National Advisory Council for Environmental Policy and Technology Meeting

U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
William Jefferson Clinton South, Room 2138
Washington, D.C.

July 25–26, 2019

MEETING SUMMARY

Thursday, July 25, 2019

Welcome, Introductions and Overview of the Agenda
Eugene Green, Designated Federal Officer (DFO), National Advisory Council for Environmental Policy and Technology (NACEPT or Council), Federal Advisory Committee Management Division (FACMD), Office of Administration and Resources Management (OARM), U.S. Environmental Protection Agency (EPA or Agency); Shannon Dosemagen, NACEPT Chair and President and Executive Director, Public Laboratory for Open Technology and Science (Public Lab); and Monisha Harris, Director, FACMD, OARM, EPA

Mr. Eugene Green (NACEPT DFO, FACMD, OARM, EPA) welcomed the NACEPT members and other attendees to the meeting. A list of participants is provided in Appendix A. He provided an overview of the agenda (Appendix B), which included time for public comment per Federal Advisory Committee Act requirements.

Ms. Shannon Dosemagen (NACEPT Chair, Public Lab) welcomed the participants to the meeting and asked them to introduce themselves, including providing their source of inspiration for serving on NACEPT.

Ms. Monisha Harris (FACMD, OARM, EPA) thanked the NACEPT members for their willingness to serve on the Council and her staff for arranging the meeting. She expects this meeting to generate robust discussion that results in innovative ideas that will help EPA to move forward. The advice that NACEPT provides to the EPA Administrator are of great help to him and the federal government.

The official certification of the minutes by the Chair is included as Appendix C.

Update on Efforts to Advance Citizen Science at EPA
Jay Benforado, Chief Innovation Officer, Office of Research and Development (ORD), EPA

Mr. Jay Benforado (ORD, EPA) provided an overview of EPA's use of citizen science. NACEPT produced a report in 2016 that focused on a vision for use of citizen science at the Agency and a second report in 2018 with the theme of implementing partnerships to effectively engage in citizen science activities. The first report provided 13 recommendations designed to help EPA embrace citizen science as a core tenet of environmental protection; invest in citizen science for communities, partners and the Agency; enable the use of citizen science data; and integrate citizen science into the work of EPA. The key point of the first report is that citizen science data use falls along a spectrum from community engagement through enforcement actions. The latter half of the spectrum includes use of data for

decision-making, which is the area for which EPA must prepare per NACEPT's recommendations. The Council's second report provided 10 recommendations to help the Agency invest in partnerships and collaboration to move citizen science from data and information to action; increase state, territorial, tribal and local government engagement with citizen science; leverage external organizations for expertise and project-level support; and encourage transparency through open data and advanced technology policies. In this report, NACEPT focuses on pathways from information to action and how EPA can move from data collection to use of citizen science data for decision-making.

Citizen science is not a new concept. Charles Darwin is known as the original crowd-sourcing scientist; he sent out thousands of letters with the intention of collecting data from others. The term "citizen science" has a number of definitions, and NACEPT defined the term for the purpose of its reports: *In citizen science, the public participates voluntarily in the scientific process, addressing real-world problems in ways that may include formulating research questions, conducting scientific experiments, collecting and analyzing data, interpreting results, making new discoveries, developing technologies and applications, and solving complex problems*. Volunteers can be involved in scientific research and monitoring through many different ways, and to facilitate this involvement, federal agencies developed CitizenScience.gov, an online resource that provides a catalog of federal citizen science activities, a toolkit and more. Examples of federal citizen science projects include Nature's Notebook, HiveScience, Smoke Sense, Cyanoscope, Air Sensor Toolbox, Micro CSI, GardenRoots, mPING and the Local Environmental Observer Network.

The National Oceanic and Atmospheric Administration (NOAA) is using citizen science in a strategic way, with citizen scientists volunteering more than 500,000 hours to more than 40 NOAA projects each year, and EPA is moving in this direction. The public can contribute to NOAA programs that monitor marine debris, measure precipitation and track marine mammals, among others. Citizen science can contribute to EPA's mission through enhanced scientific research and environmental monitoring, community-scale problem solving, and stronger links to the public. For example, volunteer water monitoring is a growing area because of the development of less expensive, simplified technology, and the work of the 1,800 U.S. volunteer water monitoring groups could be leveraged by the Agency. EPA's interest in citizen science is being driven by legislation, policy directives, NACEPT's reports and Government Accountability Office reports.

Another driver is EPA's Office of the Inspector General (OIG), which conducted an audit and concluded that the Agency was using citizen science in an *ad hoc* manner and needed to be strategic about its use. EPA agreed to address OIG's recommendations, including establishing a strategic vision and objectives for managing the use of citizen science, issuing a quality assurance handbook for citizen science, building capacity for using citizen science while expanding awareness, and assessing the data management requirements for using citizen science data. OIG also endorsed EPA's approach to compliance with the Paperwork Reduction Act of 1980.

In addressing OIG's recommendations, EPA became the first federal agency to produce a quality assurance handbook to assist citizen science organizations document and plan the quality of their data. The *Handbook for Citizen Science Quality Assurance and Documentation* (go.usa.gov/xEw43) is for organizations that are starting or growing a citizen science project that requires transparency in the scientific methods for collecting the data. The handbook is accompanied by examples and templates for citizen science quality assurance and documentation. Together, these three components help organizations complete a Quality Assurance Project Plan and provide information for data users to evaluate the quality of data collected by citizen scientists. Citizen science is a gradation of quality of data, and the basic framework of the handbook is organized around the intended use of the data. The next step is to provide training and outreach around the handbook, examples and templates.

EPA has developed 10 guiding principles for using citizen science at the Agency, and these currently are undergoing management review. Administrator-level review will occur in the next 3 to 4 months. The

Agency's emerging vision is to ensure that citizen science data are abundant, accessible and useful for environmental decision-making. The goal is to release the vision within the next 6 months.

Mr. Terry Harwood (NACEPT Member, Coeur d'Alene Basin Environmental Improvement Project Commission) requested that the Council members be provided with a list of links to all of the documents, websites and resources presented during the meeting.

Dr. Kendra Abkowitz (NACEPT Member, Tennessee Department of Environment and Conservation) commented that the quality of data collected by citizen scientists is a challenging area for states. It would be helpful for states if federal agencies created a technological infrastructure to manage data collection and quality, which states then could use. The benefit of creating an informed, engaged community has had unintended consequences. The unplanned increase in examining data quality and managing data increases the workload and places a strain on resources. States must be responsive even within current budget constraints while performing due diligence when taking enforcement action. Mr. Benforado agreed and explained that EPA has been working with states to align efforts. Citizen science data may be used for screening rather than enforcement at this stage, but it also is necessary to "get ahead of the curve."

Mr. William Micklin (NACEPT Member, Ewiiaapaayp Band of Kumeyaay Indians) asked whether traditional ecological knowledge (TEK) had been incorporated in EPA's use of citizen science. Mr. Benforado responded that EPA considers TEK a part of citizen science. The Agency engaged early with tribes and the National EPA-Tribal Science Council and learned that tribes are very interested in determining how to apply citizen science for tribal decision-making and how to incorporate TEK within citizen science for their specific uses and needs. Mr. Micklin noted that tribes in his area have accumulated thousands of years of knowledge.

Dr. Jan Marie Fritz (NACEPT Member, University of Cincinnati) thought that citizens would have more opportunities for involvement in the process given the name "citizen science." She would like to see EPA explain that citizens can be involved in all phases of the science activity (e.g., proposing a project, co-directing or directing research activity with appropriate knowledge or experience) and that this is a significant part of citizen science. She thought that the Agency's efforts in this area could focus more on environmental justice. Mr. Benforado agreed that environmental justice communities find citizen science extremely important because they do not trust the government. Dr. Fritz noted that this is why "participatory research" may be a more descriptive term. Mr. Benforado explained that EPA's efforts are not focused on forcing communities or organizations to use the handbook. The Agency published the handbook for those organizations that would like their data to be of high enough quality to be recognized by EPA. EPA is not conscripting how these groups use their own data. Dr. James Dearing (NACEPT Member, Michigan State University) added that the NACEPT definition of citizen science seems intentionally broad enough to incorporate this aspect and noted that EPA has engaged in the type of citizen science of which Dr. Fritz is speaking (e.g., dioxin contamination in Michigan and collection of specific types of data at the citizens' request).

Dr. Abkowitz asked whether the Agency has explored opportunities to realize synergies between citizen science and the public participation process. EPA and states often are criticized for not allowing the public to participate in the regulatory process, but more opportunities for participation exist than the public realizes. Increasing public participation in the beginning of the regulatory process and documenting that regulatory changes have been informed by citizen science could build a good deal of credibility for EPA as a regulatory agency. Mr. Benforado explained that this was one of the main themes of the OIG report that the Agency is exploring.

