

Federal Advisory Committee Act

Clean Air Act Advisory Committee

Virtual Meeting
July 21-22, 2021

Welcome & Opening Remarks

Due to concerns about safety regarding the coronavirus, this Clean Air Act Advisory Committee (CAAAC) meeting was held remotely via Microsoft Teams. Mr. John Shoaff (EPA), opened the meeting and introduced Ms. Lorraine Reddick, the new Designated Federal Official (DFO). Ms. Reddick described the responsibilities of the DFO. She noted that the purpose of this meeting is to provide updates and obtain feedback from CAAAC members on various EPA initiatives as well as solicit input from the full Committee on the CAAAC Workgroup's draft Clean Air Act (CAA) 50th anniversary report. She added that there would be a public comment period at the end of the meeting, then conducted roll call. A list of attendees is provided in Attachment 1. Previous meeting minutes as well as materials associated with this virtual meeting will be available online at EPA's CAAAC website (<https://www.epa.gov/caaac>).

Virtual Meeting Agenda - Day 1

Time	Item	Presenters/Facilitators
1:00 - 1:15pm	Opening Session	John Shoaff, EPA Office of Air and Radiation (OAR), Office of Air Policy and Program Support (OAPPS) Lorraine Reddick, EPA OAR, OAPPS, Designated Federal Officer (DFO)
1:15 - 1:45pm	Improving Access to Air Toxics Data	Hillary Ward, EPA OAR, Office of Air Quality Planning and Standards (OAQPS)
1:45 - 2:25pm	American Rescue Plan (ARP) Monitoring Plan	Chet Wayland, EPA OAR, OAQPS Kristen Benedict, EPA OAR, OAQPS
2:25 - 2:35pm	Break	
2:35 - 3:00pm	HFC Allocation and AIM Act	Cindy Newberg, EPA OAR, Office of Atmospheric Programs (OAP)
3:00 - 3:45pm	OAR Priorities	Joe Goffman, EPA OAR
3:45 - 4:00pm	Wrap Up and Public Comments	John Shoaff

Following the roll call, Mr. Shoaff thanked everyone for their attendance and reviewed the agenda in more detail. He then introduced Ms. Hillary Ward.

Improving Access to Air Toxics Data

Ms. Ward began by stating that she is open to receiving comments and feedback from the CAAAC members. She then explained the new approach that EPA is taking to the National Air Toxics Assessment (NATA). Previously, the NATA was released every 3 years. The new approach is to provide data on an annual schedule. The ultimate goal is for the Air Trends Report (ATR) to have a more coordinated approach across the board as well as be more integrated and predictable. Ms. Ward noted that it will take a few years to build up to the final products, so they anticipate a transition process wherein 2017 data is released by the end of 2021, 2018 data is released in spring 2022, 2019 data is released in January 2023, and 2020 data is released in January 2024.

Ms. Ward noted that they have plans to provide the information on all sources of HAPs at the census tract level as part of an annual, national screening-level risk assessment for air toxics. This risk assessment would be based on emissions and air quality modeling as well as exposure and risk modeling. Ms. Ward added that the NATA would also support the OAQPS Air Toxics Strategy, and they're working with the Office of Environmental Justice (OEJ) on how to handle the use of EJSCREEN. Since there is a gap between what was previously provided and what is shown on EJSCREEN, a team is looking at the best way to account for this; they are primarily considering releasing spreadsheets at the moment. They are also looking at how to include an interactive map app, technical support documents, FAQs, and other documentation as necessary.

Ms. Ward then described the transition plan, which consists of an initial focus on a late 2021 release for 2017 data and a spring 2022 release for 2018 data. This includes census tract-level risk results, limited EPA region and state, local and tribal (SLT) government review of emissions and risks, and the beginnings of internal OAQPS and OAR review prior to OEJ review. She stated that the final products will evolve over time to incorporate additional features and review processes as part of 2023 and 2024 releases and beyond. They are planning on an annualized schedule for releases with the full suite of data and products as well as full EPA region and SLT review of point source emissions and risks starting with the 2024 release. Ms. Ward added that there will be webinars on August 3rd and 5th to talk about the information review process and provide advanced notice about their plans for stakeholder engagement.

Ms. Ward concluded by mentioning that the CAAAC previously provided comments via the Air Toxics Workgroup. In response to some of those comments, the agency now has a risk communication lead, and several staff members have undergone risk communication training. They have also provided tools and training about air toxics communication. The CAAAC suggested addressing the HAP list under CAA Section 112(b)(1), and the EPA is currently in the process of adding 1-bromopropane to the list. They also suggested creating an external group to address gaps in the National Emissions Inventory (NEI), but the EPA decided to create an internal group. Lastly, the new NATA strategy should address the CAAAC's comment on the frequency of the NATA. Ms. Ward then invited questions.

Discussion

Mr. Jason Howanitz suggested that the EPA should make sure that the purpose of NATA is clearly stated. He explained that it is a very limited program meant to be used as a screening tool, but people misunderstand this and mistakenly try to use it while submitting permit comments. He stated the EPA's past efforts to communicate this were inadequate and encouraged them to make it clearer that NATA is designed as a screening tool to help focus monitoring efforts. He also noted that he is curious about how it will be incorporated into EJSCREEN, since EJSCREEN is not part of any regulatory process. He added that the EPA should allow for a better and more robust review of modeling parameters, stating that the current parameter values result in a large overestimation of risk and exposure. Ms. Ward responded that they are working on editing the HAP page on the EPA's website to talk about data and they are also refining the available information, which she hopes will partially address Mr. Howanitz's concerns. She also stated that she would communicate Mr. Howanitz's suggestions to their team, including the creation of more streamlined documents to describe the NATA. She acknowledged that the press releases tend to be very high level.

Mr. Tim Hunt stated that he is happy the NATA program is being improved, especially because risk communication is very important. He noted that the agency has done some fairly sophisticated analyses for the Section 112 program and collected a lot of information from industry to do those analyses. He added that there had been some frustration about this data not necessarily being incorporated into NATA, and it is good that there will now be more coordination within OAQPS. Ms. Ward responded that they will be putting out more information about this process, including how they are addressing concerns about ignoring submitted information. She stated that they have teams that are integrating that process across the board. She noted that additional information about how the EPA plans to address these concerns for the 2017 annual air toxics release will come in the next few weeks, as well as more materials on their website.

Mr. Andrew Hoekzema noted that the air toxics risk assessment is based on lifetime exposure and asked how the EPA anticipates incorporating this into the trends report, since the two measure risk differently. Ms. Ward stated she will circle back to her team for more details, but the plan is to use the same 70-year exposure scenario. She added that the goal of the trends report is to avoid seeing huge shifts in emissions and risk like they did in the 3- to 4-year cycle for releasing NATA.

Mr. Hoekzema then stated that from a planning perspective, emissions are always changing. He suggested that it might be useful for the EPA to consider incorporating future trends into NATA, since it would help people understand where risk increases or decreases come from. He added that one potential application for this is to use the assessment as a baseline and incorporate this information into the National Ambient Air Quality Standards (NAAQS) review process.

Ms. Mary Uhl thanked the EPA team for their hard work and commended them for updating the NATA more frequently. She urged the EPA to consider collaborating with SLT air agencies to improve data quality. She added that since these agencies have a wide range of capacities to submit and improve the quality of data, providing training and tools is very important as well. She also suggested that as SLT air agencies respond or provide input to the inventories, the EPA should consider developing a formal response to comments (RTC) document so the SLTs are aware of which changes have been incorporated. She added that there may be some middle ground between the current informal process and this formal process. Ms. Ward responded that she understands the need for training and tools, as they have recently engaged with a variety of stakeholders, including the National Association of Clean Air Agencies (NACAA), the Air Pollution Control Association (APCA), Northeast States for Coordinated Air Use Management (NESCAUM), and the National Tribal Forum on Air Quality, and they plan to continue those discussions. She explained developing a formal RTC takes a lot of resources but thought there may be some middle ground process to communicate how SLT data was incorporated. She stated that she will take this suggestion back to her team.

Mr. William Spratlin expressed concern about the budget since this is an ambitious program. Ms. Ward noted that the EPA administration is supportive of this effort, and they do have staff internally discussing priorities and resources.

Mr. Shoaff thanked Ms. Ward for her presentation and reiterated that there will be webinars about this process later. He then introduced Mr. Chet Wayland and Ms. Kristen Benedict from OAQPS to talk about the American Rescue Plan (ARP) and associated air quality monitoring efforts.

ARP Monitoring Plan

Mr. Wayland explained that Administrator Regan announced the availability of \$100 million in ARP funds to address health impacts associated with air pollution and COVID-19. This consists of \$50 million targeted specifically for grants, contracts, and other agency activities that identify and address disproportionate environmental or public health harms and risks in minority or low-income populations; and \$50 million for grants and activities for enhanced air quality monitoring under section 103 of the CAA.

Mr. Wayland then described how the \$50 million in funding for enhanced air quality monitoring would be broken down:

- \$20 million grants competition that will seek proposals from community groups and SLT air agencies for monitoring projects. No matching funds will be required.
- \$22.5 million in direct awards to SLT air agencies. No matching funds will be required.
- \$5 million for enhanced capacity for short-term community monitoring (e.g., mobile air monitoring labs, sensor loan programs)
- \$2.5 million to improve air quality data management and ensure the grants and programs are properly administered, overseen, and tracked.

Mr. Wayland noted that all funding is one-time and would not be able to fund long-term, continuing projects. He concluded by displaying a list of questions that they would be asking during listening sessions with community groups, state and local agencies, and several other groups. These were:

1. In the communities you serve, what are the most important needs for ambient air monitoring data?
2. What do you think are critical criteria (e.g., partnerships, monitoring support, understanding of risk, problem resolution) to include when issuing the grant solicitation for ambient air monitoring?
3. Please comment on the use of ARP funds for regulatory vs. non-regulatory ambient air monitoring.
4. Considering areas with EJ concerns, what are the most useful approaches to empower these communities with ambient air monitoring data to help address disproportionate exposures?
5. For Tribes: should Tribes in nonattainment areas be given priority for grant funds? Are there other priority considerations that Tribes would like to see?

Mr. Wayland then invited questions from the CAAAC.

