

TRIENNIAL STRATEGIC PLAN (TSP)

Evaluation Period: April 15, 2022 to April 14, 2025

Please note that rows and boxes below expand as you enter the information

PART 1: Committee Name and Scope

This is an opportunity to review the officially approved name and scope that are posted on the TRB website and consider any necessary changes. If changes are needed, include the proposed scope statement and/or name and justification for the changes.

NOTE: A proposed committee name and/or scope change must have the approval of 2/3 of the official members of the committee. The balloting done at a committee meeting that has less than 2/3 of the members in attendance must be augmented with e-mail balloting of the members not in attendance.

Committee Code *	AED30
Committee Name *	Standing Committee on Information Systems and Technology
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Committee Scope *	This committee is concerned with reviewing and assessing the state-of-the-art in the development and application of information systems and technologies in transportation for productivity improvements. Areas of emphasis are: system user interfaces, data management, and data sharing; web technologies and e-government; delineation and prioritization of research, development, and demonstration programs; encouragement of common semantics and standards in the transportation field; technology transfer among transportation organizations, vendors, and universities; and the impact of computer technologies on transportation organizations.
- Date(s) reviewed	2022 Annual Meeting
- Change, if proposed ***	The AED30 Information Systems and Technology committee is concerned with research needs and strategic leadership regarding the use of advanced computing and technology to provide optimal transportation solutions and outcomes, with a particular focus on identifying opportunities, challenges, and risks for transportation agencies. Areas of emphasis include advanced sensing technologies, data and technology governance and leadership, construction and infrastructure management systems, cybersecurity, and information / operational technology convergence.
- No. of official members approving change/total number of members **	
Location of Previous Cycle TSP	AED30 website: https://www.aed30.org

* Show current, as it currently appears in the [TRB Online Directory](#)

** Includes Chair, Standing Committee Members, Emeritus Members, and Young Members

*** Show proposed, or Not Applicable

PART 2: Committee Activities

TRB Mission

As part of the National Academies of Sciences, Engineering, and Medicine, the Transportation Research Board (TRB) provides leadership in transportation improvements and innovation through trusted, timely, impartial, and evidence-based information exchange, research, and advice regarding all modes of transportation.

AED30 Scope (Proposed)

The AED30 Information Systems and Technology committee is concerned with research needs and strategic leadership regarding the use of advanced computing and technology to provide optimal transportation solutions and outcomes, with a particular focus on identifying opportunities, challenges, and risks for transportation agencies. Areas of emphasis include advanced sensing technologies, data and technology governance and leadership, construction and infrastructure management systems, cybersecurity, and information / operational technology convergence.

PART 2.1: Committee Activities Supporting Transportation Research and Innovation

Enumerate and summarize any Research Needs Statements (RNS), Synthesis Statements, or Cooperative Research Program problem statements developed within or with the support of the committee during this TSP cycle. (The RNS identified should match those listed on the TRB RNS Database.) Note whether the statements were submitted for funding through any CRP or any other organizations or “pooled funding” sources and note whether they received support from those selecting projects for support and whether they received funding. Identify any other committee actions to support transportation research that is relevant to the committee, both those that address topics that are related to the critical transportation issues most recently identified for TRB and the Technical Activities Division and those that represent emerging challenges affecting some parts of the industry.

- **AED30 Research Task Force.** With the 2020 TRB Technical Activities Division Strategic Alignment and committee restructuring, the former ABJ50 Research Subcommittee was reorganized into the AED30 Research Task Force. This Task Force provides a coordinating role for AED30 to facilitate research and innovation activities across the four AED30 research subcommittees. It also provides a focal point to develop cross-cutting and general research needs at the committee level. The AED30 Research Task Force is led by the AED30 Committee Research Coordinator (CRC), who also serves as a representative to the AED00 Data and Data Science Section Research Subcommittee.
- **Research Subcommittees.** With the committee restructuring, AED30 added two new research subcommittees and renewed efforts to align subcommittee research activities around key foundational focus areas for AED30:
 - AED30 (1) Sensing Technologies. Joint Subcommittee of AED30 and AED40.
 - AED30 (2) Technology Strategic Leadership.
 - AKC10 (1) Information Systems in Construction Management. Joint Subcommittee of AKC10 and AED30.
 - AMR40 (1) Cybersecurity. Joint subcommittee of AMR40, AED30, and AMR10.

The four AED30 research subcommittees play a leading role to develop research needs, NCHRP proposals, and peer exchange opportunities around critical and emerging issues of interest to the Committee. The research subcommittee chairs or co-chairs, who are also members of AED30, participate and report on activities at the AED30 mid-year and annual meetings.