Dr. Irasema Coronado (NACEPT Vice Chair, Arizona State University) asked whether any EPA grants programs focus on connecting individuals, regions, citizen science organizations and academia to perform citizen science. Mr. Benforado explained that EPA does not have a grants program specific to citizen

science, but existing grants programs allow citizen science to be used within the framework of research projects. EPA needs to work on including the private sector within the grants framework as well.

Opening Remarks

Charge to NACEPT
Angela Chung, Associate Director, Water Division, EPA Region 10

Ms. Angela Chung (EPA Region 10) thanked NACEPT for considering the charge to provide advice about a potential product durability rating system (Appendix D). This charge has been prompted by the needs of Alaskans but has a broader potential to apply to populations residing within extreme climates. EPA Region 10 sponsors a backhaul program to remove hazardous waste from rural Alaska communities. These efforts have highlighted the inadequacies of certain products within the extreme climate conditions in Alaska. Similar concerns exist across other Arctic communities. It is difficult and expensive to bring products in and remove them from remote and isolated Alaska villages. As a result of these difficulties, unlined landfills and burning of waste without the use of emissions practices are allowed in Alaska, and these waste management options lead to environmental and human health concerns.

Overview of Idea
Margaret McCauley, Trash Free Waters Program, EPA

Ms. Margaret McCauley (EPA) explained the challenges that led to the idea of developing this charge: expensive transport of products to Alaska, expensive shipment of broken items for repair or disposal, quicker breakdown of products in extreme conditions, and very limited budgets for both purchase and waste management in Alaska communities. As a result, Alaska accumulates more trash more quickly and has less ability to deal with it than mainland U.S. communities. Ms. McCauley displayed an image of an "improved" site with new fencing to keep trash contained that proved to be ineffective to illustrate the point that even more durable products break down more quickly than expected in Alaska, especially with changing climate conditions. New challenges have arisen as a result of warming, and innovative solutions are needed to strengthen landfills. Other communities and groups (e.g., military) also are interested in knowing the durability of items under extreme conditions.

Focus groups held in rural Alaska communities indicated that the biggest challenges that would be most useful in addressing include plastics, electronics and soft fittings for heavy equipment that crack in extreme cold (e.g., gaskets). A life-cycle analysis (LCA) and comparison would be helpful to understand the specific costs of products affected by climate change. Development of a rating system would help purchasers to understand their choices and simplify complicated product comparisons, as well as bring together a range of relevant information in a clear, understandable way. EPA would like NACEPT to explore whether it makes more sense to develop an "Arctic Tough" durability rating or integrate durability into existing rating systems.

Mr. Micklin asked whether the "Arctic Tough" rating system is for durability throughout Alaska because the Arctic Circle begins at the 66th parallel and includes only one-third of the state. Other conditions besides temperature, such as salinity and water, also must be considered. Ms. McCauley responded that the name was intended to be "catchy" and neither specifically refers to nor is constrained by geographic location. To be functional, the system should apply to areas with extreme conditions throughout the United States. Other Artic countries also may be interested in such a system.

Dr. Ramesh C. Chawla (NACEPT Member, Howard University) asked whether EPA would like NACEPT to examine the full life cycle of a product or address only the disposal portion. Ms. McCauley responded that all issues should be examined, including what specific conditions affect products, how often they must be replaced, how many are being used, how they affect landfill usage, and so forth.

Dr. Abkowitz asked whether NACEPT also could explore durability under extreme heat conditions to increase the applicability of the rating system. Dr. June Weintraub (NACEPT Member, San Francisco Department of Public Health) added that her interpretation of the charge is that it is explicit to serving Alaska communities. Ms. McCauley explained that the effort began with Alaska because Region 10 serves the state. Although Alaska is the inspiration for the charge, EPA does not want to preclude other settings, and the rating system could be expanded as appropriate.

Dr. Jason Knouft (NACEPT Member, St. Louis University) commented that permafrost no longer is effective in serving as a landfill liner. Will the "Artic Tough" name refer to long-term degradation and health effects because the product will remain in Alaska in a landfill, or will it be removed from the state, such as how Finland is dealing with its waste? Ms. McCauley responded that the inspiration was for Alaska to have fewer products to deal with in the disposal phase. EPA would like the Council's input on the long-term issue of the durability of products. Ms. Chung added that long-term waste-disposal practices are part of the puzzle but outside of the scope of the charge. NACEPT should examine durability while recognizing that EPA continues to work on the issue of long-term waste-disposal practices and the changing climate in Alaska.

In response to a question from Dr. Dearing, Ms. McCauley reiterated that the three categories of products consistently identified as problematic by focus groups are plastics, electronics and soft fittings for heavy equipment. The soft fittings could fit within the larger category of plastics.

Dr. Graciela Ramirez-Toro (NACEPT Member, InterAmerican University of Puerto Rico) asked for clarification about permitting in terms of the charge. Ms. McCauley replied that permitting regulations are outside of the scope of the charge.

Ms. Barbara Jean Horn (NACEPT Member, Colorado Parks and Wildlife) asked whether NACEPT could recommend different solutions for plastics and electronics. Ms. McCauley responded that the Council could provide different recommendations for the different categories.

Dr. Gregory Wilson (NACEPT Member, Riverside Conservancy) commented that any discussion of products and product LCA must include representatives from manufacturers. NACEPT's efforts will be much less effective if manufacturers are not included. Ms. Chung and Ms. McCauley agreed, but they received a "lukewarm" response when they contacted manufacturers to participate in this meeting. Ms. Dosemagen added that a great deal of NACEPT's work would be conducting follow-up interviews with stakeholders, including manufacturers.

Dr. Fritz asked who would provide the necessary information for the effort. Ms. McCauley responded that EPA would provide as much information as possible, but research by NACEPT members also will be a valuable source of information.

Panel: Working in Alaska (Part I): Effects of Extreme Conditions

Background on Rural Alaska Conditions and Effects on Products
Lynn Zender, Executive Director, Zender Environmental Health and Research Group

Ms. Lynn Zender (Zender Environmental Health and Research Group) thought that an "Alaska Safe" standard to indicate toxicity would be a useful accompaniment to a durability rating. She explained that different products are handled differently among the various villages. Batteries and e-waste generally are backhauled; scrap metals, vehicle parts and household trash generally are not. Approximately 80 percent of rural Alaska villages engage in open burning, with approximately one-quarter of these communities burning three or more times per week. Of these, approximately one-quarter have their burn sites located within 0.25 miles of the village. The U.S. Army Corps of Engineers has identified 150 villages that will need to be moved because of the changing climate, and solid waste plans must be considered during these moves.

When considering standards for Alaska, it is important to recognize that the uniqueness of living in rural Alaska equates to very different usage of vehicles and other products compared to use in the mainland United States. Some vehicles, such as ATVs, are used in ways that they were not designed for. Poorly maintained roads, lack of garages and unpredictable weather are additional challenges. ATVs last for a considerably less amount of time than in the lower 48 states, with a maximum of 5 years and often no longer than 2 years. When they break down, it is nearly impossible to find the parts or expertise to repair them, so new ones are ordered to replace the old ones. It would be helpful if products contained fewer parts and associated supplies.

Rural Backhaul and Solid Waste Management Improvement Program
Doug Huntman, Owner, Delta Backhaul Company

Mr. Doug Huntman (Delta Backhaul Company) explained some of the issues that rural Alaskans face, including limited resources to manage solid waste. His company partnered with communities to address higher priority projects and found that many communities have a "dump" mentality (i.e., everything goes in the dump). Few roads connect villages, some of which can be reached only by boat (summer) and ice roads (winter). Air travel is expensive and limits the size of goods carried. As a result, it is expensive to transport items to villages, and backhaul of items is difficult. Mr. Huntman described the harsh climate that includes extreme winters and wet summers, explaining that many items are stored outside in these conditions because of lack of garages. The melting permafrost also presents a challenge. In some areas, burning is not possible because the conditions are too wet.

A backhaul event was held in Bethel, during which a great amount of waste was collected. Delta Backhaul Company has partnered with many organizations, communities and volunteers to conduct additional backhaul events. The effort is unique because it is privately funded, mostly through a partnership with NOVAGOLD Resources, Inc. and its Donlin Gold project. Following the development of outreach materials for villages, the partnership collected household waste, including used oil, solvents, household hazardous chemicals, e-waste, fluorescent tubes, lead-acid and household batteries, and oil-based paint. Landfill projects undertaken by the partnership include solid waste training, landfill cleanup, burn-unit repair, landfill fence installation and solid waste technical assistance. The efforts have received positive feedback from the Alaska Department of Environmental Conservation, tribes and tribal consortia, partner organizations, shipping companies, and equipment vendors.