Discussion

Ms. Gillian Mittelstaedt pointed to the \$5 million allocation for short-term studies and observed that she has noticed a pattern where an academic institution or pollution control agency will apply for a grant, then bring in the local community to advise them on the project, which fails to grow the capacity of the communities themselves. She suggested that the EPA make participation of the community or Tribe in the grant process and their level of involvement an award criterion, which would provide for capacity-building.

Mr. Max Sherman noted that when talking about ambient air and monitoring data, there hasn't been much discussion of PM_{1} , which may be more important than $PM_{2.5}$. Furthermore, there is no regulatory monitoring requirement for PM_{1} . So, when improving data monitoring, he suggested adding capacity for measuring PM_{1} at the same time as $PM_{2.5}$.

Mr. Howanitz asked if the vision for these grants includes having contractor help, since it is a lot of work to set up just one monitor, and communities may not be able to do it. Mr. Wayland responded that every community is different, and some are more capable of sophisticated projects than others. The EPA weighs the ability of the applicant to carry its project through, and they can partner with contractors as necessary to ensure success. Mr. Howanitz noted that he would not want to see someone denied because they do not have that capacity, and he suggested that the agency could ask if they are willing to work with partners.

Mr. Howanitz asked whether the EPA is considering a certain placement or resolution of monitors, noting that everyone wants one in their neighborhood, but there are not enough resources for that. Mr. Wayland responded that this is one-time funding, so applicants will have to have something in the proposal that addresses their long-term plan. He acknowledged that some projects might be short-term studies, such as collecting data for a while and then analyzing it, while others might be long-term or permanent and need a plan to maintain them after funding ends. He emphasized that since this funding is one-time, applicants need to have a plan for how they will either reallocate other resources to maintain projects in the long-term, or how they plan to conduct a short-term project that will still be useful.

Mr. Howanitz pointed out that although the EPA is trying to encourage the transition to continuous monitoring, some places are having issues with that technology, so there may be some hesitancy to switch. For example, his agency co-locates their continuous monitors with manual samplers because there are a lot of performance issues with continuous monitors in the southeast during the winter. He requested that the EPA work with manufacturers to make a better product that addresses this problem. Mr. Wayland stated that the EPA is aware of this problem and has been discussing this issue internally and with manufacturers. The EPA understands and appreciates the issue with continuous vs filter monitors, and although continuous monitors are going to be cheaper down the line, they do need to resolve issues with the technology as well.

Mr. Hoekzema mentioned that the EPA already has access at the regional level to every state's five-year monitoring assessment and monitoring network plans. He suggested that EPA headquarters and regional staff get together to determine whether they agree on where monitors are needed or have already been requested. For areas that have requested monitor installations, there is a possibility that those communities are already engaged but may be discouraged by the lack of resources available to address their specific requests. He also noted that in the PM NAAQS review, the issue with evaluations for ultrafine PM was a lack of ultrafine monitoring, and it would be good to expand the capability in this area and use that data for the next NAAQS review. He also stated that speciated PM monitoring would help identify the sources contributing to elevated PM_{2.5} levels. He asked if it is possible for EPA to operate its own monitors, as there may be monitors that aren't being used after the grant funding ends, and those could be used to expand the pool of available monitors at the regional level. Mr. Wayland responded that they are working with the regional offices to examine local needs and that input from regions about ongoing problems is something they will consider during the grant proposal review process. He also agreed that if monitors were used and then returned, it could be possible for agencies to "loan" them out again. Ms. Benedict added that they're aware of the requests in the five-year plans and that those will be considered in conversations about direct awards. She also pointed to a recent Government Accountability Office (GAO) report that had two relevant recommendations: an asset management framework and a modernization plan. She stated that they are thinking about investments with this ARP money, and the idea of repurposing instruments that are still useful has come up twice now, so they will consider it.

Mr. Steve Flint cautioned the presenters that there needs to be a focus on messaging and communicating risk results. He noted that the results from local monitors will not line up with the NAAQS, so there needs to be an up-front message that explains the differences. He added that the NAAQS pick up both spatial and temporal considerations, which are lost in more short-term projects where it is not possible to take averages. Mr. Wayland agreed that they need to watch out for pitfalls like this and added that they will try to recognize and inform about these before the request for proposal (RFP) process so people will be aware of these issues before writing their proposals.

Mr. Robert Hodanbosi noted that the direct awards reference criteria air pollutants (CAPs) and asked whether lead is included. Mr. Wayland confirmed that it is. Mr. Hodanbosi then asked how long grant recipients would have to spend the money. Mr. Wayland explained that they have been told it is “no year” money, but he assumes that there would be an award timeframe in which the recipient would have a specified deadline by which to spend the money. Ms. Benedict stated that they would take this question to the grants office and get an answer. Mr. Hodanbosi added that QA activities are important for monitoring to ensure there is confidence in the results, and this should be a factor considered in the award process.

Ms. Mittelstaedt explained that most exposure occurs indoors because that is where people spend most of their time. Consequently, she encouraged the EPA to support monitoring pilot programs and technology using sensors to assess intrusion rates. Mr. Wayland responded that the funds they have are limited to ambient air, but they do know they need to work on understanding intrusion better. He also mentioned that if attendees have questions later, they can send them to the DFO or to him or Ms. Benedict directly. He emphasized that they want as much feedback as they can get.

Mr. Ted Steichen pointed out that there will likely be applicants who come from disproportionately impacted communities and who may have never applied for or won grants before. He asked if the agency is providing any training, assistance, or outreach to make sure that new groups or other communities will be able to participate. Mr. Wayland responded that they are considering this to avoid having some communities inexperienced in these processes being at a disadvantage. He stated that they will work with the grants group to determine what information they can provide, since it is a competitive process. Mr. Steichen also requested that the EPA produce some kind of report at the end that shows who received the grants, so that it is clear if most of the money goes to experienced groups or if there is breakthrough to new participants. Mr. Wayland stated that they will track this money very carefully, and they will have comprehensive information about the funding distribution that they can share.

Mr. Shoaff thanked the presenters and indicated that the meeting would resume after a short break. Mr. Shoaff reconvened the meeting and introduced Ms. Cindy Newberg from the Office of Atmospheric Programs.

HFC Allocation and AIM Act

Ms. Newberg thanked Mr. Shoaff and explained that she would be discussing an overview of the American Innovation and Manufacturing (AIM) Act, the proposed allocation rule, sector petitions, and management of hydrofluorocarbons (HFCs). She first explained that HFCs are manufactured alternatives to ozone depleting substances and are used for many of the same purposes. She displayed graphs showing HFC emissions and surface temperature change due to HFCs from 2000 to 2100, with a “business as usual” scenario showing a sharp rise in both, and the Kigali Amendment under the Montreal Protocol resulting in a decline that equates to about half of a degree of warming prevented.

Ms. Newberg then explained that the AIM Act establishes three main types of regulatory programs. First, the phasedown of HFC production and consumption, including imports. Second, the facilitation of sector-based transitions to next-generation technologies. And third, the management of HFCs and their substitutes. She noted that certain provisions are similar to provisions in CAA Title VI, although there are a few main differences, namely: this is a phasedown, not a phaseout; there are application-specific allowances; it includes a limited state pre-emption clause; and it provides targeted small business technology grants.

She stated that the proposed rule was published in the Federal Register on May 19, 2021. Ms. Newberg explained that according to the regulatory impact analysis (RIA), the net present cumulative benefits through 2050 that would be realized by the proposed rule are equal to \$283.9 billion. Ms. Newberg noted that the EPA also conducted an EJ analysis, which determined that the overall reductions in greenhouse gas (GHG) emissions from this rule would benefit populations that would be especially vulnerable to damages associated with climate change (e.g., the very young, elderly, low-income, disabled, and indigenous populations).

Ms. Newberg stated that under the AIM act, the EPA can also further restrict HFC use to encourage the transition to next-generation technologies. There is an extensive list of factors to consider when doing so, and petitions must be acted upon within 180 days. If a petition is granted, the EPA must complete a rulemaking within 2 years. The first petitions to restrict the use of HFCs were received on April 13, 2021, and they have received 12 petitions as of July 19th. They also published a notice of data availability alerting the public to these petitions and inviting information on May 25th.

Ms. Newberg then explained that in terms of HFC management, the AIM Act directs the EPA to establish a program for maximizing reclamation and minimizing releases of HFCs and their substitutes from equipment, as well as ensuring the safety of technicians and consumers. They must establish regulations to control, where appropriate, practices, processes, or activities regarding the servicing, repair, disposal, or installation of equipment as well as consider using their authority to increase opportunities for reclaiming HFC refrigerants. The EPA may coordinate with any other similar regulations, such as the CAA 608 regulations. Additionally, subject to appropriations, the EPA shall establish a grant program for small businesses for the

purchase of recycling, recovery, or reclamation equipment for HFC substitutes, including for servicing vehicle air conditioners.

Ms. Newberg then invited questions from the CAAAC.

Discussion

Mr. Tim Wallington pointed to the claim that these regulations will avert 0.5 degrees of warming, calling it aggressive compared to other projections. He offered to follow up with an email of other sources, since he didn't think it's fair to quote the highest estimate. Ms. Newberg explained that the analysis she cited was performed by the National Oceanic and Atmosphere Administration (NOAA), and she offered to provide it to Mr. Wallington. She also clarified that they have been using language that says, "up to half a degree," and according to her research, the estimate ranges from 0.4 degrees to a little over a 0.5 in more recent studies. She stated that she would be happy to look at other studies if provided.

Mr. Bob Meyers asked for more information about the allowances notice, including whether it would go out in the Federal Register and if the recipients of the allowances would be made public. He also noted that in terms of the AIM Act as a phasedown, it's also true that the Act included accelerating authority and technical transition authority. He observed that those powers do not seem limited and asked if it is fair to assume that those authorities could be used for a complete phaseout. Ms. Newberg responded that it is the EPA's intent to put out a Federal Register notice and include the list of companies and other relevant information. She explained that the reason for decoupling the two notices is that they are required to publish the allocations by October 1, 2021, and doing this separately will give them a better opportunity to validate the information with potential allowance holders and do due diligence. The EPA has not yet made a final decision on doing a notice each year or just once; however, they don't want to promulgate a rulemaking each year for exception programs. They want to have the maximum opportunity to validate information and still make it public. To the second question, she agreed that there is authority to accelerate, although they cannot go too fast since they cannot go faster than what is being used the previous year. She stated that the technology transition piece could allow them to eliminate HFCs in a specific product or use, but not on an economy-wide scale. She added that they have gotten petitions already and are evaluating them quickly, since October is very soon.

