water bodies differ. In the past, water could not find a place on the CEC agenda, but today it is a major issue. Ms. Goodmann stated that the battle over water protection issues is being lost. EPA lacks water quantity jurisdiction, but climate change and water are interlinked.

Members discussed the two projects relating to monarch butterflies. Mr. Cook described the role Monsanto plays in the problem with its glyphosate pesticide products for genetically modified corn and soybeans. There are huge potential ramifications of the conflict involving Monsanto, concerned federal agencies and NGOs. A petition from the Center for Biological Diversity to the U.S. Fish and Wildlife Service (USFWS) seeking an Endangered Species Act listing of the butterflies has not been resolved yet, but it could require large tracts of land to be removed from production to serve as butterfly habitat. Mr. Cook questioned the merit of the two butterfly projects while the legal issues are pending. Members discussed the issue and agreed that the GAC should indicate in its advice letter that the projects might be premature and the funding could be better directed at other priorities until the regulatory situation is settled. Funds could be used to educate the public about planting butterfly habitat along the flyway outside of agricultural lands. Mr. Wennberg asked Mr. Cook to provide him with a summary of the regulatory situation involving the monarch butterfly.

Mr. Wennberg stated that the GAC might want to develop advice on the CEC Strategic Plan through email using a small working group, but not a formal NAC/GAC conference call. The Strategic Plan advice could be a supplement to the NAC/GAC advice letters.

Mr. Wennberg turned the meeting to the issue of NAPECA grants. The charge questions seek advice on the next cycle of grants. Dr. Trujillo added that CEC seeks advice on how to reach broader audiences; she noted the importance of AM radio for reaching Native American communities and rural groups in Mexico. Members resumed the discussion of criteria for restricting grant applications, including metrics that would inform potential applicants of the expectations for grant results. They also discussed applicants who employ professional grant writers compared with smaller NGOs, including those that have never received a grant, and considered ways to ensure that grants are not provided only to large organizations. However, it was noted that some university applications are outstanding. Mr. Carrillo posted the current NAPECA criteria. Mr. Vintze commented that smaller grant recipients, such as local citizens, have concerns about the significant documentation required to close out projects. Dr. Nathan discussed his experience with partnerships for mentoring local citizens on how to effectively manage grants to avoid confusion at the end.

Mr. Wennberg opened the discussion on communications. Members described their experiences using the CEC 101 PowerPoint presentation that was developed for communicating about the Council's work. Mr. Cook stated that he had used the PowerPoint presentation, but the reception has been less than stellar. The NAC/GAC is little known and the CEC's relevance to the work of communities is not understood. A member noted that even the Texas Commission on Environmental Quality was unfamiliar with the NAC/GAC. Members discussed participation in the CEC's Boston meeting in July and the establishment of hubs, which can be as small as a living room or as large as an auditorium, to facilitate participation.

Under the category of "advice that was not requested," the members noted the Article 13 study on hydraulic fracturing. Ms. Coronado indicated that no funding is available, but members discussed recommending that the money be allocated. Mr. Vintze noted problems with wind projects in Imperial County. Citizens have complained; perhaps in the future, citizens' opinions about projects could be surveyed. Another member noted that every energy source imposes some societal cost. Mr. Wennberg suggested that in a future meeting the issue of oil trains could be considered.

NAC Separate Meeting

Mr. Houseal began the meeting with a reminder that NAC members could comment on any issues relevant to the trinational CEC. In the NAC's previous advice letter, which addressed only the U.S. projects, the committee made a point of requesting to review the CEC's OP, and now the opportunity is available. In addition, guidance on the NAPECA grants, the Strategic Plan and communication is important.