Panel Discussion
Moderator: Margaret McCauley, Trash-Free Waters Program, EPA

Mr. Harwood asked whether backhaul companies or Alaska communities had considered working with manufacturers to develop portable propane incineration systems. He also noted that some individuals may not take care of their equipment as well as others, even taking the extreme conditions into account. Ms. Zender replied that building a better burn box is the "holy grail" for Alaska communities. Clean Air Act–compliant burn boxes have been abandoned by villages because of the need for fuel that is not accessible to them, so use of these boxes became unsustainable. Partnerships have been established with Responsible Battery Coalition, Inc. to increase battery recycling.

Mr. Gary Mason (NACEPT Member, iSi Environmental) commented that the Council's charge is to address the durability of products. He asked Mr. Huntman where he thought the "biggest bang for the buck" would be. Mr. Huntman responded that he would focus on televisions, refrigerators and electronics that look brand new but have ceased functioning. Many of the utilities run on diesel gas, and determining whether a correlation exists between diesel gas and malfunctioning electronics would be helpful. Villages often do not have the expertise to make even simple repairs, so regular maintenance by traveling service professionals would be beneficial.

Dr. Benjamin Haywood (NACEPT Member, Allegheny College) mentioned the recent heat wave causing record-high temperatures within Alaska and asked whether Council members should consider this end of

the spectrum as well. Mr. Huntman thought that extreme temperatures on both ends of the spectrum should be considered. Changing environmental factors must be taken into account. Ms. Zender added that the freeze-thaw cycle in Alaska, which often includes 50-degree (Fahrenheit) temperature changes within a 12-hour period, must be considered; these temperature shifts often cause more problems than the extreme cold.

Product and Service Sustainability Standards 101
Elise Owen, Standards Executive, Office of Pollution Prevention and Toxics (OPPT), Office of Chemical Safety and Pollution Prevention (OCSPP), EPA, and Alison Kinn Bennett, Senior Advisor, Environmentally Preferable Purchasing (EPP) Program, OPPT, OCSPP, EPA

The EPP Program was established in response to the significant demand for environmentally preferable products and services and the need for agreed-on definitions of what constitutes environmental preferability. This program harnesses the power of purchasing to reduce the federal government's environmental footprint. The program's approach has been to rely on private-sector standards and federal procurement to reduce this footprint.

Standards help to solve problems and create a clear path of progress for industry that is aligned with federal purchasing needs and broader marketplace demand. Standards serve as a vehicle to gather more data and access technical expertise outside of the government. Standards take less time to affect the market and have less barriers to finalization than regulations. They allow for robust, open discussions with key stakeholders. The National Technology Transfer and Advancement Act of 1995 requires federal agencies to use and engage in private-sector standards development to meet policy objectives. Federal agencies may develop their own standards if private-sector standards do not meet their needs, but this must be justified and reported to Congress and the Office of Management and Budget.

At the time the law was enacted, 13 ecolabels existed; today more than 460 exist. Some address multiple environmental impacts over the life cycle, whereas others address a single environmental impact within one life-cycle phase. It is difficult to determine which are actual standards versus marketing ploys. After listening to multiple stakeholders, EPP determined which standards agencies were using consistently and provided recommendations that resulted in a more streamlined set of nonfederal sustainable standards and ecolabels.

If no sustainability standard or ecolabel in a purchase category meets the needs of the market, then federal agencies work with the private sector to develop such a standard. Standards developing organizations generally manage the process of developing standards with the assistance of trade associations, professional societies, companies and certification bodies. Governments rarely manage the process. Multi-stakeholder groups are formed to develop product and service sustainability standards. Ideally, all stakeholders with a material interest in the outcome (e.g., manufacturers, suppliers, institutional purchasers, academia) engage in the development of a standard.

Discussion

Ms. Horn asked how the program evaluates whether a standard achieves its original goal. Ms. Alison Kinn Bennett (OPPT, OCSPP, EPA) responded that the process includes a feedback loop, and the stakeholder community reconvenes to discuss lessons learned and revise the standard if necessary. Although the science is evolving, some calculators are available to calculate the environmental impacts of standards. EPP places more value on those standards and ecolabels that provide information on their impacts. Ms. Horn summarized that developing a standard is the beginning and not the end of the standards process.

Dr. Wilson asked about available standards that relate to NACEPT's charge. Ms. Elise Owen (OPPT, OCSPP, EPA) responded that in finding relevant standards, senior management defines the priorities and the program reaches out to the private sector. Buy-in and a market are needed to establish standards.

Mr. Harwood noted that NACEPT could examine standards relating to how electronics handle fluctuations in voltage.

Dr. Weintraub asked for the presenters' opinions on the charge and related challenges. Ms. Bennett replied that a single durability standard will not address all of the challenges that Alaskans face.

Dr. Haywood asked whether a more narrow or broad scope was the most feasible approach. Ms. Bennett explained that if the scope is too narrow, unintended consequences often arise. If the scope is too broad, standards development is challenging. Ms. Owen added that the more stakeholders involved and the more individuals who will be positively affected by the standard, the greater the energy will be around a standards development effort. Standards development organizations look for marketing opportunities.

Panel: Working in Alaska (Part II): Effects of Extreme Conditions
Scott Tarbox, Hazardous Waste Program Manager, Joint Base Elmendorf-Richardson, and Santina Gay, Tribal Coordinator and Indian General Assistance Program (IGAP) Project Officer, Alaska Operations Office, EPA Region 10

Mr. Scott Tarbox (Joint Base Elmendorf-Richardson) reiterated that durable products are needed in Alaska because of transportation and disposal issues. Products must last an entire season because only 3 months of the year are available to repair those items that can be repaired.

Ms. Santina Gay (EPA Region 10) reiterated the accessibility issues, poor infrastructure, lack of indoor storage and the freeze-thaw cycle faced by Alaskans, including tribes and tribal organizations. Precious landfill space is taken up by universal waste with shortened life spans. Products that are brought to communities via barge and planes should have a plan for removal and disposal because communities have limited resources to remove them and limited landfill space in which to dispose of them. Tribes in Alaska do not have Treatment-as-a-State status as many tribes in the lower 48 states do, which creates an additional challenge. Alaska Native villages have little access to funds to address their problems.

The Region 10 IGAP program shares best practices and lessons learned among Alaska's 550 tribal environmental professionals, including regularly presenting and providing IGAP training at the annual Alaska Tribal Conference on Environmental Management in Anchorage. The Arctic Contaminants Action Program Working Group of the Arctic Council helps EPA staff and tribes to share their work, highlight successful case studies and create new projects that help Arctic communities that are part of the Arctic Council. The Working Group is comprehensively examining solid and hazardous waste management from the standpoint of rural communities to help Arctic communities increase their resiliency over time.

Panel Discussion
Moderator: Margaret McCauley, Trash-Free Waters Program, EPA

Dr. Abkowitz asked about products and equipment that perform well. Ms. Gay replied that she had not received any feedback about specific products, but development of a product suited for the Arctic should be nontoxic because it most likely will remain in the community even after its disposal.

Dr. Ramirez-Toro asked about the size and number of communities that would be affected if the charge is addressed. Ms. McCauley explained that the solution should help the broader set of communities that experience extreme conditions. Ms. Gay added that populations range from 12 residents to 300,000 in Anchorage, the state's most populous city. Approximately 250 small villages exist in Alaska, and the IGAP program serves 200 tribes. From an IGAP perspective, the best approach would be to select pilot communities to test the standards.

Dr. Knouft asked whether the "Arctic Tough" standard should benefit small communities or those entities with larger procurement needs. What do those who will benefit from such a standard need the "Arctic Tough" designation to provide them? Ms. Gay responded that her focus is assisting tribal and

disproportionately affected communities with limited resources to environmentally manage their landfills. Ms. McCauley added that the name is catchy, but it may not be the name of the ultimate designation following NACEPT's work.

Dr. Weintraub asked whether market research had been performed in communities to determine whether a durability standard is of interest to them or whether assistance with disposal would be enough help for them. Mr. Tarbox explained that villages do what they need to do because they have subsisted on the land since time immemorial, and tribes are very interested in waste disposal. The military also is interested in some of the solutions for deployed situations.

Ms. McCauley explained that she had communicated with Recreational Equipment, Inc. (REI) about the potential of selling products with an "Arctic Tough" rating to its customers, many of whom would pay a premium for the products with the designation whether they truly needed it or not. Dr. Wilson asked whether REI thought that a sufficient market existed. Ms. McCauley said that the Alaskan market was not enough, but military applications could make it viable. Mr. John Burchill (U.S. General Services Administration [GSA]) explained that in addition to serving as the National Account Manager for EPA, he serves as the National Account Manager for the U.S. Army, and he agreed that military applications would help to drive this effort. The U.S. Air Force is leading the way in category management. Dr. Wilson thought that the premium cost of the designation may be too expensive for the average Alaskan.