Mr. Hoekzema mentioned that GHG markets deal with offsets and noted that an offset based on a reduction in these pollutants may no longer be applicable anymore if it is not surplus to what this rule will achieve. He asked if there are opportunities in the way this rule is structured for voluntary retirements of allocations that could fit into a GHG reduction credit market. He also asked if the agency is doing any outreach to organizations that certify GHG reduction credits. Ms. Newberg replied that the question about additionality is a discussion they want to have with organizations who run the GHG credit markets. She added that the Kigali Amendments to the Montreal Protocol are subject to that test of additionality.

Mr. Shoaff thanked Ms. Newberg and introduced Mr. Joe Goffman, the Principal Deputy Administrator at the EPA OAR.

OAR Priorities

Mr. Goffman began by introducing the Deputy Assistant Administrator for Stationary Sources, Mr. Tomás Carbonell. He praised the CAAAC members for being motivated to participate in the committee and lending their expertise, partnership, and dedication to help the EPA better carry out its mission to protect public health and the environment. He thanked the members extensively for their service and specifically acknowledged the CAA 50th Anniversary Report Workgroup and its co-chairs, Ms. Mittelstaedt, Mr. Meyers, and Ms. Gail Good. He also recognized the members who were transitioning off the committee: Mr. Steven Marcus, Mr. Vernon Morris, Ms. Mittelstaedt, Mr. Hoekzema, Ms. Uhl, and Ms. Nancy Kruger.

Mr. Goffman then discussed the Biden Administration's priorities. He described them as "unusually committed" to environmental protection, EJ, and addressing climate change. He stated that it is "remarkable" that President Biden made these principles a core part of his campaign, and he won. He mentioned that hours after being inaugurated, the President signed an executive order identifying a series of actions related to these issues as top priorities for his administration. He called on OAR and the EPA to use their existing authorities to address pollution, including GHGs, in the mobile sources, power, and oil and gas sectors, and he established a series of deadlines to do so. And rather than singling out EPA, he also took other actions that made it clear he was prioritizing these objectives on a whole-government basis. Mr. Goffman stated that as a result, as the EPA moves forward on these priorities, it does so as part of a network of administrative and executive branch partners who are using their tools in tandem with the EPA. He added that President Biden has also put a lot of political capital behind legislation and spending initiatives that will amplify the tools available to advance these three priorities.

Mr. Goffman elaborated that in addition to President Biden's leadership, the EPA Administrator, Michael Regan, is also fully in support of these priorities. For example, he has identified air quality as a priority, and he recently directed OAR and ORD to review the decision by his predecessor to keep the PM NAAQS unchanged. Mr. Goffman explained that they expect to propose a rulemaking in the summer of 2022 that reflects this reconsideration and includes an updated record addressing the health effects of PM. This is also a part of his broader goal of fortifying the integrity of Agency science and rebuilding its credibility.

Mr. Goffman explained that in addition, the Administrator has directed the EPA to consider new regulations in the oil and gas sector, as well as follow through on the executive order. They will issue a proposal in September to address methane emissions in the oil and gas sector, both with respect to new sources, and for the first time, with respect to emissions from existing sources. In that area, costs have gone down and technologies have improved when it comes to addressing sources of emissions, leaks, and fugitive emissions.

Mr. Goffman noted that in addition to consulting scientific experts, the EPA is also undertaking extensive outreach. In May, they opened a non-regulatory public information docket. They also conducted a series of meetings and engagements with fellow regulators, state governments, small businesses, Tribes, and communities, including front line communities affected by pollution from this sector. To bolster those participants' ability to contribute and engage, they held several days of training in May and June to help community members more effectively advocate their positions.

Mr. Goffman added that the Administrator has publicly stated several times that he plans to release a comprehensive strategy for addressing the full range of pollution and natural resource effects of the power sector. The EPA is rapidly moving forward on taking the first action in this area; at the end of August, they are planning to follow the schedule in President Biden's executive order and issue a proposal addressing the appropriate and necessary findings supporting the mercury air toxics standards and take another look at whether they have enough information about costs and technology performance that would merit potentially tightening the technology standards currently in place.

Mr. Goffman noted that President Biden took office the day after the DC Circuit confirmed that the EPA is obligated to set GHG emissions standards for the power sector, and he explained that they are working on a blueprint for how to tackle that. They and the states are also in the course of meeting their obligation to address long-range transport that affects the ability of downwind areas to meet the 2015 ozone standard. They are also examining whether, through state implementation plans (SIPs) or follow-up action by the EPA, NO_x emissions from the power sector could contribute to reducing downwind transport.

Mr. Goffman also mentioned their actions to address GHG emission standards from light-duty vehicles. The President gave them explicit instructions to reexamine the Safer, Affordable, Fuel Efficient (SAFE) Vehicles Rule Part 2 and determine whether it is appropriate to come up with more stringent CO₂ standards. He noted that attendees should stay tuned for an imminent action on this. They were also asked to look at the SAFE rule Part 1 and consider reinstating California's authority to enforce its own emissions standards for CO₂ pollution. They opened that process in April by putting out a notice with a series of questions for the public to comment on as they consider the eventual final decision on this issue. The administrator, who Mr. Goffman noted is an alumnus of state government as well as the federal EPA, has reaffirmed his commitment to the state-federal partnership and suggested that in general, he supports California's authority to regulate pollution from the auto fleet.

Mr. Goffman explained that they have heard a lot from states and air quality management districts about emissions from heavy-duty vehicles, since reductions from those are critical to attaining the air quality standards in a number of jurisdictions. They have also heard from the EJ community that among the many actions that they could take and are taking in the transportation sector, they should prioritize emissions from heavy-duty trucks and buses. The administrator has tasked OAR with developing an initiative or strategy to address emissions from this part of the transportation sector. They are on track with this and will be making recommendations shortly.

Mr. Goffman then discussed how President Biden and Administrator Regan are advancing the cause of EJ. The EPA is undertaking a number of initiatives, nearly all of which include the staff at OAR. As an example, Mr. Goffman pointed to a letter that the administrator sent in May to Chicago Mayor Lori Lightfoot. In the letter, he encouraged the city to defer issuing a permit for a scrap metal processing facility in a part of southeast Chicago that is already burdened with multiple forms of pollution, until a full EJ analysis had been done, and he offered the EPA's assistance in doing so. Mr. Goffman stated that this level of attention to local issues demonstrates the administrator's prioritization of EJ at all levels. He then invited the participants to ask questions.

Discussion

Mr. Steichen thanked Mr. Goffman for the updates and asked whether the EPA is going to go with the current Integrated Science Assessment (ISA) for the PM reconsideration, since it will be hard to get things ready by the summer of 2022. Mr. Goffman responded that the current ISA is still robust and provides a good foundation, so the EPA staff decided that they could update it and then give the Clean Air Scientific Advisory Committee (CASAC) a manageable charge. He stated that they are confident that between the update and this charge, they can do justice to a proposal within a year.

Ms. Kruger commended the administration for putting together a great team at the EPA and especially OAR, and she complimented their hard work and the president's commitment to climate change and EJ. She then brought up the on-road heavy-duty NOx rule, which she described as critically important, and emphasized that action needs to be taken to achieve reductions and get this rule out as soon as possible. She noted that Mr. Goffman talked about hearing from people about this rule and stated that they have a plan to talk about recommendations, and she asked for clarification because she was expecting a proposal soon, not recommendations. Mr. Goffman replied that the Administrator is going to provide clarification very soon. He agreed that this rule is a priority and stated that the best way to signal one's priorities is to pursue and actualize them. He stated that it will ultimately be up to the Administrator to take the next step on this.

Mr. Frank Prager stated that he is very interested in the topic of GHG regulations in the utility industry. He asked how the EPA is thinking about sequencing, how it views the role of natural gas-fired generation for reliability purposes, and whether the EPA is going to allow space for utilities to use natural gas as they make other reductions. Mr. Goffman responded that they won't know the answer to these questions until they have finished the entire process. He stated that Mr. Prager did a good job of laying out the problem, and they know they have to account for these questions and considerations. They are working on developing a blueprint that contemplates the form of the process that they used in 2014 and 2015. They are also working on gathering information from within the Agency and engaging with various stakeholders, including the electricity generation sector. The Administrator has stated that the EPA needs to review the information they have gathered as an Agency after two different rulemakings and pull in

everything else they can learn through public engagement to formulate a strategy, and ultimately, a regulatory program. He predicted that by next year, the Agency will be in a position to propose a rule.

Mr. Hoekzema noted that there was an announcement about PM but not ozone, so he assumes that the ozone NAAQS will not be reviewed. He stated that in his opinion, the standards have to be considered final at some point, so reconsidering solely for process reasons could result in an endless back and forth instead of a resolution. He also pointed out that it takes a long time to reduce emissions if you rely on the NAAQS, and he encouraged the EPA to consider other authorities and situations and also see what they can do on a short-term basis to get emissions reductions. He pointed to interstate transport as one such area. Mr. Goffman had three responses to Mr. Hoekzema. First, he explained that the reason why the EPA made a PM announcement was that they put together a game plan more quickly, and the Administrator was ready to move ahead. He cautioned against reading too much into the order of announcements as a reflection of the EPA's priorities. Second, in the long term, he admitted that the EPA is not ready to conclude that the power sector would be the primary or only place for addressing ozone from transport. And third, he asked Mr. Hoekzema to elaborate on using existing authorities and not being strictly linear in terms of accomplishing additional PM reductions. Mr. Hoekzema explained that on interstate transport, the focus has been on Electric Generating Units (EGUs), and the agency could expand the applicable sources from EGUs to all anthropogenic sources.

