

2022-2025 Triennial Strategic Plan: Air Quality and Greenhouse Gas (GHG) Mitigation Committee (AMS10)

Theme: "We need research that is transformational, not just publishable." ¹

Committee Scope

The committee is concerned with the full range of relationships among transportation, air quality, and GHG mitigation including regulatory and policy considerations, modeling practices, health effects, new technologies, and transportation management strategies.

Mission Statement

Our Mission is to provide leadership in research initiatives and knowledge sharing regarding transportation-related air quality and GHG mitigation issues. AMS10 does this by ensuring that

- up-to-date research needs are maintained;
- cross-cutting emerging issues are identified;
- critical issues are addressed in sessions and events;
- excellence in research is rewarded; and,
- the committee remains relevant and vibrant.

Statement of Urgency Regarding GHG Mitigation

AMS10 is charged with informing the transportation community on air quality and GHG mitigation research needs. The GHG mitigation charge, however, is a task made especially urgent by the escalating concern over climate change.

The National Academies has stated, "...to reach net-zero carbon by 2050, the United States **must begin taking action now** [*emphasis added*] to accomplish five main technology goals. Meeting these objectives over the current decade (2021-2030) will be essential to making the net-zero transition possible on a 30-year timeframe, so that long-lived energy infrastructure can be replaced with zero-carbon alternatives."² As [noted by the National Academies](#), "A sharp reduction in CO₂ emissions is needed to slow climate change and avoid the most severe impacts on weather extremes, ecosystems, human health, and infrastructure."

¹ Theme credit goes to Anand Gopal of the Hewlett Foundation, a speaker at our AMS10 meeting held June 23, 2021.

² See technology goals from [Accelerating Decarbonization of the U.S. Energy System](#): (1) produce carbon-free electricity; (2) electrify energy services in transportation, buildings, and industry; (3) invest in energy efficiency and productivity; (4) plan, permit, and build critical infrastructure; (5) expand the innovation toolkit: triple investment in clean-energy R&D and demonstration.

At the 2021 United Nations Climate Change Conference of the Parties (COP26), participants issued [the Glasgow Climate Pact](#) which, “Expresses alarm and utmost concern that human activities have caused around 1.1 °C of warming to date, that impacts are already being felt in every region, and that **carbon budgets consistent with achieving the Paris Agreement temperature goal are now small and being rapidly depleted.**” The Glasgow pact further, “**Stresses the urgency of enhancing ambition and action in relation to mitigation...** in this critical decade...” *[emphases added]*.

AMS10 Strategic Commitment: Near-Term Focus to Address GHG Mitigation

Given the urgent need to address climate change, and the recent focus by the National Academies and TRB on GHG mitigation, there is a short-term need to prioritize resources on GHG issues. TRB has successfully addressed air quality issues since the 1976 creation of the Air Quality Committee. TRB infrastructure to address air quality issues is well established, and research needs are well developed, although numerous challenges persist, including an increased understanding of equity and environmental justice needs. In contrast, TRB’s GHG focus, through the 2019 creation of the Air Quality and GHG Mitigation Committee, is more recent. Much work needs to be done quickly to identify GHG-related research needs and disseminate policy-relevant findings. Therefore, AMS10 faces a key challenge: it must rapidly address GHGs and simultaneously maintain and improve upon its ability to address air quality. To meet this challenge, the committee must place special emphasis in the near-term on GHG mitigation, while sustaining its ongoing air quality-related work.

Updated AMS10 Near-Term Goals and Organizational Structure

To support rapid progress related to GHG mitigation, and to address other important issues, the committee has identified several goals and near-term organizational adjustments to its operations. These changes will be routinely revisited by the committee and modified as needed.

Near-Term Goals:

1. Connect research to policy: focus research priorities on policy-relevant actions
 - a. Identify policy community needs, share science-based priorities with practitioners
 - b. Develop findings to inform GHG control efforts in the near-term (two to five years)
2. Identify, assess, and profile informative GHG mitigation efforts (case studies)
 - a. What was done? What obstacles were encountered? Were they overcome and how?
 - b. What real-world outcomes were achieved?
 - c. What are the transferrable policy development and implementation lessons?
3. Improve information sharing on GHG and air quality-related research
 - a. Develop TRB e-Circulars (key topic research roadmaps – see Research Clusters below)
 - b. Improve dissemination of findings to practitioner and research-funding communities
 - c. Leverage web-based communication resources
 - d. Coordinate with AMS30 (Energy) and AMS40 (Alternative Fuels and Technologies)
4. Continue to improve diversification of committee participants, membership, and leadership
 - a. Increase involvement by under-represented stakeholders and young professionals
 - b. Address diversification through committee membership rotations
 - c. Promote diversity, equity, and inclusion in research activities (e.g., paper submissions)

Progress will be achieved via new Research Clusters and expanded Administrative Task Force work (described next).