Ms. Gay noted that innovative groups that work to better the environment and human health could be involved in the marketability effort. The Arctic Youth Ambassadors Program, AmeriCorps and other youth programs can be targeted for contests to engage youth in developing innovative solutions and inspiring them to become the next generation of contractors and professionals who assist their villages. These youth may want to assist companies in developing prototype products that are durable for use in Alaska.

Dr. Knouft thought that it might be worthwhile to consider products that would help Alaskans and consumers in the mainland United States address climate change issues during the next several decades.

Mr. Harwood cited the example of the "good, better, best" system of the Sears, Roebuck and Company catalog. A durability spectrum will allow consumers to buy what they can afford or determine that they need to purchase the highest rated product. If federal funding is used, the government should require that the best product for its application be purchased.

Ms. Horn noted that a paradigm shift is needed, as well as short- and long-term solutions. Industry could be made responsible for the life cycle of the products. The pharmaceutical industry could be explored as an example. Ms. Gay agreed that viable, accessible solutions are needed to encourage innovation.

Dr. Dearing noted that consumer-behavior studies show that those with disposal income discard items for reasons other than the items do not work. NACEPT should be careful to make recommendations that ensure that a durability rating translates into longer use of the items.

Dr. Chawla would like to see more general durability guidelines developed that include more specific guidelines for specific needs and uses. It is difficult to develop standards for a large variety of products.

Dr. Coronado asked whether other Arctic countries or the Arctic Council are addressing this issue. Ms. Gay explained that Iceland, Russia, Norway, Sweden and Canada are interested in helping indigenous communities improve their environmental and human health. All six Arctic Council Working Groups will be initiating new projects within the next 2 years. Ms. Katherine Buckley, who serves in EPA's Office of International and Tribal Affairs, may be able to provide additional information to the Council.

Panel: Living in Alaska: Perspectives From Native Village Representatives
Roland White, IGAP Coordinator, Yukon-Kuskokwim Village of Tuntutuliak, and Desiree Duncan, Director and Raymond E. Paddock III Environmental Coordinator, Native Lands and Resources, Central Council of the Tlingit and Haida Indian Tribes of Alaska

This session was canceled because of technical difficulties.

Panel: Private Sector Standards and Ratings

Measuring a Product's Duration of Service
Julie Brown, Director, Higg Index for Durability, Sustainable Apparel Coalition

Ms. Julie Brown (Sustainable Apparel Coalition) explained that the core tool to help the apparel industry become more sustainable is the Higg Index for Durability, which measures performance from social, environmental and sustainable perspectives. The Higg Product Module uses a life-cycle approach to calculate the life-cycle impacts of a product, creating a consistent method for companies to use and collect data that consumers can use for comparability. Because LCAs do not consider the length of service of a product, the Higg Index uses the term "duration of service" rather than the term "durability."

Challenges include the lack of data on consumer use and product lifetime, the broad assumptions made during product assessment, the lack of methods to calculate the benefits of longer lasting products, and the variability of a product's duration of service depending on the user. LCA assumptions include those related to materials, manufacturing, logistics and retail—all of which can be measured—and product care and end of use, which are variable and dependent on consumer behavior.

A wide variety of companies participated in the development of the Higg Index. The foundation of the approach was to leverage quality tests given that past Sustainable Apparel Coalition efforts showed that internal standards for testing products are remarkably similar across companies. The coalition builds on this generally accepted quality threshold. Material and full product tests are considered, with a focus on the physical attributes that make the service last longer. The appropriate thresholds for each test are determined, with no more than five tests performed. If the product tested meets the specified quality thresholds, it is assigned a Duration of Service Factor. Products selected for the tests include athletic and athleisure shoes, knit and denim products, bed linens, and woven products. The steps of the process are to establish common quality tests and specifications, establish common quality specification thresholds, check benchmarks against company expectations, validate thresholds against consumer expectations, and validate the proof of concept. All companies involved must agree on the identified quality threshold's correlation to duration of service. Ms. Brown displayed the content template and scoring to illustrate the testing process, as well as the equations for total enabled product impact and enabled impact per use.

Certified Alaska Tough
Robbin Garber-Slaght, "Certified Alaska Tough" Building Materials Program, Cold Climate Housing Research Center

Ms. Robbin Garber-Slaght (Cold Climate Housing Research Center) explained that her organization works with residential housing in Alaska and examines the efficiency and durability of building materials for Alaska. The center is funded primarily by the state but also receives some federal and private grants and researches effective and durable materials, products and applications for use across the entire state. The center established the "Certified Alaska Tough" Building Materials Program in 2001 to certify products for use in Alaska. Alaska Senator Ted Stevens gave the center the charge after a fatality involving a window that did not perform as it was supposed to because of Alaska's conditions. A safe window was developed, but it was too expensive to market in Alaska, and manufacturers were not interested in producing it. The effort then focused on identifying what could be done to existing windows to make them safe, durable and effective under Alaskan conditions.

EPA's ENERGY STAR® program has four climate zones for windows, and Alaska is included in the same zone as Seattle, Washington. The U.S. Department of Energy has eight zones. Canada's ENERGY STAR program includes three zones, and Alaska is similar to the zone that includes Canada's Yukon territory. Ms. Garber-Slaght displayed a rating sticker from the National Fenestration Rating Council®, highlighting how confusing it is for the average consumer. A "Certified Alaska Tough" rating sticker indicates to the consumer that the product can withstand the extreme climate conditions of Alaska while meeting strict energy efficiency standards. The center examined all conditions (e.g., temperature, wind) across Alaska's various climes to develop the most rigorous testing to establish certification requirements for thermal performance; air, water and structural performance; and air leakage. These are tested each year to ensure consistency.

Ms. Garber-Slaght concluded that Alaska is incredibly climate and culturally diverse. Some products work well in Alaska, but very few are designed specifically for Alaska, which is a very small market. "Certified Alaska Tough" is moving toward certifying products other than windows. Ms. Garber-Slaght cited the Arctic Ultraflex Blue® extension cord as an exemplar product to emulate; the cord was developed for use in Minnesota but works well and is popular in Alaska.

Cradle to Cradle Certified™ Products Program (C2C)
Susan Klosterhaus, Vice President, Science and Certification, Cradle to Cradle Product Innovations Institute (C2CPII)

Dr. Susan Klosterhaus (C2CPII) explained that her institute envisions a prosperous economy where safe materials are intelligently cycled and manufactured in ways that positively impact people and the planet. This vision is implemented through incentives, and C2C is the leading multi-attribute, multi-industry, science-based standard for verifying products for the circular economy. The key to the program is multi-attribute assessment and certification, in which products must meet requirements in five key areas: material health, material reutilization, renewable energy and climate, water stewardship, and social fairness. The certification is designed for continuous improvement with five levels, each containing increasing requirements. Companies must continue to improve their product certification level to remain in the program.

The C2C Registry contains approximately 700 product lines representing thousands of products, and recognition of C2C certification is growing among various entities, including Amazon, Walmart, Home Depot, EPA and the U.S. Green Building Council LEED v4 system.

Under the material health key area, products are made from chemicals and materials that protect human health and the environment, generating a positive impact on the quality of materials available for future use and cycling. Within material reusability, product circularity ensures that products are intentionally designed for their next use and are actively being cycled in their intended use cycles. Under renewable energy and climate, product manufacturing results in a positive impact on the renewable energy supply and the balance of climate changing greenhouse gasses. Within the water stewardship key area, water is treated as a precious and shared resource, watersheds are protected, and clean water is available to people and all other organisms. To address social fairness, manufacturers are committed to upholding human rights and applying responsible business practices to all stakeholders.

C2CPII is engaging in a new standards development process. Technical advisory groups were formed following a public call for applications. The institute developed the scope of issues to address and draft proposals. The technical advisory groups and Stakeholder Advisory Council provided feedback on the draft proposals, which were subsequently approved by the C2CPII Certification Standards Board. An initial draft of the new standard has been created. The next step is to open a 60-day public comment period, which will commence on August 5, 2019, and close on October 4, 2019. The final draft of the new standard will be developed with public input and is expected to be published in the first quarter of 2020.

Panel Discussion
Moderator: Margaret McCauley, Trash-Free Waters Program, EPA

Dr. Abkowitz asked Ms. Brown about the primary driver for businesses to seek the duration of service rating. Ms. Brown responded that consumer demand for sustainability is the top driver. Durability is especially important to outdoor companies. Other drivers are company ethos and philosophy.