Mr. Carlos Perez (Galica, LLC) suggested creating a list of issues besides the three charge questions. Dr. Santiago suggested raising the amount of money available for NAPECA grants. In response, Mr. Houseal noted that in the Strategic Plan there was an effort to group projects that are different from the NAPECA grants, and he distributed a matrix. An Article 13 hydraulic fracturing study had been recommended, which Ms. Coronado had stated lacks funding for this year. There is, however, \$180,000 for such a study in 2016. The NAC/GAC also discussed an Article 13 study on TEK. Such studies would modify project-level and NAPECA-level budgets. Two projects, numbers 12 and 13, are concerned with monarch butterflies and call for research; Dr. Hilty, absent from the meeting, has noted that use of a Monsanto pesticide, glyphosate, is the greatest threat to the butterflies and many other pollinators. The U.S. Department of Agriculture (USDA) and USFWS are aware of the problem, and Monsanto is preparing for a legal battle. Mr. Houseal said that the project description seemed paltry compared with the real threat to the butterflies. Dr. Hilty would like the NAC advice letter to emphasize the effect of pesticides on pollinators.

A member commented that the project calling for engagement with farmers and landowners deserved greater scrutiny because the largest impact has come from increased use of pesticides on genetically modified crops. It is unclear to what extent farmers have been engaged in discussing sustainable management of their farms using the new technologies. Another member stated that Monsanto is headquartered in St. Louis, Missouri, where she had lived for 10 years and worked on glyphosates. Monsanto was willing to make money available for addressing the

monarch butterfly issue. She offered to contact Monsanto employees who would be willing to work on remedying the problem. Mr. Hester added that he deposed Monsanto employees in lawsuits, and the issue is part of a much larger struggle involving petitions to list monarch butterflies as an endangered species. Monsanto and other industrial interests want to engage in solutions that do not involve compulsory restrictions on the use of lands. Habitat conservation plans have been used to protect species, but it has never been applied across international borders. Such a project could be too large, but experts could consider how information might help advance solutions other than compulsory restrictions. Ms. Klein added that her organization, NatureServe, ranks all species by the level of their imperilment. Eastern monarch butterflies had recently been upgraded to the highest level of “critically imperiled,” with 90 percent of the population gone. The USDA often cites NatureServe’s research in its own listings.

Mr. Houseal noted that NAC’s past advice letter urged partnering with private entities, but he would be reluctant to accept Monsanto’s money for CEC activities, a view other members shared. Regarding Mr. Hester’s point, the CEC founding documents call for trans-border EISs. Also, glyphosate affects bees and other pollinators. Mr. Bent commented that the issue is much larger than pesticides, and it includes changes in vegetation growth as a result of glyphosate use. Regarding grant possibilities, the NAC previously reviewed projects 12 and 13 on monarch butterflies and found them valuable.

A member commented that water was not directly addressed in any projects. Another member noted that EPA’s purview is limited to water quality, not quantity. Water rights are a Department of Interior issue. Mr. Houseal raised the issue of water as a trade issue; for example, water is imported to grow alfalfa, which is exported as a crop. Members discussed the fact that water and climate change are interrelated. They also discussed the definition of blue carbon, which relates to the restoration of estuarine and near-coastal submerged vegetation and the potential for carbon sequestration.

A member raised the issue of tracking the environmental or carbon footprint of products. The next step is to define the water footprint of products, and the NAC should promote that concept. Members agreed that the NAC should urge greater emphasis on water in the next round of CEC projects. A member noted that the CEC has a limited budget to deal with water and many longstanding organizations already deal with the issue, such as the binational International Boundary and Water Commission. In addition, recommendations should not focus exclusively on EPA; the entire federal government is engaged in the CEC’s work. Increasing NAPECA grant funds also must be understood as a zero-sum game. CEC’s budget has been reduced from \$9 million to \$7.5 million. A member suggested that the NAC should support the idea that the CEC should receive its full budget allotment of approximately \$6 million per CEC Party, and members agreed.

Mr. Houseal urged that the NAC emphasize the importance of the Article 13 study on the hydraulic fracturing issue from both an energy and water perspective. A member expressed astonishment that the CEC would direct the Secretariat on which projects to fund. Another member asked about the trinational aspect of hydraulic fracturing, and members discussed the maps and activities in the three nations. No one continuous basin exists for the three nations, but good, consistent regulations for all Parties are needed. In addition, oil companies from Mexico

want partnerships for oil and gas drilling in the Gulf of Mexico. The NAC could recommend a concerted effort to examine best practices that could be adopted across North America. Mr. Houseal noted that an Article 13 study on TEK was not in this year's OP or CEC budget. Mr. Hester asked if it made sense to have an Article 13 TEK study if a new 15-member panel of TEK experts was being formed. Members also discussed recommending that the 15 experts collaborate on an Article 13 TEK study. Members discussed energy infrastructure and transportation issues, including oil trains.