Mr. Howanitz noted that there is no regulatory track for EJ, so while it is an issue that gets talked about a lot, state and local agencies have no way to implement anything other than ensuring a participation process in rulemakings, permits and other actions. For example, if he uses EJSCREEN while evaluating a permit, there is no rule for how to take it into account, and if they apply EJ without legal backing, the courts will throw it out. He added that talking about EJ without having concrete ways to follow through on those ideas is creating a lot of frustration in communities, and it's tricky because those things are outside of their agency's control. He cautioned against highlighting EJ without also giving agencies ways to deliver on those promises. Mr. Goffman stated that Mr. Howanitz's comment is actually encouraging, since they indicate that people are trying to take these priorities seriously. He acknowledged that most likely, past EPA administrators would agree about the importance of EJ, but the way they led the Agency resulted in a focus on certain kinds of tools in the toolbox that seemed the most manageable at the time. He noted that Administrator Regan and President Biden have pushed to make more options available and look for more areas where they can address these issues and give local agencies more tools to address environmental injustices.

Mr. Meyers remarked that there have been reports about a delay in the renewable fuel standards (RFS) and asked if Mr. Goffman could share any more information about that. Mr. Goffman replied that the standards would be out soon, but that was all he could say.

Ms. Mittelstaedt commented that the EPA needed to institutionalize EJ so that it's not a political trend and can be consistently administered from administration to administration. She also stated that the EPA should strongly support nonregulatory programs such as the Diesel Emissions

Reduction Act (DERA) program. She added that she is working on a National Academies of Science workgroup, and in reviewing the literature, they are seeing a “calamity” of climate change-related events affecting EJ communities, and she cautioned that these issues will accelerate as climate change accelerates. Mr. Goffman thanked Ms. Mittelstaedt and expressed his hope that she will continue to offer solutions and information after her CAAAC term ends in the fall. Ms. Mittelstaedt agreed that she hopes to continue working with the Agency.

Ms. Shannon Broome asked for more information on the new methane rules. She also emphasized that new rules need to allow for new technology to enter the market and provide emission reductions in cost effective ways. For example, she pointed to satellite monitoring that can take measurements remotely rather needing people to physically visit individual, stationary pieces of equipment. Mr. Goffman responded that one thing they hope to accomplish with the proposal in September is to ensure that the rule does what it’s designed to do; that is, not only provide information, but also elicit innovative thinking in the way that Ms. Broome described. He agreed that with improving technologies and new innovations, costs have gone down since 2016, and they would not be doing their jobs properly if they didn’t revisit the 2016 standards while taking those changes into account. He also agreed that there may be opportunities to make a home for innovation within traditional rulemaking. Ms. Broome noted that the innovative control technology waiver is now extremely out of date and no longer doing the job, so asking for public comment on the alternative means of emissions limitation (AMEL) in particular would be worthwhile.

Mr. Clay Pope brought up the grid failures that Texas experienced in the winter of 2020 as a result of lack of weatherization of natural gas facilities. He asked whether enforcement discretion will continue for older EGUs. He also asked when a regional administrator will be appointed for that region. Mr. Goffman thanked Mr. Pope for his suggestion and stated that there will continue to be discussions on electricity generation sector issues. He also stated that he did not know when a regional administrator would be appointed.

Mr. Max Sherman stated that he was glad to hear about the emphasis on PM, since it’s the most harmful pollutant to the health of the population of all the CAPs, and there is a clear need to work more on that. He agreed with Ms. Mittelstaedt that PM is one of the contaminants that also has a lot of indoor exposure, and the EPA may need to consider non-regulatory actions for indoor air issues.

Mr. Shoaff thanked Mr. Goffman and Mr. Carbonell for joining the meeting. Mr. Goffman thanked the CAAAC members again for their time and contributions both on the committee and in their day jobs. Mr. Shoaff then indicated that there would be time for public comment. After no public comments were made, he thanked the CAAAC members again for their time and involvement, particularly the departing members. He briefly explained the agenda for the second day of the meeting.

Ms. Reddick reminded everyone that the second day of the meeting would begin at 1pm ET and that the meeting link would be different. She then adjourned the meeting.

Opening Remarks

Mr. Reddick opened the second day of the meeting by introducing herself and thanking the attendees for joining.

Virtual Meeting Agenda - Day 2

Time	Item	Presenters/Facilitators
1:00 - 1:05pm	Opening Remarks	Lorraine Reddick John Shoaff
1:05 - 1:30pm	MSTRS Subcommittee Update: Future Mobility Report	Karl Simon, Director Transportation and Climate Division EPA Office of Transportation and Air Quality (OTAQ)
1:30 - 4:00pm	Clean Air Act (CAA) 50 th Anniversary Report Workgroup (WG) & Full Committee Working Meeting	Gail Good, CAAAC Bob Meyers, CAAAC Gillian Mittelstaedt, CAAAC
4:00pm	Closing Remarks	Lorraine Reddick

Mr. Shoaff explained that they have introduced some changes to the criteria for the Clean Air Excellence Awards to better reflect EJ principles, and the deadline for comments is soon. He also mentioned that CAAAC membership changes will take effect on August 9th and thanked the members that are rotating off the committee. He added that appointment letters will go out soon, and they will have a discussion later about how to finalize the 50th anniversary report. He then introduced Mr. Karl Simon to give an update on the Mobile Sources Technical Review Subcommittee (MSTRS) future mobility report.

MSTRS Subcommittee Update: Future Mobility Report

Mr. Simon introduced himself as presenting on behalf of OTAQ and MSTRS, since Mr. Rich Kassel, the MSTRS chair, was unable to attend the meeting. He explained that over the last year, the MSTRS has been considering what the future of transportation will look like and what that will mean for the EPA. They brought in a series of subject matter experts to present to the subcommittee members, then decided that given the emerging technologies and trends impacting the transportation sector, the EPA would benefit from detailed feedback from the MSTRS about its role with respect to future mobility paradigms. They divided the subcommittee into four subgroups: vehicle technologies, personal mobility, fuels, and goods movement. Those subgroups worked for over a year to develop a report with feedback on their respective subject areas. The EPA requested that the report provide insights into implications for the near, mid, and long term as well as discuss what would structurally need to change about the EPA's work to support its mission of emission reductions while maintaining mobility and accessibility.

Mr. Simon then explained ten highlights from the draft report, which is still being assembled, that emerged across all four subgroups when they presented their chapters during the last MSTRS meeting:

1. To meet its GHG, criteria pollution, and other future mobility goals, the EPA will need to decarbonize liquid fuels and the engines that will continue to be used in many applications and find ways to move people and goods in as sustainable and equitable a way as possible.
2. Good data and analysis will be critical to meeting future mobility goals.
3. The EPA will need to integrate principles of social equity, EJ, and mobility justice in ways that have never been done before.
4. There will need to be increased collaboration across agencies and levels of government.
5. The EPA will need to consider solutions that are outside the traditional regulatory authority of OTAQ.
6. Fuel-neutral, technology-agnostic performance standards will continue to be critical for both fuels and vehicles.
7. Incentives, public education, and outreach programs will continue to be critical to accelerate deployment.
8. The EPA will need to consider new approaches to solve new problems *and* old problems (e.g., legacy vehicles), some of which are beyond the EPA's traditional role.
9. Additional strategies will be needed for hard-to-electrify components of the legacy and future fleets.
10. There is no "silver bullet."

Mr. Simon then offered to answer questions from the CAAAC.

Discussion

Mr. Marcus asked if the EPA is looking at bi-directional charging vehicles and pointed out that this could affect the grid. Mr. Simon responded that this is on their radar, they know there's interest in it, and the EPA is going to do something soon on this issue for school buses.

Mr. Pope thanked Mr. Simon for allowing him to participate in the vehicle technology subgroup and expressed his admiration for the level of detail achieved in the report. He added that bi-directional charging is part of the report.

Mr. Bob Wyman stated that strong technology standards are important for driving and rewarding innovation and change, and he is looking forward to what the EPA is issues regarding on light-duty vehicles and trucks. He described this as a foundational part of what the EPA does. He also expressed his approval of prioritizing data collection, management, and sharing, and he encouraged the EPA to share success stories more also. Mr. Simon expressed his agreement and pointed to the Ports Initiative as proof that one of the pillars of success is putting out as much information on best practices as possible.

Mr. Flint commented that this is a good example of an instance where the command-and-control model won't work, and it is good to see how local groups and agencies address issues. He also commented that it would be good for the EPA to think about technologies and fuels together, noting that the legacy fleet in particular will still have a lot of liquid fuels. Mr. Simon thanked Mr. Flint for his feedback.

Mr. Shoaff thanked Mr. Simon for his time and introduced the co-chairs of the 50th anniversary report workgroup to begin discussing the report draft. He thanked the co-chairs as well as the other workgroup members and the supporting contractors for their time and effort.

50th Anniversary Report Working Meeting

Introduction

Ms. Good opened the presentation by explaining that the plan is to talk briefly about the report and how CAAAC members can provide feedback on it, since the time during the meeting is very limited. She stated that the workgroup has been collaborating on this report for about a year, and they appreciated everyone's engagement and feedback during the last CAAAC meeting. She noted that members have been provided with a draft report, and the workgroup is seeking their further review. The report is very lengthy and complex, like the CAA itself, and it won't be possible to explore all points during the meeting, so she asked members to keep their comments brief, concise, and focused on clarification. She also requested that members provide their full comments and review in writing within two weeks of the meeting, and the workgroup will review and address them as they compile the final report.

Ms. Good then briefly described the introduction of the report, which recognizes the overarching successes and complexities of the CAA, talks about the methodology of the report, and highlights some areas related to administrative processes and engagement that they consider both a success and an opportunity. In the conclusion of the report, they highlight the range of knowledge and expertise represented on the CAAAC and recommend that it can be utilized more effectively to benefit everyone. She then invited the other co-chairs to add any comments before moving into discussion of the report content.

Mr. Meyers noted that they want to recognize that 50 years of history is a lot of territory to cover, and they don't want to overlook the accomplishments. He stated that it's good to remind everyone of the CAA's successes, not for self-congratulatory reasons, but because there are valuable lessons to be learned about what works and what doesn't.

Before beginning his presentation, Mr. Hoekzema also clarified that they did not organize the slides in the order of the report, but instead grouped them together according to their primary author. He added that each primary author will present and then take clarifying questions on their sections. He also pointed out that if the presentations go over their allotted time, CAAAC members are not obligated to stay, but he strongly encourages them to do so, since the EJ section will be at the end and that is a priority for the EPA. He also thanked the EPA for allowing him to

participate in the CAAAC over the past six years as well as the other workgroup members for their work.