Dr. Chawla asked Ms. Garber-Slaght why Alaskan companies did not partner with Canadian companies that are making durable products for a similar climate. Ms. Garber-Slaght replied that her program is working with Canada.

Mr. Mason asked how well the "Certified Alaska Tough" window has penetrated the market. Ms. Garber-Slaght responded that the windows are sold by the largest building supplier in Alaska.

Mr. Harwood commented that Montana, Wyoming and Idaho are potential markets for products certified for extreme cold environments.

Ms. Laureen Boles (NACEPT Member, New Jersey Environmental Justice Alliance) asked Dr. Klosterhaus what products are certified and what barriers to certifying products exist in the market. Dr. Klosterhaus responded that 75 percent of the products are building materials and furniture; flooring is the largest product category. The largest barrier is cost. Ms. Bennett added that C2C is among the programs recognized by the federal government.

Dr. Chawla asked whether C2CPII has its own laboratories. Dr. Klosterhaus explained that the institute does not have its own laboratories and does not rely on Material Safety Data Sheets. Instead, it relies on the materials that manufacturers send to assessors. External laboratories are used for testing.

Dr. Haywood asked Dr. Klosterhaus whether manufacturers have shown an interest in expanding the circularity and durability of their products. Dr. Klosterhaus replied that the focus is on material health and reuse.

Dr. Abkowitz asked Dr. Klosterhaus whether C2CPII collects data regarding where the certified products are distributed and how they are used. Dr. Klosterhaus responded that the institute knows where the products are sold but does not collect distribution and use data. Approximately two-thirds of the certified products are certified to be sold in Europe.

GSA e-Tools Overview
John Burchill, National Account Manager for EPA, GSA

Mr. Burchill explained that GSA has a number of e-tools, including GSA Advantage!®, Acquisition Gateway, eBuy and eLibrary. GSA Advantage! provides one-stop shopping for more than 28 million products and services, including the most detailed product description and pricing of the various schedules-related e-Tools. This tool allows easy compliance with regulation and competition requirements and can be used for market research. GSA adds icons (i.e., endorsements) to some products if the applicable standards are required by statute, regulation or Executive Order. The two primary considerations are whether the standard or ecolabel adds value to federal customers or has a robust product registry to enable GSA to provide an icon without vendor input. Mr. Burchill provided several screenshots of the GSA website, particularly in relation to green products and services, and demonstrated how to use the registry, shopping cart and advanced search features, as well as how to negotiate a lower price with Multiple Award Schedule contractors.

The key elements of the GSA retail store concept include supply chain integration of both the customer-facing and back-end processes, customized inventory by location, GSA management of vendors, GSA

oversight of the payment process, management reports for spend analysis, and inclusion of federal and military specifications standards. The U.S. Marine Corps is GSA's flagship customer.

Dr. Chawla asked whether nonprofit organizations could purchase through GSA. Mr. Burchill responded that only the federal government and tribal governments are fully authorized to purchase through GSA. State and local governments have some access. Nonprofit organizations and academic institutions are not authorized to purchase goods and services through GSA. Dr. Chawla added that vendors will not match GSA pricing for academic institutions.

Dr. Abkowitz asked what percentage of products in the GSA catalog have an icon or certification associated with them. Mr. Burchill was unsure of how to track that data. Dr. Abkowitz asked whether Mr. Burchill had noticed a cost difference for certified versus noncertified products. Mr. Burchill has not examined this aspect, but generally vendors pass on the cost of certification. Dr. Abkowitz commented that even any general numbers that Mr. Burchill could provide would assist NACEPT in addressing the charge.

Dr. Chawla wondered whether the state could purchase products through GSA and sell them to individuals in Alaska. Mr. Burchill explained that he would need to investigate the legality of implementing this type of a solution.

In response to a question from Dr. Coronado, Mr. Burchill explained that anyone can view the GSA catalog, including product details and pricing, but government credentials are needed to purchase.

Public Comments
Eugene Green, NACEPT DFO, FACMD, OARM, EPA

Mr. Green called for public comments; there were none.

Discussion of Agenda and Objectives for Friday, July 26, 2019
Shannon Dosemagen, NACEPT Chair and President and Executive Director, Public Lab

Ms. Dosemagen asked the NACEPT members to summarize the overarching questions or issues that they would like the Council to consider.

- Dr. Abkowitz: NACEPT should examine whether to select a more narrow or broader scope and whether recommendations should be applicable beyond a certain region.

- Dr. Chawla: What actions are other cold-climate countries taking? NACEPT also should examine the literature of commercial vendors to determine whether their products and services could be modified for use in Alaska.

- Dr. Weintraub: NACEPT should explore why the Council should address this charge and identify its benefits. Are there other problems for which durability is a possible solution? Serviceability must be explored as an adjunct to durability, and durability must translate to a decreased likelihood of disposal.

- Mr. Harwood: The variability of consumer behavior must be considered and cannot be controlled. Recommendations about durability cannot change certain behaviors.

- Mr. Micklin: Performance, interoperability and safety are the top-level attributes of durability. Native communities have different perspectives regarding resiliency compared to non-Native populations. Self-determination is a very important aspect of resilience to tribes and Alaska Native villages. There is a disconnect between science and Native beliefs regarding what resiliency truly embodies. Tribal communities are particularly susceptible to chemicals, toxins,

climate change effects and so forth. They are closed communities: What comes in, stays in. NACEPT's efforts must be meaningful.

- Dr. Ramirez-Toro: It is important to understand the problem that NACEPT is trying to solve. She comes from an island, which has many of the same challenges that have been described. NACEPT should explore how these problems are addressed in other areas.

- Dr. Fritz: Given the charge, she would like the recommendations to consider items that will not leave the area once they arrive. Creative reuse could be part of the solution. Training or access to experts via YouTube could be provided so that residents can perform repairs themselves.

- Dr. Knouft: How viable is an "Alaska Tough" or "Arctic Tough" certification? Can a small market support the cost of certification?

- Dr. Haywood: NACEPT should have a conversation or perform research about infrastructure and systemic issues that frame and inform the charge.

- Dr. Coronado: The two key elements from her perspective are communities and individuals.

- Ms. Horn, Ms. Hilary Clark (NACEPT Member, Olsson Associates, Inc.) and Mr. Jeff Marks (NACEPT Member, E2Tech—Environmental and Energy Technology Council of Maine) endorsed the other members' comments.

In response to Mr. Micklin's perspective, Dr. Chawla noted that often communities have much different needs than the federal government thinks that they have. It will be important to get a sense of what Alaska communities need, which may help the Council to better address the charge.

Ms. Dosemagen explained that NACEPT must develop an advice letter in response to the charge within the next 7 months, indicating whether a durability rating is a worthwhile stand-alone effort or should be integrated into existing standards. Following this advice letter, the Council has 12 months to make recommendations. She asked the NACEPT members to re-read the charge and consider what stakeholders NACEPT needs to hear from, what help the Council needs to inform ideas, and what research is needed so that by the end of the meeting, the members have developed a clear list of next steps and actions.

In response to a question from Dr. Wilson, Ms. McCauley explained that NACEPT should determine whether development of a durability product rating is feasible and, if so, whether EPA or another entity should lead the effort.

Dr. Weintraub asked whether NACEPT could provide alternative recommendations if it determines that developing a durability product rating is not feasible. Ms. McCauley responded that alternative recommendations would be welcome.

Dr. Fritz thought that NACEPT's response to the charge should include community feedback about the issues that are of concern in each community. Ms. McCauley clarified that the community feedback was not obtained through a rigorously designed study, and Council members may find other facets as they interview Alaska community members.

Ms. Dosemagen closed the discussion by asking each NACEPT member to describe in one to three words the primary issues that the Council will need to address and recessed the meeting at 5:19 p.m. EDT.

Friday, July 26, 2019

Discussion of Council's Response to NACEPT Charge on Alaska Tough Product Durability Ratings
Shannon Dosemagen, NACEPT Chair and President and Executive Director, Public Lab, and NACEPT Members

Ms. Dosemagen asked Dr. Emmanuel Crisanto Battad Liban (NACEPT Member, Los Angeles County Metropolitan Transportation Authority), who had been unable to attend the first day of the meeting, to introduce himself. Following this introduction, Ms. Dosemagen asked each NACEPT member to share his or her intent for the day in three words or less. Responses included the following: focus, clarity, positive outlook, sustainability, understanding, inclusive, oversight, practicality and innovation.

Ms. Dosemagen summarized the previous day's discussion, noting that the Council will need to consider the issues of colonialism and climate change in addressing the charge. There are many questions and potential problems, and the topic is complex. NACEPT must identify the stakeholders that the members need to speak to, and the Council must propose the necessary research to answer the charge within the next few months.