Mr. Houseal raised the issue of NAPECA grants, and members reviewed the NAC/GAC discussion of criteria that might be applied in awarding the grants, given that too many applicants seek the limited funds. A member noted that a clear theme can serve to identify a narrower group of applications to consider and other ways to reduce the burden on the Secretariat staff in reviewing applications. A TEK focus on vulnerable communities, with reproducibility of projects as a requirement, would be useful for screening. Members noted that underprivileged communities have difficulty spending money if they receive too large a grant. Also, eligibility criteria should not exclude small organizations.

Regarding communications, Mr. Houseal noted that the \$500,000 budget for 2 years covers excellent trilateral communications at CEC meetings. Members discussed why public comments to the CEC are limited, despite a high response to the NAPECA grants. Also, the SEM receives few submissions, and the members discussed their concerns about the process. It is designed to lack regulatory force and to serve strictly as an information-generating process. Nevertheless, information can be powerful, giving interested parties a basis for legal challenges. Communications have always been a difficulty for the NAC/GAC and the CEC. Broadcasting widely does not appear to be a successful strategy. Focusing on communicating with people who can use the information might be a better approach. NatureServe, for example, defines its target audiences and their ways of obtaining information; its strategy is to be visible in the audience's online and other venues. Members discussed defining customers and what they value, as well as their sources of information, for targeted outreach. SEM has targeted law schools.

Mr. Houseal reminded the NAC members that in July there will be a CEC Town Hall meeting in Boston, and he urged the members to offer recommendations for the government on climate change that could be presented at that time. A member noted the Honda Smart Home, with electric vehicles for storing electricity, is an interesting example of a new energy system with many climate, green growth and other benefits. Denmark is moving to a distributed electricity generation system involving solar and other non-grid electricity sources.

Committees Reconvene in Plenary Session

Report-Outs From NAC and GAC Chairs

Mr. Houseal reported on the NAC deliberations. The NAC would like the CEC to receive its full budget, which has been declining. In discussing the OP projects, the NAC had an extensive discussion of the monarch butterfly projects and concluded that the problem is not only glyphosate but also habitat loss and other issues; the NAC decided to seek best practices but to avoid the legal conflicts involving Monsanto and the federal government. The NAC emphasized the need to undertake the Article 13 hydraulic fracturing study; on an Article 13 TEK study, the

committee noted that 15 experts will be appointed by the CEC and they should explore the area. The NAC discussed climate change and water as an important overlay for all of the committee's activities. Perhaps the CEC could examine the water footprint of trade. The NAC discussed the NAPECA grants extensively, noting that the NAC should provide the CEC guidance on filtering the number of grants and focusing the grants on the Strategic Plan's crosscutting issues, starting with vulnerable communities. Water and community resilience to climate change, using TEK, could be a theme. Regarding communications, the NAC discussed the importance of defining the audiences, who are not 500 million North Americans but a subset of the total population. The CEC, however, wants to reach out to small, vulnerable communities, not just governmental agencies that are an obvious audience. Beyond the charge questions, the NAC discussed the lack of SEM submissions and related issues; the public does not see the value of the process. Law schools are replicating the SEM process, which is not an enforcement but an information program. CEC members may need to be shown that the SEM process is aimed at best practices, not punitive actions. Mr. Houseal noted that Ms. Small had spoken of paradigm changes several times, including for water and energy resources. Honda's Smart House was cited as worth understanding because of its vision of an energy future without fossil fuels. He thanked the members for their comments.