Attainment and Maintenance of the NAAQS

Mr. Hoekzema then presented an overview of the report chapter about the NAAQS. He listed the following successes of the program:

- Significant criteria pollutant reductions (emissions, design values)
- Significant reductions in poor air quality days based on the Air Quality Index (AQI)
- Attainment of NAAQS
 - Almost all areas of country attaining CO and NO₂ NAAQS
 - Progress in attaining ozone (O₃), Pb, PM_{2.5}, PM₁₀, and SO₂ NAAQS
 - Fewer nonattainment areas
- Frameworks for addressing interstate and international pollution
- Pollution controls in nonattainment and maintenance areas
- Proactive programs to remain in attainment of NAAQS
- Improved understanding of air pollution.

Mr. Hoekzema then listed several opportunities for further work in these areas:

- Mobile source emission reductions and controls
- Stationary source emission reductions and controls
- Completion of O₃ and PM NAAQS Reviews together in 2020
- Lesser-used provisions in the Clean Air Act
 - Sec. 110 “Infrastructure SIPs”
 - Sec. 110 “SIP calls”
 - General nonattainment planning provisions in Sec. 172
 - Sec. 179B petitions on international transport
- Improvements in air quality forecasting and public awareness about air quality
- Sensor Technology.

Mr. Hoekzema next described several future challenges facing the EPA related to the NAAQS:

- Many people live in areas violating the NAAQS
- Disproportionate exposure to criteria pollution in EJ communities
- Costs of implementing additional controls
- Ambiguity about “out-of-cycle” nonattainment designations
- Issues in reviewing and establishing NAAQS
 - Lack of clear thresholds
 - Secondary NAAQS distinct from primary NAAQS
 - 5-year statutory timeframe
 - Statistical form and averaging time of NAAQS
- Accounting for international transport and exceptional events
- Overlapping NAAQS/Anti-Backsliding

- Challenges with SIPs, especially for O₃
- Public communication about attainment/violation of NAAQS v. AQI.

Finally, Mr. Hoekzema explained the workgroup's recommendations for actions the EPA can take for the NAAQS program:

- Improve the NAAQS Review Process
 - Reduce uncertainty on timing and finality of NAAQS reviews
 - Synchronize NAAQS reviews with common precursors
 - Ensure accounting of protection needed for EJ communities in NAAQS reviews
 - Evaluate forms and averaging times for O₃ and PM NAAQS to account for weather trends
 - Account for International Transport in Reviewing the NAAQS
- Make better use of full range of authority in area designation process
- Consider requiring more interstate air pollution abatement
- Improve implementation of exceptional events rule and interstate transport provisions
- Modify approach to SIP requirements and classifications for nonattainment areas
- Ensure timeliness of actions related to SIPs
- Consider issuing "early action" SIP calls to address problems maintaining the NAAQS
- Consider updating transportation conformity policies and practices.

Developing and Utilizing High Quality Data

Ms. Good then presented a summary of the report chapter about how to collect, analyze, and utilize data effectively. She began by noting that a theme of the successes was a general advancement of technology and availability of data. The specific successes included:

- National Emissions Inventory
- Cost of control documentation
- Ambient monitoring networks
- Stationary source emissions data
- Low-cost sensor monitoring
- Remote sensing technology
- Scientific research
- Data collection and accessibility.

Ms. Good also discussed opportunities for the EPA to take actions in the following areas:

- Integrating sensor technology, remote sensing technology, and ambient monitoring data
- Utilization of sensor data where federal methods of monitoring are not available
- Utilization of advanced technologies for NAAQS review
- Utilization of the 5-year network assessment
- Communication to the public
- Emission factors.

Ms. Good then noted the challenges facing the EPA in these areas, which generally relate to funding and accessibility to groups who use monitoring technology:

- Adequate funding for monitoring networks
- Adequate funding for advanced technologies
- Policies for advanced technologies
- Outdated emission factors
- Collection of data for exceptional events demonstrations
- Monitor performance at lower levels.

Ms. Good concluded by reviewing the recommendations listed in the report:

- Request more funding for monitoring
- Address NAAQS monitoring requirements
- Increase funding for community monitoring
- Maintain and expand expertise in sensor technology
- Improve understanding of remote sensing measurements
- Document large-scale exceptional events
- Improve utility of 5-year monitoring network assessment
- Conduct a comprehensive review of emission factors
- Conduct a comprehensive review of EPA databases
- Expand integration of ambient monitoring data.

Voluntary Programs

Mr. Hoekzema then presented a summary of the report chapter about voluntary programs that have been enabled by the CAA or that have provided benefits to other CAA programs. He noted that the list of programs considered in the report is not exhaustive but includes:

- Small Business Environmental Assistance (SBEA) programs
- Voluntary programs for attaining the NAAQS/SIP credits
- Voluntary programs for maintaining the NAAQS (Flex programs, Early Action Compact, Advance Program)
- DERA/National Clean Diesel Campaign
- Energy Star
- SmartWay.

Specific opportunities identified by the group were:

- Provide opportunities for emission reductions beyond “low-hanging fruit” that may not be available any more in some areas
- Provide a framework for avoiding a nonattainment designation, enabling EPA and states to focus attention on problem areas, and engaging communities in air quality planning.

Mr. Hoekzema then reviewed the challenges related to voluntary programs:

- Small businesses continue to face significant challenges keeping track of all CAA regulatory requirements
- Large numbers of areas classified as “Marginal” for ozone limits utility of SIP credit guidance in encouraging voluntary measures
- Lack of certain and tangible regulatory relief/benefit for participation in voluntary programs
- Lack of clarity on “out-of-cycle” designations
- Not all programs are equally rigorous
- Certain statutory provisions discourage early reductions.

Mr. Hoekzema continued by listing the workgroup’s recommendations in this area:

- Grant credit in “Transport SIPs” for implementation of voluntary measures
- Expand opportunities for SIP credits for voluntary measures
- Provide tangible benefits to areas voluntarily reducing emissions
- Continue to support DERA, Energy Star, SmartWay, and other voluntary programs
 - DERA: request maximum funding authorized, focus funding on sources/areas that would most benefit from *federal* funding (i.e., sources that cross state lines like long-haul trucks, locomotives, and ships, and state/ Tribal entities that lack capacity to field their own DERA-like program)
 - Other Programs – continue to support; seek CAAAC input on design and implementation.

Visibility and Regional Haze

Mr. Hoekzema summarized the chapter about visibility and regional haze. He began by stating that there were many significant successes in this area:

- Significant improvements in visibility in vast majority of national parks and wilderness areas
- All of the top 10 most visited parks with visibility monitors have shown major improvements in the past 20 years
- Tens of millions of people from all over the world are able to better enjoy the beauty of these places of special beauty
- Emission reductions specific to regional haze program have made important contributions to these improvements
- Regional Haze planning framework ensures that states and key federal agencies regularly devote attention to this issue.

Mr. Hoekzema noted that there were opportunities for improvement as well:

- Framework for visibility-based PM_{2.5} secondary NAAQS established in 2012 could be used to address regional haze issues
- Projected improvements in visibility through 2028 and baseline of existing emission reductions from other programs (mobile source standards, O₃ and PM NAAQS implementation, NSPS, NSR).

Mr. Hoekzema also listed the challenges facing the EPA in this area:

- About 11% of all monitoring sites have not seen any improvement, including two that have seen degradation
- Uncertainty about the advisability of using interstate trading programs like the Cross-State Air Pollution Rule to fulfill “Best Available Retrofit Technology” requirements
- Lack of new emission reduction measures included in Regional Haze SIPs beyond what may already be occurring for nonattainment SIPs calls into question the utility of the planning effort.

Mr. Hoekzema concluded his presentation by describing the report recommendations:

- Regional Haze resource page/clearinghouse
- Retrospective analysis for degree to which Best Available Retrofit Technology (BART) reductions v. other programs have contributed to visibility improvements in last 20 years
- Examine opportunities for non-BART reductions that may be needed to achieve further visibility improvements moving forward.

Stationary Source Programs: Major & Minor NSR, Title V Operating Permits, New Source Performance Standards

Ms. Broome presented a summary of the report chapter about stationary source programs. She began by explaining their successes:

- Title I
 - Cooperative federalism: State and local air quality decision-making
 - Prevention of Significant Deterioration (PSD) for GHGs: Extension to GHGs without overwhelming PSD permitting program (per 2014 Supreme Court decision)
 - Best Available Control Technology/ Lowest Available Emissions Rate (BACT/LAER): Promoted control technology advances due to technology-forcing nature
 - Reform: NSR Improvement Rules of 2002 and adoption by states
 - Plantwide applicability limits
- Title V
 - All states have program approval
 - By 2008, 99% of all permits issued
 - Although not authorizing new substantive requirements:

- Controls/pollution prevention to avoid program means number of subject facilities has gone down about 50%
 - Procedural benefits (participation, consolidation)
 - Transition to electronic reporting
- NSPS
 - Numerous standards issued
 - “Baseline” for technology determinations in other programs.

Ms. Broome also outlined the challenges and opportunities related to these programs:

- Title I
 - Guidance: Thousands of guidance documents, conflicting with other guidance and interpretations
 - Complex applicability framework
 - Processing time: Obtaining permits takes too long, potentially hampering economic growth
 - Monitoring data: Lack of available monitoring data for PSD analyses
 - Cases re: Title V petitions
 - Scarcity of offsets
 - NAAQS update challenges: Ever-increasing stringency of NAAQS challenges states and companies:
 - Need to restart permitting process
 - Ability to model attainment/non-interference showings
 - Lag between NAAQS revisions and implementation rules
 - Cost v. reductions: High cost for modifications with little emissions benefit
- Title V
 - Delays: Slow processing time for modifications and renewals
 - Petition backlog: Although progress has been made on Title V petition backlog, timing for response still needs reduction
 - Fee adequacy: States struggle on fees, in part due to basis being actual emissions, which is a negative side effect of a positive action (reduced emissions)
 - Reporting formats: Inconsistent reporting format at federal and state levels presents challenges as EPA moves to the Compliance and Emissions Data Reporting Interface (CEDRI)
 - Unrealized potential for certainty: Lingering permit objections puts permit terms in limbo; certainty promised by permit shield not realized
- NSPS
 - Technology review timing
 - Recognizing evolving technology.