Mr. Harwood noted that after listening to the speakers, he thought that NACEPT needs to explore the operational capabilities of products, especially electronics. A large portion of the problem may be electronic devices and their operation.

In response to a question from a NACEPT member, Ms. Dosemagen and Mr. Green explained that the Council members and their networks serve as the resources for researching and writing the advice letter and recommendations. Mr. Green added that FACMD and Region 10 will provide support to the members.

Dr. Wilson would like the Council to determine the top three most important but troublesome products and then gather the appropriate manufacturers together to discuss what they can and are willing to do.

Dr. Haywood asked how the NACEPT members should perform interviews. Dr. Coronado responded that interviews occur through an informal process; they are not data-based, as would be expected for publishing in an academic journal. For example, she plans to speak to the material engineers at her university and informally ask for their opinions.

Dr. Liban noted the complexity of the topic and wondered whether the Council should focus on how Alaska consumers would use products or how EPA would use the recommended solutions.

Mr. Micklin stressed that Alaska communities need durable products, but a durability rating system could be expanded to meet the needs of other Arctic indigenous communities. It is possible to develop an expanded system that still is focused on meeting the needs of Alaskans. He asked whether developing a definition of durability would be included in the scope of the charge. Ms. Dosemagen explained that this could be included in defining the problem, and the scope then could be based on the new definition. NACEPT has flexibility in the products that it can provide, including producing several letters, each focusing on a different topic within the overall theme.

Ms. Boles thought that the Council should consider whether the problem derives from the climate or geographic remoteness. The root cause must be defined and best practices and lessons learned identified.

At Ms. Dosemagen's request, the NACEPT members identified in one to three words themes that could be explored, including the duality of the problem, geographic scope, the definition of "extreme," implementation, disproportionality, purchasing processes of Alaskans, ground-truthing, community voices, the relationship between impacts and economic activities, clear methods, baselining of conditions, inclusive voices, stakeholders, constraints to bringing products to the marketplace (i.e., industry voices),

measurements and outcomes, historical context, food security, practicality, and solving actual rather than invented problems.

Dr. Dearing finds hearing from communities beneficial, but he does not think that he understands the problem fully or how it relates to other problems.

Ms. Horn thought that communities agree on the problems, but she would like to hear the opinions of community members regarding potential solutions that they see as viable because this is not a top-down issue. She also would like to hear about barriers to solutions.

Dr. Chawla cautioned that NACEPT must correctly define the problem so that it can recommend appropriate solutions. It is difficult to define the problem without a good deal of interaction with stakeholders. Once the problem is defined, the Council may not be able to address all aspects, but it can address some.

Dr. Knouft noted that NACEPT should discuss a definition regarding what "extreme" conditions entail. In regard to the importance of historical context, cultural sensitivity will include different things for different tribes. He does not like the term "durability" because it connotes a certain type of product, and use of this term could have unintended consequences if increasing the durability of a product leads to increased toxicity.

Ms. Horn thought that the procurement process needs to be innovated. Mr. Harwood cautioned against using the GSA process for private parties, especially because commercial entities will be concerned about loss of profits.

Dr. Weintraub wondered whether this is a solution looking for a problem. A glut of rating systems already exists, yet none address the perceived problem that products need to be more durable in geographic and extreme conditions. Perhaps the real problem and accompanying solution lies in the disposal of current products.

Mr. Micklin noted that NACEPT should examine the context and scope of a rating system in the context of the communities and their economies. Mr. Harwood agreed, noting that the unintended consequences of developing durable products ultimately could be detrimental to rural and Native communities.
Dr. Liban added that making products durable under current conditions in Alaska might not be relevant by the time they are produced because of the continuously changing climate. Mr. Harwood did not think that climate change should be a central focus of the effort because that is not the immediate problem included in the scope of the charge; the region has asked for a practical approach for the current problems.
Dr. Liban responded that the Council does not need to directly address climate change but should be aware that the climate is changing and consider how a changing climate will affect planning for a durability rating.

Dr. Wilson commented that industry has the solutions, particularly if the ratings can be used in global communities with environments similar to Alaska, but companies feel the need to minimize their risk. EPA has an opportunity to help industry develop a rating system that addresses the problem. Mr. Marks agreed that collaborating with industry is important, and innovation covers a great deal of ground. Many competitions exist to encourage startup companies and entrepreneur groups to "build a better mousetrap." This could be a significant resource to implement an "Arctic Tough" durability rating system that encourages the creation of Arctic durable products.

Dr. Dearing would like to learn more from program representatives about the standards development process (i.e., standards development organizations) and the platform of the National Association of Manufacturers, as well as about smart sectors.

Dr. Haywood noted that the Council should identify characteristics that a community is interested in (e.g., public health, toxicity, environment). He is hesitant to commit to recommending the development of another standard when so many already exist. Can any of the existing standards be adapted and utilized for this effort?

Mr. Micklin asked the Council to consider the following questions when making recommendations for a durability standard: Does the utility of the product serve a need? Does the product provide the performance that the customer desires? Can it be made locally to decrease transportation costs? Product persistence and bioaccumulative chemicals also are of concern. Tribal governments should help to shape what products enter their communities.

Ms. Clark noted that rural villages have pollution and disposal problems, ultimately triggered by challenges dealing with solid waste. Perhaps NACEPT should work backward and address waste problems. How does a durability rating affect the trash problem?

Ms. Dosemagen asked the group to identify "umbrella" topics around which workgroups could be developed. The NACEPT members identified community and tribal government input, climate and geography, existing solutions and standards, data gaps, defining the problem and scope, stakeholder input, what the rating system is intended to address, and product life cycle.

The Council members identified three options for establishing workgroups/dividing the work:

1. Two workgroups focused on community input (to include root cause and climate) and data gaps (to include existing solutions and product life cycle).

2. Three workgroups focused on scope (including root cause, audience, climate and geography), stakeholder input and engagement, and data and information (including available data, data gaps, product life cycle and existing standards). In this approach, the stakeholder group informs the other two groups.

3. A phased approach, in which the full NACEPT identifies possible outcomes, explores best practices and develops a statement of the issue.

Mr. Green reiterated that NACEPT can develop a series of letters on different topics within the larger issue if the workgroups decide that this approach would be beneficial. The initial focus should be on Alaska with the understanding that the target population can be broadened if necessary.

Ms. Horn reminded the members that the Council does not need to solve implementation issues; it needs only to advise EPA on how to address the questions and challenges.

Follow-Up Discussion of NACEPT Charge (Q&A)
Margaret McCauley, Trash-Free Waters Program, EPA

Dr. Dearing asked about the basis that the team used to identify the problem and how many and what types of communities are affected. Ms. McCauley explained that the Alaska backhaul program—an EPA-led effort in conjunction with the state, tribes and industry—has a good deal of data. The team piggybacked onto this effort to understand the specific issues that could be addressed in rural Alaska communities and how goods could be made more durable. Some data exist, but much of the information collected to inform the charge is anecdotal. The Arctic Council has a specific set of goals and most likely has available data.

Dr. Coronado asked where backhauled materials are shipped to. Ms. McCauley responded that most backhauled waste is shipped via boat to Seattle because the city has the largest and closest recycling center to Alaska. Region 10 also is working with British Columbia (Canada) because the province has a robust producer take-back system in place.

Dr. Haywood asked how attached the region is to the term "durability." If communities are concerned about persistent toxicity, can NACEPT broaden or change the definition and term? Ms. McCauley encouraged NACEPT to do so, especially given the example of the term "duration of service" introduced during Ms. Brown's presentation.

Ms. Horn asked whether community members were asked whether they have suggested solutions other than a durability rating. Ms. McCauley responded that the conversations were not conducted within that type of framework. She noted that recycling is not a viable solution for nonorganic materials. Region 10's IGAP program requires tribal communities to provide a list of their challenges and complaints to receive funding. Although this is not what Ms. Horn specifically asked about, these lists provide information about the communities' concerns. Mr. Harwood added that he also would like to hear community members' suggestions about potential solutions. He reiterated that operational capabilities of electronics and voltage fluctuations are important areas to address. Mr. Micklin requested that NACEPT be provided with the IGAP responses to the annual funding inquiries, separated by geographic region if possible. Ms. McCauley explained that she would need to determine how to provide this information in light of confidentiality requirements.

Dr. Abkowitz asked, in an ideal world, what the future state of the community would look like if the problems were solved. Ms. McCauley replied that the community would face few or no concerns about waste management, and air and water quality would be high.

Dr. Weintraub asked how the health effects of burning waste were being measured in Alaskan communities. Ms. McCauley responded that burning in Alaska, because the population is spread out over a greater area, is theoretically safer than burning in the mainland United States. Region 10 has established a research project about the sources of coarse particulate matter in Fairbanks related to the air inversions that occur in the region. Fairbanks has high asthma rates, and the goal is to determine whether this is related to woodsmoke and/or air inversions.