New Subcommittees and Research Clusters: In the short term, AMS10 work will focus on key research topics, or clusters. Emphases include GHG mitigation, environmental justice, and fleet electrification and charging infrastructure. Work will consider GHG reduction and air quality improvement co-benefits. The new subcommittee structure is as follows (replacing prior subcommittees):

Subcommittee: Electrification and Future Mobility

Research Clusters:

- Fleet electrification and lifecycle emissions impacts for air quality and GHG control
- Behavior change, pricing, and future mobility: use and electrification of Transportation Network Companies, Connected/Automated Vehicles, transit

Subcommittee: Environmental Justice & Goods Movement

Research Clusters:

- Environmental justice: light, medium, and heavy-duty vehicle impacts and controls
- Goods movement and diesel-powered vehicle air quality and GHG impacts and controls

Additional Outreach and Communication Task Force: To improve information sharing, the committee is adding an Outreach and Communications Task Force. The new task force complements existing Paper Review and Summer Meeting Task Forces and the work of our Research Coordination leaders.

Opportunities for Involvement in AMS10 Activities

Our committee relies on volunteer support to accomplish committee goals. There are many ways to participate, from reviewing papers submitted for presentation at the TRB Annual Meeting, to preparing research needs statements, to delivering webinars, to supporting the numerous activities of our administrative task forces, subcommittees, and other work efforts. Opportunities are numerous for interested individuals to support the committee. **Table 1** includes the committee's Leadership Team members and **Table 2** highlights other important roles and the volunteers supporting those activities as of April 1, 2022.

Anyone interested in participating in AMS10 activities is encouraged to become a *Friend of the Committee*, and to reach out directly to the chair or to any of the volunteers identified in Tables 1 and 2. Feel free to volunteer even if you do not see a particular role in Tables 1 or 2 that matches your direct interest; we are constantly innovating and looking for new ideas and support. Here are instructions on how to sign-up as a "Friend:"

- Go to MyTRB (<https://www.mytrb.org/>)
- Click on "Log in"
- Enter your login information, or follow the directions if you don't remember your login or don't think you have an account
- Once you are logged in, go to "MyTRB Home" on the menu bar, then select "Become a Friend of a Standing Committee"

Table 1. AMS10 Leadership Team as of 1 April 2022.

	Comm. Chair	Comm. Research Coordinator	Research Needs Statement (RNS) Lead	Paper Review Task Force	Summer Meeting Task Force	Outreach and Communications Task Force	Electrification & Future Mobility Subcommittee	Environmental Justice & Goods Movement Subcommittee
Alex Bigazzi							Vice Chair	
Kanok Boriboonsomsin								Vice Chair
Cindy Copeland								Chair
John Davies							Chair	
Doug Eisinger	Chair							
Ellen Greenberg					Vice Chair			
Marianne Hatzopoulou		CRC						
Natalie Liljenwall			RNS Lead					
Greg Rowangould				Chair				
Annalisa Schilla					Chair			
Shams Tanvir				Vice Chair				
TBD						Lead		

Current complete committee membership list is available at <https://www.mytrb.org/OnlineDirectory/Committee/Details/5229>

Table 2. Additional roles and volunteers as of April 1, 2022.

Role	Volunteers
Committee record keeper	Andrew Eilbert, Volpe Center
Liaisons to other TRB committees	<ul style="list-style-type: none"> - Alt. Transp. Fuels & Technologies Comm. (AMS40), Mike Roberts, FHWA - Environ. Issues in Aviation Comm. (AV030), AQ Subcomm., Roger Wayson, AECOM - Health and Transportation Subcomm. (ADD50), Chad Bailey, EPA - Joint Subcomm. on Climate Change (AMS10, 30, and 40) TBD - Transp. Energy Comm. (AMS30), David Kall, FHWA - Transp. in Developing Countries Comm. (ABE90), Ivan Racic, ADOT - Vehicle-Highway Automation Comm. (AHB30), Heng Wei, Univ. of Cincinnati
Listserv management	Jane Lin, Univ. of Illinois, Chicago
Webinar Coordinator	Georges Bou-Saab, Arcadis, Lead
Website content manager	Shams Tanvir, Cal Poly San Luis Obispo (Committee Communications Coordinator)
Website host	Reza Farzaneh, Texas Transportation Institute
Workshop coordinators for annual mtg.	Varies by year