Ms. Broome then listed the group’s recommendations for the EPA:

- Title I

- Guidance: Rationalize/reconcile thousands of NSR guidance documents to facilitate understanding which guidance applies; eliminate conflicts
- Processing time: Help expedite permits and applicability determinations
- Plantwide Applicability Limits (PALs): Continue to encourage use of PALs
- Significant Impact Levels (SILs): Address problems with SILs
- Implementation rule timing: Adopt NAAQS implementation rules addressing NSR implications at same time as issuing revised NAAQS
- Monitors: Enhance air quality monitoring networks and explore the People, Prosperity, and the Planet (PPP) program to support this effort
- Study of relative benefits: Conduct study to assess relative benefits of NSR permitting compared with costs; recommendations as to whether additional streamlining is possible under current statutory framework
- Title V
 - Title V Task Force: Implement remaining majority Title V Task Force recommendations
 - Petition backlog: Continued focus to reduce time to respond to Title V petitions
 - Fees: States/EPA to ensure appropriate fees are collected for costs of Title V program; ensure fees are spent only on Title V activities
 - Cost Analysis: Determine true cost of Title V permitting; support diversifying fee structure
 - Processing time:
 - Improve processing time for Title V modifications
 - Improve processing rate for Title V renewals
- NSPS
 - Streamline reviews: Efforts to streamline Section 111(b)(1) technology reviews (see 2011 proposed rule never finalized)
 - AMELs: Evaluate expanded use of AMELs when issuing or revising NSPS.

Section 112: Hazardous Air Pollutants

Ms. Broome presented a summary of the report chapter about HAPs. She began by discussing the CAA’s successes in this area:

- Maximum Achievable Control Technology (MACT)
 - Listed initial 174 major source categories for regulation under aggressive 10-year MACT schedule
 - Issued 97 MACT standards covering all of the 174 major source categories.
 - Performance-based standards to allow achieving standards in most cost-effective manner available.
- Generally Achievable Control Technology (GACT): Regulated 68 area source categories, (e.g., dry cleaners, hard chromium plating operations, aluminum foundries).
- Residual Risk
 - Completed ~90 Risk and Technology Reviews (RTRs) (§112(d)(6), (f)); 8 more by end of 2022

- RTRs determined that virtually every MACT achieved emission levels sufficient to protect public health and environment with ample margin of safety
- Urban Air Toxics
 - Implementation of Urban Air Toxics program made substantial progress to reduce air toxics nationwide, e.g.:
 - 66 percent reduction in benzene
 - ~60 percent reduction in mercury from human-made sources
 - 84 percent decrease of lead in outdoor air
 - From 1990-2012, removal of ~1.5 million tpy HAP from stationary sources, and ~3 million tpy of criteria pollutants as co-benefit
 - Removal of ~1.5 million tpy of HAPs from mobile sources, ~50 percent reduction
 - Outreach and Education: training, funding, partnerships
- Risk Management Plan (RMP): RMP implementation by companies
- NATA: Seven National Air Toxics Assessments as screening tools for SLT agencies to assess health risks from HAP exposure across the country.

Ms. Broome then outlined the challenges and opportunities:

- Meeting Congress's aggressive deadlines:
 - Completion of remaining residual risk reviews (recognizing partially due to large number of source categories)
 - Completion of technology reviews on schedule
- Innovation and pollution prevention: Although written as performance standards, specificity may stifle innovation and pollution prevention opportunities
- Cost accuracy: Cost analyses not keyed to actual costs of implementation of requirements, even though EPA is to be commended for undertaking some retrospective reviews to address the issue
- Clarity: Section 112 standards are exceedingly difficult to interpret and apply, due to internal and external cross references, incorporation by reference, piecemeal amendments in light of court decisions.

Ms. Broome concluded by reviewing the recommendations made in the report:

- Completing the risk reviews: Endeavor to complete as expeditiously as practicable remaining risk reviews; communicate to Congress the challenges of completing these reviews in the allotted time frames.
- Timely technology reviews: Be timely in technology reviews; communicate to Congress the challenges of completing these reviews in the allotted time frames.
- Communicate EPA's views of proper review timing: Advise Congress of appropriate frequency of updates given resources and pace of technology advancements expected.
- Promote innovation: Consider ways to ensure innovative compliance approaches can be allowed to reduce costs and potentially provide even greater emissions reductions.

- Complete and apply learning from cost studies: Apply lessons from retrospective cost analysis comparisons to improve cost/benefit forecasts.
- Simplify regulations: Attempt to simplify Section 112 standards to facilitate understanding, compliance, enforcement. Continue EPA’s “plain language” efforts.

Ms. Good thanked Ms. Broome and asked if there were any questions about any of the material presented thus far. No members had any questions, so the CAAAC briefly adjourned for a short break.

Mobile Sources

Upon returning from the break, Mr. Meyers presented a summary of the report section about mobile sources. He listed a number of successes in this area:

- With regard to “conventional” pollutants, new vehicles of all types are roughly 99 percent cleaner than similar vehicles manufactured in 1970.
- Numerous engine, vehicle and fuel programs have been implemented since 1970; EPA has often coordinated engine/vehicle/fuels programs given synergistic effects on emissions:
 - The 1970 Act directed specific reductions for light duty vehicles.
 - Phase out of lead in gasoline started in 1970s and was largely completed by late 1980s.
 - Standards for HDVs were first promulgated in 1974.
 - In 2000, EPA promulgated “Tier 2” emission standards, followed in 2014 by “Tier 3” standards.
 - In 1994, EPA promulgated first nonroad standards; EPA issued additional rules in 1998 and 2004.
 - Locomotive standards were promulgated in 1998 and updated in 2008.
 - Marine diesel engine standards (over 50 hp) were issued in 1999, standards for recreational engines in 2002, and for larger ocean-going vessels in 2003. Additional rules in 2010 harmonized U.S. standards with international “Article VI” standards.
 - EPA and FAA have issued series of aircraft engine and implementation standards since the early 1970s, most recently in 2021 to control CO₂.
 - EPA has issued multiple fuel standards, including to control fuel volatility, to implement the reformulated gasoline program, oxygenated gasoline, mobile source air toxics, to control sulfur in gasoline and diesel and to implement the renewable fuel standards program.

Mr. Meyers then outlined the challenges and opportunities facing the EPA:

- Various perspectives regarding how to address mobile source emissions in future years and how to balance concerns over criteria versus GHG emissions.

- Views also differ with regard to potential regulatory approaches, in terms of mandates versus performance standards and consideration of costs and available technology.
- Maintaining vehicle emission performance over time is additional challenge, considering both I/M programs and aftermarket.
- Concerns have also been expressed concerning the access of all socio-economic levels to new technology and any supporting infrastructure.

Mr. Meyers also explained the group's recommendations related to mobile sources:

- EPA should review its authority (including any lack thereof) to adopt different approaches under the Clean Air Act in order to address vehicle and engine emissions.
- EPA should also define its' authority under the Clean Air Act, if any, to address related vehicle infrastructure issues associated with greater adoption of electric, hydrogen or other alternative-fueled vehicles.
- EPA should develop the necessary analytical infrastructure to more precisely assess the relative impact of different vehicle types on generation of criteria and greenhouse gases.
- EPA should examine how past regulatory mechanisms allowing for compliance flexibility may be utilized in new rulemakings for criteria and GHG standards.
- EPA should address how it will balance efforts between mobile sources of GHGs and other sources subject to control under the Clean Air Act.
- EPA should better define how it will balance the need to attain local and regional air quality goals with global concerns regarding GHG emissions
 - To what extent do synergies exist, not exist, or potentially produce contradictory outcomes?
 - How should EPA balance both short-term and longer-term health risks?
 - How can EPA integrate its programs with other likely investments by private industry and other federal, state and local programs?
 - How can EPA best preserve compliance flexibility mechanisms, including staggered implementation deadlines?
 - How will incentive programs for advanced and innovative technologies be retained?
 - What will be the ability to utilize "off-cycle" emission reductions for vehicle certification, ABT programs, fleetwide compliance and scaled requirements based on vehicle size, type and utilization (especially in medium- and heavy-duty sectors).

Mr. Meyers gave the CAAAC a chance to ask clarifying questions, but there were no raised hands. He also reminded members that they can post comments in the meeting chat or send them by email following the meeting.

Greenhouse Gas Emissions and Climate Change

Mr. Meyers then reviewed the chapter about climate change and GHGs. He explained that a major challenge is that a slow decline in emissions combined with greater carbon efficiency is good, but no longer sufficient, and net reductions are still needed. However, he noted that there were still many successes:

- 2008 -- ANPRM issued to review potential Clean Air Act (CAA) authority to address greenhouse gas emissions (GHGs) following U.S. Supreme Court decision in *Massachusetts v. EPA*.
- 2009 -- Endangerment and Cause or Contribute Findings under CAA section 202(a), new motor vehicles
- 2010 -- Light Duty Vehicle (LDV) GHG Emission Standards (Model Years 2011-2016)
- 2011 -- Medium- and Heavy-Duty (MD/HD) GHG Emission Standards (MY 2014-2018)
- 2012 -- 2017 and Later Model Year LDV Standards for Model Years (through MY 2025, dependent on Mid Term Evaluation)
- 2015 -- New Source Performance Standards (NSPS) for Electric Generating Units (EGUs), CAA section 111(b)
- 2015 -- Significant New Alternative Program (SNAP) Rules 20-21 regarding high global warming substances (Affected by litigation and Congressional action)
- 2016/2020 -- NSPS for Oil & Natural Gas Facilities (Affected by litigation and Congressional action)
- 2016 -- Endangerment and Cause or Contribute Finding Regarding Aircraft Under CAA section 231
- 2016 -- NSPS for Municipal Solid Waste Landfills
- 2016 -- Phase 2 GHG Standards for MD/HD Vehicles (MYs 2019-2027)
- 2021 -- GHG Emission Standards and Test Procedures for Aircraft
- 2006 -- present -- Renewable Fuel Standards (annual)
- 2009 -- present -- EPA rules requiring reporting of GHG emissions covering numerous source categories
- 2012 -- present -- NSPS for Fossil Fuel-Fired Generation (Clean Power Plan, Affordable Clean Energy Rule) CAA section 111(d) (Affected by litigation and Congressional action).