Dr. Wilson asked whether lists of the best performing products that are acceptable to communities or of the most offending products are available. Such information could assist in standards development. Ms. McCauley responded that Ms. Gay and Mr. Tarbox might be able to provide such lists, but the information would be anecdotal.

Dr. Liban asked whether baseline conditions and climate change effects were included in the assessment. Ms. McCauley explained that the lower coastal communities are attempting to address these issues and have realized that they must move, which introduces emotional, cultural, social and logistical problems.

Dr. Ramirez-Toro asked whether data are available regarding companies that use rating systems to determine what might be possible for a durability rating system. Ms. McCauley replied that she had communicated with Amazon, which has its own internal rating system. As online shopping increases, integration of these rating systems is becoming routine for individuals. Ratings systems can assist in documenting purchasing requirements, and integrations of such systems would help purchasers in Alaska.

Ms. Horn asked about the percentage of affected communities that are tribal. Ms. McCauley responded that the effort was initiated with tribal communities, and many of the affected communities are tribal. Ms. Horn asked what percentage of municipal costs are funded with federal dollars in a typical rural community. Ms. McCauley explained that disparities in funding existed between those communities with oil or gas resources and those without.

Hearing no further questions, Ms. McCauley thanked the NACEPT members for their energy and interest in this topic.

Public Comments
Eugene Green, NACEPT DFO, FACMD, OARM, EPA

Mr. Green called for public comments; none were offered.

Discussion of Action Items and Next Steps
Shannon Dosemagen, NACEPT Chair and President and Executive Director, Public Lab, and NACEPT Members

NACEPT decided to form three workgroups based on the second option described above: Scoping, Stakeholder, and Data and Information. Ms. Boles will lead the Scoping Workgroup, which includes Ms. Clark, Dr. Fritz, Ms. Horn, Dr. Knouft, Dr. Liban, Dr. Ramirez-Toro and Dr. Weintraub. Mr. Harwood will lead the Stakeholder Workgroup, which includes Ms. Boles, Dr. Dearing, Mr. Marks, Mr. Micklin and Dr. Wilson. Dr. Liban will lead the Data and Information Workgroup, which includes Dr. Abkowitz, Dr. Chawla, Dr. Haywood and Dr. Weintraub. Mr. Mason will assist the Stakeholder Workgroup with the industry portion of the work and then move to the Data and Information Workgroup. Ms. Dosemagen and Dr. Coronado will participate on each of the three workgroups.

If the Council members decide that the workgroup structure needs to change after conducting interviews and research, Ms. Dosemagen will fully support this decision and facilitate the establishment of new workgroups.

The three workgroups will meet in mid-August and determine a schedule for their meetings and work. The full NACEPT will meet via teleconference between the end of October and mid-November 2019. Mr. Green added that the next in-person meeting of the Council will be in 2020.

Adjournment

Ms. Dosemagen thanked the NACEPT members for a productive meeting and EPA staff for their efforts in planning it. After asking participants to state in one to five words what they are excited about moving forward, she adjourned the meeting at 1:13 p.m. EDT.

Action Items

- Ms. Dosemagen and Dr. Coronado will participate on each of the three workgroups.
- Ms. Boles will lead the Scoping Workgroup.
- Mr. Harwood will lead the Stakeholder Workgroup.
- Dr. Liban will lead the Data and Information Workgroup.
- Mr. Mason will assist the Stakeholder Workgroup with the industry portion of the work and then move to the Data and Information Workgroup.
- The additional Scoping Workgroup members are Ms. Clark, Dr. Fritz, Ms. Horn, Dr. Knouft, Dr. Liban, Dr. Ramirez-Toro and Dr. Weintraub.
- The additional Stakeholder Workgroup members are Ms. Boles, Dr. Dearing, Mr. Marks, Mr. Micklin and Dr. Wilson.
- The additional Data and Information Workgroup members are Dr. Abkowitz, Dr. Chawla, Dr. Haywood and Dr. Weintraub.
- Mr. Green will contact the NACEPT members who were unable to attend the meeting so that they can select the workgroup(s) on which they would like to serve.
- The three workgroups will convene via teleconference no later than mid-August and discuss their teleconference schedules and timelines for completing their work prior to the Council's next teleconference.
- The full NACEPT will meet via teleconference between the end of October and mid-November 2019.

Appendix A: National Advisory Council for Environmental Policy and Technology (NACEPT) Meeting Participants

NACEPT Members

Dr. Kendra Abkowitz
Assistant Commissioner
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Dr. Ramesh C. Chawla
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Dr. Irasema Coronado
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Dr. James W. Dearing
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Ms. Shannon Dosemagen
NACEPT Chair
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Public Laboratory for Open Technology and Science
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Dr. Jan Marie Fritz
Professor
School of Planning
University of Cincinnati
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Mr. Terry A. Harwood
Executive Director
Coeur d'Alene Basin Environmental Improvement Project Commission
Athol, ID

Dr. Benjamin K. Haywood
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Dr. Jason H. Knouft
Professor
Department of Biology
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St. Louis, MO

Dr. Emmanuel Crisanto Battad Liban
Executive Officer
Environmental Compliance and Sustainability
Los Angeles County Metropolitan Transportation Authority
Los Angeles, CA

Mr. Jeff Marks
Member Advisor
E2Tech—Environmental and Energy Technology Council of Maine
Portland, MA

Mr. Gary T. Mason
Chief Executive Officer
iSi Environmental
Wichita, KS

Mr. William M. Micklin
Chief Executive Officer
Ewiiaapaayp Band of Kumeyaay Indians
Alpine, CA

Dr. Graciela I. Ramirez-Toro
Institutional Director
Center for Environmental Education, Conservation and Research
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Dr. June M. Weintraub
Senior Epidemiologist/Manager
Environmental Section
San Francisco Department of Public Health
San Francisco, CA

Dr. Gregory B. Wilson
Board Director and Chief Scientific Officer
Riverside Conservancy
Edgewater, FL

NACEPT Designated Federal Officer

Mr. Eugene Green
U.S. Environmental Protection Agency
Office of Administration and Resources Management
Federal Advisory Committee Management Division
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EPA Participants

Ms. Courtney Arnelt
U.S. Environmental Protection Agency
Office of Research and Development
Office of the Science Advisor
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Mr. Jay Benforado
Chief Innovation Officer
U.S. Environmental Protection Agency
Office of Research and Development
Washington, D.C.

Ms. Alison Kinn Bennett
U.S. Environmental Protection Agency
Office of Chemical Safety and Pollution Prevention
Office of Pollution Prevention and Toxics
Washington, D.C.

Ms. Angela Chung (via video teleconference)
U.S. Environmental Protection Agency
EPA Region 10
Seattle, WA

Ms. Tami Fordham (via video teleconference)
Deputy Director
U.S. Environmental Protection Agency
EPA Region 10
Alaska Operations Office
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Ms. Santina Gay (via teleconference)
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Ms. Monisha Harris
Director
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Ms. Grace Hewitt
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Mr. Orlando Massari
U.S. Environmental Protection Agency
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Ms. Margaret McCauley (via video teleconference)
U.S. Environmental Protection Agency
Trash Free Waters Program
Seattle, WA

Ms. Stephanie McCoy
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Other Participants

Ms. Amanda Bland
Bergeson & Campbell, P.C.
Washington, D.C.

Ms. Julie M. H. Brown (via teleconference)
Director
Higg Index for Durability
Sustainable Apparel Coalition
San Francisco, CA

Mr. John Burchill
National Account Manager for EPA
U.S. General Services Administration
Washington, D.C.

Ms. Robbin Garber-Slaght
"Certified Alaska Tough" Building Materials Program
Cold Climate Housing Research Center
Fairbanks, AK

Mr. Doug Huntman (via teleconference)
Owner
Delta Backhaul Company
Anchorage, AK

Dr. Susan Klosterhaus (via teleconference)
Vice President
Science and Certification
Cradle to Cradle Product Innovations Institute
Oakland, CA

Mr. Scott Tarbox (via video teleconference)
Hazardous Waste Program Manager
Joint Base Elmendorf-Richardson
Anchorage, AK

Ms. Lynn Zender (via teleconference)
Executive Director
Zender Environmental Health and Research Group
Anchorage, AK

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Appendix B: National Advisory Council for Environmental Policy and Technology (NACEPT) Agenda

U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
William Jefferson Clinton South, Room 2138
Washington, D.C.