Mr. Wennberg reviewed the GAC deliberations. The GAC concluded that another level of detail is needed on the OP budget to enable intelligent comments. When talking about NAPECA grants, the GAC discussed setting aside TEK funds and also applauded the projects being funded this year. In the future, more entities with TEK abilities should be encouraged to apply. The GAC will provide examples from the current OP on projects with good measurable outcomes and others that lack such metrics. The committee received an email from Ms. Small regarding the 2016 Paris climate negotiations; the GAC concluded that it was not the committee's place to offer formal advice on TEK for the Paris meeting, but the cover letter will mention the issue. It was noted that there has been a shift in projects, with fewer projects on air quality and a greater focus on water. The GAC will advise that air quality issues should not be neglected and will note that the proposed projects are of limited geographic scope. The GAC decided to state that the proposed monarch butterfly projects are premature, given the unresolved regulatory issues. Funding could be better applied to other priorities. The next cycle of NAPECA grants should focus on Native American and remote communities, using AM radio to reach out to the communities. The grants need to be more prescriptive, including a funding range, and should adopt such criteria as replicability, support of indigenous communities through partnerships and a focus on vulnerable communities. Priority should be given to applicants who lack access to public funds, but the first criteria will be project quality. A worthy subset of first-funders should be sought, and small entities fearful of the documentation requirements for grants should receive mentoring support. The CEC 101 PowerPoint has been used a few times but requires extensive follow-up to make genuine contacts. In the category of unsolicited advice, the GAC also emphasized the need for the Article 13 hydraulic fracturing study. In addition, wind and solar energy is being funded widely, but community responses are not understood; the CEC and others could engage in surveys to obtain community responses after projects are installed. The GAC also is interested in oil by rail issues, perhaps through a briefing at a future meeting.

Following the NAC and GAC reports, Mr. Houseal requested that members be given an opportunity to make closing remarks. Members commented on the quality of the conversation

and the presentations and expressed their appreciation for the opportunity to meet with colleagues face-to-face, as well as for the excellent participation of new members. Mr. Carrillo thanked the members for the intellect and passion they bring to the NAC/GAC meetings and the staff for their support in ensuring the meetings function smoothly.

Mr. Wennberg announced that a poll showed that almost all NAC/GAC members are available for a teleconference on Friday, October 23, 2015, from 1:00 to 5:00 p.m. EDT. He asked members to put the date in their calendars. A draft agenda and other materials will be developed and forwarded to members, with an opportunity to discuss the agenda before it is finalized. He thanked the members and expressed his gratification on returning to the GAC; he especially noted the substantial participation of the new members. Mr. Houseal commented on the uplifting quality of the TEK presentations and applauded the fact that they were made by NAC/GAC members; he stated that the NAC/GAC is the most inspirational, intelligent and fun group with which he works.

Adjournment

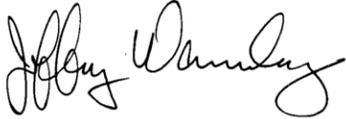
Mr. Houseal adjourned the meeting at 12:52 p.m.

Action Items

- ❖ Mr. Houseal will share his draft advice letter with the NAC members for their comment.
- ❖ Mr. Wennberg will share his draft advice letter with the GAC members for their comment.

Summary Certification

I, Jeffrey Wennberg, Chair of the Governmental Advisory Committee, and I, Brian Houseal, Chair of the National Advisory Committee, certify that the meeting minutes for the dates of April 16–17, 2015, as hereby detailed, contain a record of the persons present and give an accurate description of matters discussed and conclusions reached and copies of all reports received, issued or approved by the advisory committees. My signature date complies with the 90-day due date after each meeting required by the GSA Final Rule.



Jeffrey Wennberg
Chair, GAC

July 10, 2015

Date



Brian Houseal
Chair, NAC

July 10, 2015

Date

Appendix A: Meeting Participants

NAC Members

Brian L. Houseal, Chair

Director
Adirondack Ecological Center
State University of New York College of
Environmental Science and Forestry

Timothy A. Bent

Director Environmental Affairs
Bridgestone America

Michael K. Dorsey, Ph.D.

Visiting Professor
College of the Environment
Wesleyan University

Abbas Ghassemi, Ph.D.

Executive Director
Institute for Energy and Environment
New Mexico State University

Carolyn L. Green

Managing Partner
EnerGreen Capital Management, LLC

Tracy Hester, J.D.

Professor
University of Houston Law Center

Mary Klein

President and CEO
NatureServe

Raymond Lozano

Director
Racial Justice and Cultural Collaboration
New Detroit

Cecilia Martinez, Ph.D.

Director
Center for Energy and Environmental Policy

Theresa A. Pardo, Ph.D.