Mr. Meyers then described the challenges and opportunities facing the EPA:

- Extent and Limits of CAA Authority
 - CAA sections 108-110, GHG NAAQS
 - CAA section 112, GHG MACT
 - CAA section 115, International Air Pollution
 - CAA section 615, Title VI
- Technical and Analytical Requirements
 - Role of Federal/State/Local Programs
 - Lifecycle Accounting for GHG Emissions

- Embedded Carbon in Products
- Creditable Offsets
- Fuel Switching.

Mr. Meyers concluded by outlining the recommendations made in the report:

- EPA should reassess and further define its CAA authority to address GHGs and climate change.
 - EPA should issue new ANPRM or similar public document analyzing available CAA authority to address GHGs under the CAA, soliciting public comment.
 - EPA should clearly articulate what implementation methodologies may be available to include cap-and-trade, financial mechanisms and incentive programs.
- EPA should continue to focus on major sources of GHGs.
- EPA should define how implementation of CAA GHG programs can occur in connection with state and local programs designed to address GHG emissions, including potential conflicts.
- EPA should consider regulatory mechanisms which can incentivize behavior.
- EPA should issue a NODA regarding measurement and accounting methods for GHG emissions, including lifecycle emissions and embodied carbon.
- EPA should more explicitly address expected co-benefits from controlling criteria and other non-GHG air pollutants.
- EPA should proactively address potential GHG issues with respect to imported products.
- EPA should enhance web-based information on GHG standards to include full regulatory history and supporting documents.

Title VI - Stratospheric Ozone Protection

Mr. Meyers proceeded to summarize the section about ozone. He began by discussing the successes of the program:

- Production phaseouts for Class I substances (CFCs, halons, etc.) met statutory schedules, subject to limited exemptions
- Production phaseout for Class II substances (HCFCs) met, exceeded or are currently on-track to meet statutory schedules
- Outside of polar regions, upper atmospheric stratospheric ozone has increased by 1-3% per decade; Antarctic ozone hole expected to gradually close, reach 1980 values by 2060.
- Since many ozone depleting substances have high GWP, implementation of Title VI and Montreal Protocol has reduced warming over Arctic regions.
- Implementation has fostered development of alternative refrigerants, solvents and other “safer” chemicals.

Mr. Meyers then listed several challenges and opportunities in this area:

- Remaining implementation and maintenance of class I and class II phaseout; international compliance with same
- Implementation of Significant New Alternative Program
- Enforcement and differentiated global phaseout schedules
- Addressing HFCs pursuant to non-Clean Air Act authority.

Mr. Meyers then reviewed the report recommendations:

- EPA should conduct a formal “lessons learned” exercise from implementation of Title VI of the CAA utilizing an allowance-based system.
- EPA should define how implementation of Title VI programs affecting HFCs will interact with implementation of the AIM Act.
- EPA should articulate how Title VI programs and other CAA authorities addressing GHGs interact.

Title IV, Acid Rain Program

Mr. Meyers briefly presented the report chapter about the CAA acid rain program. He first summarized the successes, challenges, and opportunities related to this area:

- Near 100% compliance with acid rain program (very limited enforcement actions) resulting in the reduction of sulfur dioxide from covered sources of 95% compared to emissions in late 1970s.
- Costs of emission cap & trade program authorized by Title IV proved to be far less than early EPA and industry projections.
- Acid rain program, to some extent, became a victim of its own success. Subsequent interstate transport programs affecting the same air pollutants and sources have resulted in greater reductions in deposition of sulfates and nitrates than original program within covered states in East.
- Reductions in SO₂ and NO_x from fossil fuel-fired powerplants have also occurred in other areas of the United States driven by other CAA requirements, *e.g.*, Mercury Air Toxics Standards Rule and broader economic forces.

Mr. Meyers then discussed the recommendations made in the report:

- Future Amendments to the Clean Air Act Should Strive for Precision
 - Precise legislative language on amount of reductions, schedule, regulatory structure and allowance program avoided uncertainty in implementation.
- Science Serves a Vital Role in Program Development and Implementation
 - Studies prior to program helped to define problem and dedicated monitoring and testing allowed near-concurrent measurement of efficacy.
- EPA Should Further Assess What Elements of the Acid Rain Program Were Not Needed
 - Title IV provides a “test case” and examples of allowance program structure and implementation over time.

Mr. Meyers then asked if any attendees had questions about the material he discussed. Nobody raised their hand, so they proceeded to the next presentation.

Environmental Justice

Before getting into the specifics of the report, Ms. Mittelstaedt reiterated that these presentations are highly condensed and do not capture the discussions, rationales, or explanations for how or why these ideas are discussed in the report. She encouraged members to read the full draft in order to understand the context of what they hear during this meeting.

Ms. Mittelstaedt then stated that she sees the inclusion of the sections about Environmental Justice (EJ), Tribes, and indoor air as a success in itself. She described the first 50 years of the CAA as revolving around the question of whether we can have clean air and a vibrant economy, and she proposed that the answer to this is clearly yes. She then suggested that now, the paradigm should shift to the question of how to ensure that everyone, regardless of their situation or background, can have access to healthy, clean air. With this, she reviewed the background and successes of the CAA in the realm of EJ:

- Higher risk of premature death from fine particle air pollution among low-income communities (ISA - “consistent evidence across multiple studies demonstrating an increase in risk for nonwhite populations.”)
- Mean ambient concentrations of lead (Pb) have continuously and measurably declined
- Mercury emissions declined by nearly 80 percent between 1990 and 2014, due in large part to EPA’s regulation of major mercury sources, including municipal waste combustion and medical waste incineration. Mercury deposition from atmospheric emissions is a well-established route to contamination of fish and shellfish
- Development of EJSCREEN, EPA’s EJ mapping and screening tool
- Improvements in air emissions inventories and modeling techniques - National Air Toxics Assessment (NATA), which has provided multiple indicators that are used in EJSCREEN
- Citizen suit and judicial review provisions of the CAA provide legal mechanisms for addressing issues in EJ communities.
- Office of Environmental Justice in 1992 through an Executive Order.

Ms. Mittelstaedt then outlined the challenges and opportunities facing the EPA:

- Concentrations of PM_{2.5} vary spatially. Colmer et al., 2020 reviewed 36 yrs data across ~65,000 U.S. census tracts: “differences in PM_{2.5} between more and less polluted areas declined substantially between 1981 and 2016. However, the most polluted census tracts in 1981 remained the most polluted in 2016.” “The most exposed subpopulations in 1981 remained the most exposed in 2016.”
- Opportunity to address EJ hotspots.... New data techniques, such as dispersion modeling, enable researchers to understand emission sources and exposure patterns at finer spatial resolutions.

- Sensor data, strategically collected in EJ hotspots, can help evaluate changes in exposure to criteria and other air pollutants. Sensor data may also help the agency with future federal reference methods (FRM) monitor siting, and can also be used for non-regulatory purposes, as example, for public health risk communication.
- High quality data will become even more critical for issuing accurate and timely public health advisories as climate change impacts air quality in EJ communities.
- Statutory pollutant-by-pollutant approach of some CAA programs does not always adequately address the situations in which a community may be exposed to elevated levels of multiple pollutants.

Ms. Mittelstaedt then reviewed the workgroup's recommendations related to EJ:

- Recommendation 1: Incorporate EJ more extensively and transparently into key risk assessment analyses. Broadly, EPA should be incorporating EJ considerations into the design and reporting of all of its key air quality risk assessments, based on our knowledge that failing to do results in mischaracterization of risk of both EJ communities and non-EJ communities. Specifically:
 - EPA should strengthen its understanding of multi-pollutant exposures.
 - EPA should make it a priority to improve emissions inventories for sources that would significantly impact EJ risk characterization.
 - Incorporate EJ-specific risk assessment and analysis into the NATA.
 - Continue to incorporate EJ considerations into NAAQS reviews and should include more neighborhood-scale analyses in order to ensure consideration of these factors in setting appropriate NAAQS.
 - EPA should support methods for mapping community vulnerability to climate-related air quality events.
 - EPA should use EJSCREEN and other analytical tools to incorporate EJ considerations into other agency air quality analyses to the extent possible.
- Recommendation 2: Expand and Enhance Air Pollution Monitoring in EJ Communities. Despite decades of meaningful investment in a national monitoring network, there are still gaps in EPA's monitoring data in EJ communities.
 - EPA should conduct an analysis of the current regulatory monitoring network to adequately characterize air pollution exposure in EJ communities.
 - EPA should explicitly account for EJ considerations in approval of monitoring network plans and reviews. EPA has the authority to set standards for the approval of SLT monitoring network plans and should consider using this authority to ensure that adequate resources are being allocated to monitor air pollution in EJ communities. For example, EPA could consider 40 CFR §58.10 as a potential area for revisions to address these issues.
- Recommendation 3: EPA should work to expand the capacity of EJ organizations. It is important to ensure that the communities themselves have the ability to work on air quality issues and remain engaged in their communities.

- EPA should increase Clean Air Act funding for community-based programs through grants and cooperative agreements. This will help build capacity to engage as stakeholders in air quality regulation, monitoring and policy, as well as to advise on air quality matters that they have prioritized.