July 25–26, 2019

Thursday, July 25, 2019

9:00 – 9:30 a.m.	**Registration**
9:30 – 10:20 a.m.	**Welcome, Introductions, and Overview of Agenda** Eugene Green, Designated Federal Officer, Federal Advisory Committee Management Division (FACMD), Office of Resources and Administration (OARM), EPA Shannon Dosemagen, NACEPT Chair Monisha Harris, Director, FACMD, OARM, EPA
10:20 – 11:00 a.m.	**Update on Efforts to Advance Citizen Science at EPA** Jay Benforado, Chief Innovation Officer, Office of Research and Development, EPA
11:00 – 11:30 a.m.	**Opening Remarks** *Charge to NACEPT*, Angela Chung, Associate Director, Water Division, EPA Region 10 *Overview of Idea*, Margaret McCauley, Trash Free Waters Program, EPA
11:30 – 11:45 p.m.	**Break**
11:45 a.m. – 12:15 p.m.	**Panel: Working in Alaska (Part I): Effects of Extreme Conditions** Moderator: Margaret McCauley, Trash Free Waters Program, EPA *Background on Rural Alaska Conditions and Effects on Products*, Lynn Zender, Executive Director, Zender Environmental Health and Research Group *Rural Backhaul and Solid Waste Management Improvement Program*, Doug Huntman, Owner, Delta Blackhaul Company
12:15 – 12:45 p.m.	**Product and Service Sustainability Standards 101** Elise Owen, Standards Executive, Office of Pollution Prevention and Toxics (OPPT), Office of Chemical Safety and Pollution Prevention (OCSPP), EPA Alison Kinn Bennett, Senior Advisor, Environmental Preferable Purchasing Program, OPPT, OCSPP, EPA

Thursday, July 25, 2019 (continued)

12:45 – 1:45 p.m.	**Lunch**
1:45 – 2:15 p.m.	**Panel: Working in Alaska (Part II): Effects of Extreme Conditions** *Moderator*: Margaret McCauley, Trash Free Waters Program, EPA Scott Tarbox, Hazardous Waste Program Manager, Joint Base Elmendorf-Richardson Santina Gay, Tribal Coordinator and Indian General Assistance Program Project Officer, Alaska Operations Office, EPA Region 10
2:15 – 3:00 p.m.	**Panel: Living in Alaska: Perspectives From Native Village Representatives** *Moderator*: Irasema Coronado, NACEPT Vice Chair Roland White, Indian General Assistance Program Coordinator, Yukon-Kuskokwim Village of Tuntutuliak Desiree Duncan, Director and Raymond E. Paddock III Environmental Coordinator, Native Lands and Resources, Central Council of the Tlingit and Haida Indian Tribes of Alaska
3:00 – 4:00 p.m.	**Panel: Private Sector Standards and Ratings** *Moderator*: Margaret McCauley, Trash Free Waters Program, EPA *Measuring a Product's Duration of Service*, Julie M. H. Brown, Director, Higg Index for Durability, Sustainable Apparel Coalition *Certified Alaska Tough*, Robbin Garber-Slaght, "Certified Alaska Tough" Building Materials Program, Cold Climate Housing Research Center *Cradle to Cradle Certified™ Products Program*, Susan Klosterhaus, Vice President, Science and Certification, Cradle to Cradle Product Innovations Institute
4:00 – 4:15 p.m.	**Break**
4:15 – 4:45 p.m.	**U.S. General Services Administration (GSA) eTools Overview** John Burchill, National Account Manager for EPA, GSA
4:45 – 5:00 p.m.	**Public Comments**
5:00 – 5:30 p.m.	**Discussion of Agenda and Objectives for Friday, July 26, 2019** Shannon Dosemagen, NACEPT Chair
5:30 p.m.	**Recess**

Friday, July 26, 2019

9:00 – 9:30 a.m.	**Registration**
9:30 – 10:45 a.m.	**Discussion of Council's Response to NACEPT Charge on Alaska Tough Product Durability Ratings** Shannon Dosemagen, NACEPT Chair Council Members
10:45 – 11:00 a.m.	**Break**
11:00 – 11:45 a.m.	**Follow-Up Discussion of NACEPT Charge (Q&A)** Margaret McCauley, Trash Free Waters Program, EPA
11:45 a.m. – 12:00 p.m.	**Public Comments**
12:00 – 1:00 p.m.	**Working Lunch**
1:00 – 2:00 p.m.	**Discussion of Action Items and Next Steps** Shannon Dosemagen, NACEPT Chair Council Members
2:00 p.m.	**Adjournment**

Appendix C: Chair Certification of Minutes

I, Shannon Dosemagen, Chair of the National Advisory Council for Environmental Policy and Technology (NACEPT), certify that this is the final version of the complete minutes for the face-to-face meeting held July 25–26, 2019, and that the minutes accurately reflect the discussions and decisions of the meeting.

September 4, 2019

Shannon Dosemagen, NACEPT Chair **Date**

Appendix D: Draft Charge to the National Advisory Council for Environmental Policy and Technology (NACEPT)

This charge was prompted by needs of Alaskans but aims to examine the possibility of product durability ratings with utility for all people in extreme climates.

The impetus:
EPA is charged with helping Alaskan communities protect their air, water, and health. Because of their remote and isolated nature, Alaska's small rural communities use unlined landfills - which are frequently along waterways - and burn waste without emissions treatment. Transporting products to Alaska is very expensive; everything breaks down more quickly in extreme conditions; shipping broken items out of Alaska for repair/disposal is expensive; and, there are very limited budgets for both procuring new products/materials and managing products/materials/waste at the end of their useful life in Alaskan communities.

"Arctic Tough" Durability Rating: One potential way to reduce waste generation:
Both Congress's Save Our Seas Act of 2018[1] and the White House's 2018–2028 *Science and Technology for America's Oceans: A Decadal Vision*[2] highlight the need to seek better ways to keep our waste out of the ocean. Keeping waste from being generated in the first place is the easiest way to keep it out of the ocean and aligns with EPA's Waste Management Hierarchy.[3] A product standard or rating system that helps people determine whether products are well-designed for extreme conditions could help reduce waste and maximize purchase value. The lowest purchase cost (aka "first cost") is often the focus of consumers. Government agencies frequently have a requirement to buy the lowest cost item. However, the purchase cost does not necessarily take into account how long a product will last, how much it costs to maintain, or the cost of disposal or other end-of-life options. An "Artic Tough" rating could help individual consumers, government agencies, and the private sector justify a larger first cost (though more durable products may not always cost more), when appropriate, by revealing the total cost of ownership or full life cycle cost. Such a durability rating would help people better compare between products. Life cycle costs include purchase price, installation cost, operating costs, maintenance and upgrade costs, and end-of-life costs (recycling, transport, disposal).

Federal experience with standards/rating systems:
EPA has developed and manages a number of standards/ratings systems such Energy Star®, Safer Choice, WaterSense, and SmartWay® transport. The EPA Smart Sectors Program[4] provides a potential platform for working with industries such as the Electronics and Technology Sector[5] that have products that are both necessary for and affected by extreme conditions.

There are a number of private sector standards development organizations that may have already published or are suited to initiate the development of new standards to address and communicate the durability of products in extreme climates. The National Technology Transfer and Advancement Act and OMB Circular A-119 "Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities" direct federal agencies to use private sector standards in procurement and in regulation, in lieu of government unique standards, unless otherwise impractical. EPA's Environmentally Preferable Purchasing Program provides Recommendations of Specifications, Standards, and Ecolabels for Federal Purchasing.

[1] www.whitehouse.gov/briefings-statements/remarks-president-trump-signing-s-3508-save-seas-act-2018
[2] www.whitehouse.gov/wp-content/uploads/2018/11/Science-and-Technology-for-Americas-Oceans-A-Decadal-Vision.pdf
[3] www.epa.gov/smm/sustainable-materials-management-non-hazardous-materials-and-waste-management-hierarchy
[4] www.epa.gov/newsreleases/national-association-manufacturers-joins-epa-smart-sectors-program
[5] www.epa.gov/smartsectors/electronics-and-technology-sector-information

NACEPT Charge:
The charge to NACEPT is to assess:

- Whether it makes sense for EPA to be the lead in developing an "Arctic Tough" style product rating system,
- Whether there are existing standards/rating systems that durability could be integrated into or a private sector standards development organization(s) could take this on as a new initiative,
- What criteria would be used to determine priority product categories—
- Toxicity, highly prevalent/high volume, difficult to recycle, difficult/costly to transport items,
- How such ratings might fit into federal government procurement regulations and sustainable acquisition goals, and
- What structure of partners is recommended for development and management of such a rating system, in particular how to include retailers and other institutional purchasers in the design and implementation processes.

As part of this charge, EPA is requesting the following deliverables:

- Within 7 months an advice letter on whether durability ratings are worthwhile as a stand-alone program or as integrated into existing rating system(s).
- If the advice letter is positive, within 12 months of the advice letter, a white paper on what development and management structures are recommended.