Director
Center for Technology in Government
State University of New York at Albany

Carlos Perez

Galica, LLC

Ana Romero-Lizana

Director
International Business Development
World Trade Center

Ivonne Santiago, Ph.D.

Professor
College of Engineering
University of Texas at El Paso

Ms. Gail Small, J.D.

Executive Director
Native Action

GAC Members

Jeffrey Wennberg, Chair

Commissioner of Public Works
City of Rutland, Vermont

John M. Bernal

Deputy County Administrator
Pima County Public Works Administration

Ginny Broadhurst

Executive Director
Northwest Straits Commission

Kirk V. Cook

Supervisor
Washington State Department of Agriculture

Therese H. Goodmann

Assistant City Manager
City of Dubuque

Vincent R. Nathan, Ph.D., M.P.H.

Assistant Health Director
San Antonio Metropolitan Health District

Octaviana V. Trujillo, Ph.D.

Tribal Council Member
Pascua Yaqui Tribe

Cristina Viesca-Santos, J.D.

Assistant County Attorney
Environmental Crimes Unit
El Paso County Attorney's Office

Roger Vintze
Manager
Enforcement and Emergency Response Program
California Department of Toxics Substances Control

Gerald Wagner
Environmental Director
Environmental Program
Blackfeet Nation Tribe

Designated Federal Officer

Oscar Carrillo
Office of Diversity, Advisory Committee
Management and Outreach
U.S. Environmental Protection Agency

EPA Participants

Denise Benjamin-Sirmons
Director
Office of Diversity, Advisory Committee
Management and Outreach
U.S. Environmental Protection Agency

Karl Brooks
Deputy Assistant Administrator
Office of Administration and Resources Management
U.S. Environmental Protection Agency

Marian Cooper
U.S. Environmental Protection Agency

Sylvia Correa
Senior Advisor
North American Program
Office of International and Tribal Affairs
U.S. Environmental Protection Agency

Paige Ingram
American Indian Environmental Office
U.S. Environmental Protection Agency

Shirley Jones
Office of Diversity, Advisory Committee
Management and Outreach
U.S. Environmental Protection Agency

Mark Joyce
Associate Director
Office of Diversity, Advisory Committee
Management and Outreach
U.S. Environmental Protection Agency

Karin Koslow
Deputy Director
American Indian Environmental Office
U.S. Environmental Protection Agency

James McCleary
Attorney Advisor
Office of Diversity, Advisory Committee
Management and Outreach
U.S. Environmental Protection Agency

Stephanie McCoy
Office of Diversity, Advisory Committee
Management and Outreach
U.S. Environmental Protection Agency

Neilima Senjalia
Acting Director
Office of Regional and Bilateral Affairs
U.S. Environmental Protection Agency

Other

Irasema Coronado
Executive Director
Commission for Environmental Cooperation
Secretariat

Robert Varney
Joint Public Advisory Committee

Contractor Staff

David P. Clarke, M.A.
The Scientific Consulting Group, Inc.

Appendix B: Meeting Agenda



Official Meeting of the
National and Governmental Advisory Committees to the
U.S. Representative to the Commission for Environmental Cooperation
April 16-17, 2015

U.S. EPA WJC North
1200 Pennsylvania Avenue, NW
Washington, D.C. 20004
Tel: 202-564-2294 fax: 202-564-8129

AGENDA

~EPA Conference Room B-305~

Thursday, April 16, 2015

- 9:00 a.m. **Registration**
- 9:30 a.m. **Call to Order and Introductions**
Oscar Carrillo, Designated Federal Officer, EPA
- 9:35 a.m. **Welcome and Overview of Agenda**
Brian Houseal, Chair of the National Advisory Committee
Jeff Wennberg, Chair of the Governmental Advisory Committee
- 9:45 a.m. **Opening Remarks**
Karl Brooks, Deputy Assistant Administrator, Office of Administration & Resources Management, EPA
- 10:00 a.m. **Update on U.S. Priorities & Guidance**
(Council Session, Strategic Plan, Operational Plan, TEK)
Neilima Senjalia, Acting Director, Office of Regional & Bilateral Affairs, Office of International & Tribal Affairs, EPA
- 11:00 a.m. **BREAK**

Thursday, April 16, 2014 Continued...