Tribal Air Issues

Ms. Mittelstaedt then summarized the Tribal section of the report draft. She first gave an overview of the issues and explained successes of the CAA:

- Emissions Reductions with Positive Impacts on Tribal Natural Resources and Health
 - Sulfur dioxide emissions have dropped – reducing acid rain deposition and harms to fish and wildlife.
 - Mercury reductions - methylmercury bioaccumulates in the tissues of finfish and shellfish – reductions reduce health risks.
 - Reductions in criteria pollutants and HAPs - reduced Tribal exposures to carcinogenic and mutagenic chemicals detected in flora, fauna, fish and wildlife
- Expansion of Tribal Capacity in Air Quality Management
 - Tribes with regulatory Treatment-as-a-State (TAS)- 7 Tribes in 2012 to 11 Tribes in 2020. Tribes with non-regulatory TAS - from 34 in 2012 to 60 in 2020. 7 Tribes have Tribal Implementation Plans, 5 Tribes have Class I Redesignation under the PSD Program, and 2 Tribes Implement Title V Programs.
 - Office of Air Quality Planning and Standards adopted the guidance document “Consulting with Indian Tribal Governments”
 - Review of New Sources and Modifications in Indian Country
 - Tribal Air Monitoring Support (TAMS) Center established
 - Tribal Authority Rule (TAR)
 - EPA delegations - Title V Operating Permit Program, Tribal participation in Regional Planning Organizations (RPOs) to address visibility and haze, Tribal NSR, and establishment of a Tribal set-aside within the Diesel Emissions Reductions Act (DERA).

Ms. Mittelstaedt then outlined the challenges and opportunities in this area:

- Air Quality Management Resources
 - Insufficient and inconsistent funding for compliance and enforcement
 - Stagnant funding for Tribal air programs
- Climate Change
 - The impacts of wildland fires and intrastate, interstate, and international air pollution transport on the attainment status of Tribal lands
 - Exceptional events - impacting air quality designations.
 - Ambient and indoor air quality may be impacted by increases in smoke, mold spores, pollens and other pollutants and allergens.
- Government to Government Consultation

- Air Quality Monitoring Infrastructure
 - Aging monitors
 - Low-cost sensors.

Ms. Mittelstaedt concluded by reviewing the recommendations in the report:

- Recommendation 1: Tribal Capacity
 - Invest in Tribal Air Quality Management capacity through adequate and consistent funding.
 - Provide timely approval of applications for Treatment as a State from Tribes.
 - Provide resources for additional Tribes to have their own air quality management programs.
 - Encourage Tribes to apply for Tribal authorities, including Class I redesignation.
 - Avoid directing Tribes towards “informational monitoring” with low-cost sensors, versus investing in Tribal use of Federal Reference Methods. Tribes should have the prerogative to decide the level of monitoring and data collection in their jurisdictions. This should be observed at both the national and regional level.
 - Invest in Tribal regulatory monitoring equipment so that Tribes operate as partners with local, regional, and state air quality agencies.
 - Continue to strengthen Tribal ability to set air quality standards for Indian Country, as authorized by the Tribal Authority Rule.
 - Provide new funding to Tribes to keep pace with the increased amount of work in permitting new stationary sources and to review permits issued by states and EPA.
 - Assist Tribes with wildland fire response.
- Recommendation 2: Improve Government-to-Government Consultation with Tribes
 - EPA should work to ensure meaningful of Government-to-Government Consultation, especially when considering delegating authority to states.
 - Tribes are sovereigns and should be provided opportunities for direct consultation with EPA rather than EPA relying only on consultation with the National Tribal Air Association.
 - Develop and implement training of new and existing EPA Air staff on the 1984 Indian Policy, the Government-to-Government relationship, and the intent and procedures of Tribal consultation.
- Recommendation 3: Special Consideration of Tribal Concerns and Recommendations. Given their status as sovereign entities, EPA should give special consideration to Tribal concerns and policy recommendations on implementation of the Clean Air Act. Tribal governments that provided input to this report made broader recommendations on implementation of the Clean Air Act. These included support for measures to controlling greenhouse gases, reconsideration of the 2020 PM and O3 NAAQS reviews, review of the cost/benefit and transparency in science rules promulgated in recent years, building the agency’s EJ program, and reducing emissions from oil and gas. Many CAAAC

members support some or all of these recommendations, while others may not support any of them. Regardless of our own views on these issues, we recognize the special consideration that EPA and other stakeholders owe to Tribal perspectives on overall national air quality policies.

- Other Recommendations (requested by Tribal leaders but workgroup has not achieved consensus on whether they agree with them)
 - Continue to support diesel emissions reduction grants to Tribes and in support of improvement of air quality in Tribal areas, such as the successful Tribal set-aside in the Diesel Emissions Reduction Act (DERA) program.
 - If a Wood Heaters Emissions Reduction Act (WHERA) is approved by Congress, the agency should establish a Tribal set-aside in the WHERA program as well, considering the extensive use of wood heat throughout Tribal lands.

Indoor Air

Lastly, Ms. Mittelstaedt presented the indoor air section of the report. She began by providing an overview. In the US, through the CAA and the Occupational Safety and Health Administration (OSHA), the public is protected from hazardous levels of outdoor air pollution, and industrial workers are protected from hazardous levels of indoor air pollution. However comprehensive public health standards for indoor air quality, in residences, schools, community buildings or commercial spaces, do not yet exist at the federal level. Through epidemiological, toxicological and exposure science research, it is well-established that these indoor air pollutants produce significant (and often inequitable) economic, medical, and public health costs to society. As with the World Health Organization, European Union countries recognize indoor air pollution as an important harm, and many have adopted indoor air quality standards and legislation. As with OSHA, the European Union and other countries, the EPA should address indoor air quality regulation through a blend of source controls, engineering controls and administrative controls. This 50th Anniversary report recommends that the EPA build on the success of the CAA by exploring the viability of the federal government establishing national indoor air quality guidelines and/or standards.

Ms. Mittelstaedt then described the recommendations of the report:

- Recommendation 1: EPA should consider a multi-pronged framework to guide their research and analysis. Recommended branches of research include: 1) Scientific and Technical Assessment, 2) Interdisciplinary Implementation Research, and 3) Comprehensive Legal and Policy Analysis.
- Recommendation 2: EPA should study the extent to which high concentrations of criteria or hazardous air pollutants outdoors lead to increased concentrations of these pollutants indoors and assess whether existing integrated science assessments and risk assessments, respectively, do or do not account for indoor air pollution exposure. EPA should also seek to understand the extent to which total exposure to criteria and hazardous air pollutants occurs outdoors versus indoors and the respective source of each.

- Recommendation 3: The agency should evaluate those methodologies and quantitative standards used by other countries who have adopted reference values, air quality limits and exposure guidelines. Many countries have established long-term and short-term exposure limits, screening values, or “Indoor Air Reference Levels” that can be regulatory, voluntary, or employed when conducting assessments.
- Recommendation 4: The agency should review and assess the impact and potential adaption of other non-EPA federal regulatory measures on indoor air quality. For example, the Department of Energy is required to consider the impact of energy efficiency on habitability and on persons, and HUD is required to promulgate standards for the construction and safety of manufactured housing, including indoor air.
- Recommendation 5: The agency should perform a policy analysis of state and local “clean indoor air” laws (e.g., ordinances that prohibit smoking in public spaces) to assess the results of such efforts, exploring the efficacy and impact of these laws, including issues related to enforcement and implementation.
- Recommendation 6: The agency should consider approaches for coordinating current non-CAA EPA authority applicable to indoor environments, which are generally pollutant-specific (e.g., lead, radon, asbestos) and scattered across a variety of statutes, including the Toxic Substances Control Act (TSCA), the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), and consumer product laws.
- Recommendation 7: The agency should continue to collaborate with ventilation and building industries, and other federal agencies (e.g., CDC, DHHS, HUD) to review standards for ventilation in residential buildings (e.g., ASHRAE Standard 62.1 and 62.2), with the aim of determining the type and concentration of indoor air pollutants and pathogens that can be removed through ventilation and filtration

Ms. Good asked whether any CAAAC members had questions about the presentations, and there were no raised hands. She then closed out the discussion about the report by thanking the workgroup members as well as the supporting contractors. She also thanked the CAAAC members in advance for providing their written feedback via email by August 6. With no further comments by the other co-chairs, Ms. Good then turned it back over to Mr. Shoaff to close out the meeting.

Closing Remarks

Mr. Shoaff thanked the co-chairs and workgroup members and complimented their work on the report draft as well as their presentations. He acknowledged that there was a lot of material to condense, and he stated that they outlined it all in a digestible yet powerful format. He also expressed his excitement for seeing the final recommendations as they incorporate any final comments and feedback and finalize the report.

Mr. Shoaff asked if comments were due to the co-chairs by August 6. Ms. Good confirmed that they were. Mr. Shoaff stated that he wanted to make sure that deadline was clear and added that the EPA will stand by to assist with next steps after that.

Mr. Shoaff mentioned that they are beginning to make plans for the fall CAAAC meeting, but do not have dates in mind yet, so members should reach out if they have preferences. He thanked the committee again, as well as the members who are rotating off, and mentioned several EPA staff who have been helping as well, including Ms. Reddick, Ms. Tamara Saltman, and Mr. Larry Weinstock, the prior DFO, and the extensive contract support provided by Lesley Stobert.

Ms. Reddick also expressed her appreciation to everyone, then adjourned the meeting.

Attachment 1

CAAAC Meeting Attendees

CAAAC Members	EPA Staff	Other Attendees
Shannon Broome	Kristen Benedict	Barbara Bankoff
Natalene Cummings	Joe Goffman	Courtney Bevans
Veronica Figueroa	Catrice Jefferson	James Casey
Jeremy Fincher	Mike Koerber	Daniel Chartier
Steve Flint	Walter Lin	Pratima Gangopadhyay
Gail Good	Cindy Newberg	Alex Guillen
Mitch Hescox	Lorraine Reddick	Sara Hayes
Robert Hodanbosi	Sarah Roberts	Jennifer Hijazi
Andrew Hoekzema	Tamara Saltman	John Kinsman
Jason Howanitz	John Shoaff	Chuck Knauss
Tim Hunt	Karl Simon	Lee Logan
Nancy Kruger	Hillary Ward	Edward Monachino
Steven Marcus	Richard Wayland	Joseph Morris
Eric Massey	Larry Weinstock	Margaret Overton
Bob Meyers		Stuart Parker
Frank Prager		Dave Pavlich
Clay Pope		Sarah Rees
Gary Jones		Sean Reilly
Gillian Mittelstaedt		Leslie Ritts
Kris Ray		Lesley Stobert
Kim Scarborough		Katie Waters
Max Sherman		Bill Wehrum
William Spratlin		Linda Wilson
Ted Steichen		
Victoria Sullivan		
Mary Uhl		
Tim Wallington		
Bob Wyman		