- 11:15 a.m. **Update on Tribal Issues**
Karin Koslow, Deputy Director, American Indian Environmental Office, OITA, EPA
Question & Answer Period
- 11:45 p.m. **Public Comments Period**
- 12:15 p.m. **LUNCH**
- 1:30 p.m. **CEC Update on Operational Plan and NAPECA Grants**
Irasema Coronado, Executive Director, CEC Secretariat
Question & Answer Period
- 2:30 p.m. **JPAC Report-Out**
Bob Varney, Joint Public Advisory Committee
Question & Answer Period
- 3:00 p.m. **BREAK**
- 3:15 p.m. **Preparations for the Council Session**
Sylvia Correa, Senior Advisor, the North American Program, OITA
Question & Answer Period
- 3:45 p.m. **TEK Discussion: Gaining a Deeper Understanding**
Octaviana Trujillo (GAC Tribal Member) & Gail Small (NAC Tribal Member)
Discussion Period
- 5:15 p.m. **Summary & Next Steps Discussion/ Other**
NAC/GAC Chairs
- 5:30 p.m. **ADJOURN**

Friday April 17, 2015

BUSINESS MEETING:

8:30 a.m. **Registration**

9:00 a.m. **Call to Order**

Oscar Carrillo, Designated Federal Officer, EPA

9:05 a.m. **Plenary: Joint Committee Meeting**

Brian Houseal, Chair of the National Advisory Committee

Jeff Wennberg, Chair of the Governmental Advisory Committee

- Discussion on October meeting & July Council Session dates

9:30 a.m. **Public Comment Period**

9:45 a.m. **Committees Meet Separately**

GAC stays in "B-305" Conference Room

NAC meets in "B-319" Conference Room

12:00 p.m. **LUNCH**

1:00 p.m. **Committees Reconvene in Plenary Session**

Report-outs from NAC/GAC Chairs

3:00 p.m. **ADJOURN**

Appendix C: Charge Questions for April 16–17, 2015 NAC/GAC Meeting

CHARGE QUESTIONS: NAC/GAC MEETING

~ April 16-17, 2015 ~

WASHINGTON, D.C.

Dear NAC & GAC Members,

During the 2014 annual CEC Council Session in Canada the Environmental Ministers announced that they will focus on three priority areas for the CEC 2015-2020 Strategic Plan:

1. **Climate Change** – Mitigation and Adaptation, Short-lived Climate Pollutants, Blue Carbon
2. **Green Growth** – Transportation, Clean Energy, Sustainable Production and Consumption
3. **Sustainable Communities and Ecosystems** – Priority Species and Ecosystems, Landscapes and Seascapes, Sustainable Communities and Urban Initiatives

The cooperative initiatives will be guided by three important cross cutting themes:

- Learning from and *assisting vulnerable groups and indigenous communities*
- Enhancing the *alignment of environmental regulatory standards, enforcement, and compliance*
- Enhancing information, *transparency, capacity building and communication*

In particular the Minister's highlighted the valuable and integral contribution that local and indigenous communities can provide to the environmental management activities of the CEC. The Council recognized the importance of preserving traditional ecological knowledge (TEK) and practices of communities that contribute to addressing the effects of climate change, conservation and sustainable use of natural resources and biological diversity.

The EPA Administrator would like advice from the NAC & GAC on the various topics listed below.

- 1) **CEC Draft Operational Plan 2015-16:** The Operational Plan is out for public review. Please let us know if you have any additional comments.
- 2) **NAPECA Grants:** Provide recommendations on the new cycle of NAPECA grants. The request for proposal is slated to go out in late summer. Do you have any views on how to integrate the Environmental Ministers priorities and the Operational Plan focus with the NAPECA grants? Do you have thoughts on better ways to reach broader audiences for this grants program?
- 3) **Communication:** In a previous advice letter the NAC/GAC provided a "CEC 101" presentation for the purpose of education audiences on the work of the CEC. Please describe how NAC/GAC members have reached-out within your networks about the work of the CEC, (i.e., any presentations or other type of outreach you have engaged in during the past year). Do you have suggestions as to how EPA can help in these efforts?