- **Committee Composition.** The AED30 Committee encourages full participation from government, academia, and industry in order to effectively identify and assess emerging trends in transportation information systems and technology. Leadership opportunities and participation in research panels, subcommittees, task forces, peer exchanges, mid-year meetings, paper reviews, and research needs development are open to all members and friends regardless of affiliation. AED30 Diversity, Equity, and Inclusion committee composition objectives are described in Section 2.3.
- **Cross-Cutting Issues.** Rapid advances in information systems and technology are continuing to have to a broad transformational impact across the entire transportation domain. As such, AED30 renewed efforts to enhance collaboration across TRB and with external organizations and partners.
 - **Joint Subcommittees.** AED30 joint subcommittees provide an opportunity for formal collaboration with other TRB committees around cross-cutting research areas. Existing co-sponsorships include: Construction Management (AKC10) with AKC10 (1); Systems, Enterprise, and Cyber Resilience (AMR40) and Critical Transportation Infrastructure Protection (AMR10) with AMR40 (1); and Geographic Information Science (AED40) with AED30 (1).
 - **Data & Data Science.** The AED30 CRC is an active member of the AED00 Data and Data Science Section Research Subcommittee, which serves a coordinating role to identify critical and emerging research needs that have cross-cutting interest within the Section. A joint, virtual mid-year meeting between AED10, AED30, and AED40 was also held in 2021 to enhance collaboration and present ideas and research needs of interest to all three committees.
 - **ITS / TSMO.** Emerging challenges from information and operational technology (IT/OT) convergence have highlighted the need for greater collaboration between the IT and Transportation Systems Management and Operations (TSMO) communities. This has been a regular topic of discussion at AED30 mid-year and annual committee meetings. Additionally, several members of AED30 have been active participants in peer exchange activities around this topic through FHWA and the National Operations Center of Excellence (NOCoe).
 - **AASHTO.** With a similarly timed restructuring of the AASHTO committees, AED30 has renewed efforts to preserve and enhance its focus on the DOT CIO role and to establish ties with the new AASHTO Committee on Data Management and Analytics (CDMA). A joint TRB AED30 / ASSHTO CDMA CIO in-person meeting is also planned for Spring 2022.

PART 2.2: Committee Activities & Accomplishments that Support the Exchange and Promulgation of Information within the Committee, the TAC, TRB, and the Transportation Industry

Provide highlights of any notable activities or accomplishments for the past three years. Examples would include co-sponsoring workshop or conference with committee(s) in another Group or related to an important new topic area or work related to diversity and inclusion. Special circulars or publications completed or supported by the committee. Subcommittee contributions should be briefly mentioned; these will be reported in detail in Section 3 below. Do not include routine Annual Meeting session or paper review details, these will be included in Appendix A.

1. Mid-Year Meetings

2022 – Joint mid-year “Transportation Technology and Information Systems” meeting of TRB AED30 and the AASHTO Committee on Data Management and Analytics (CDMA) Chief Information Officers. April 4-6, 2022, in San Diego at the Caltrans District 1 office (planned). Topics of discussion will include:

- Emerging Transportation Technology Trends
- Cybersecurity
- IoT and IT/OT Convergence
- Data Governance / Analytics / GIS
- Enterprise Technology Governance, Outsourcing
- Workforce Trends
- (IT) Technology Trends

2021 - Joint virtual mid-year meeting with AED10 (Statewide/National Transportation Data and Information Systems) and AED40 (Geographic Information Science), July 2021. The meeting featured breakout rooms and sessions covering cross-cutting issues for the three committees and the AED00 Data and Data Science section as a whole. Topics included:

- Strategy and Outcome-based Machine Learning and AI
- Integrating the world of BIM, GIS, and Asset Management Data and Systems
- Aligning Project Specifications with UAS Photogrammetry & LiDAR
- CAV’s: Demand / Mobility Impacts and Public Health / Safety Impacts

2019 – Mid-year ABJ50 committee meeting and CIO breakout discussion at the AASHTO Data in Transportation Decision Making Conference in Atlanta, September 2019.

2. TRB Webinar Series

TRB webinar series have been largely led by or included participation of the AED30 Research Subcommittees, which have developed several successful webinars over the years.

- Evolution of Project Delivery Information Systems, June 4, 2020. With AKC10.
- Why Surface Transportation Agencies Use Drones, February 25, 2020. With NCHRP Domestic Scan Program, Project 20-68A, Scan 17-01.

3. Membership Contributions to Other Forums

AED30 members and friends frequently participate in outside research and peer exchange activities related to AED30 research efforts:

- Achieving Better Coordination Between Operations and IT, webinar series and peer exchange hosted by the National Operations Center of Excellence (NOCoE). September 1, 2020 (Part 1) and October 6, 2020 (Part 2).
- Cyber Subcommittee participation in the ITS World Congress, October 11-15, 2021, Hamburg, GE.
- Cyber Incident Management: Preparation and Response to Cyber Attacks, December 7, 2021, ITS America, Charlotte, NC.
- NSF Civil Infrastructure Systems Open Knowledge Network (CIS-OKN) - Project Collaboration Workshop. January 13, 2020, with the TRB Annual Meeting, Washington, D.C.

4. Annual Meeting Workshops

AED30 workshops over the past three years have focused on critical and emerging issues facing state transportation agencies related to advances in data and technology. The workshop formats typically start with a panel of agency and industry experts followed by round table breakout discussions. The objectives are to leverage the breakout discussion format and audience participation to identify and prioritize key research and peer exchange needs for the Committee. AED30 sponsored workshops from the past three years include:

- **2022**
 - Cyber Resilience: Keeping the Nation’s Transportation Infrastructure Safe and Secure from Cyber Attacks, with AMR10 (sponsor), ACP15, and AMR40.
- **2021**
 - Strategic Planning for Critical and Emerging Issues in Technology and Data, with AED10 and AED40.
 - Next Generation Project Delivery Information Systems: Data Integration and Open Knowledge Networks, with AKC10 (sponsor).
- **2020**
 - Data Governance Issues for Transportation Agencies, with ABJ20 and ABJ60.
 - Evolution of Project Delivery Information Systems: Where We Were and Where We Are Headed, with AFH10 (sponsor) and AKC10(1).
- **2019**
 - From Data to Information: Enabling Modern Decision Support for Transportation Agencies, with ABJ20 and ABJ60.
 - Unmanned Aircraft Systems (UASs): The Impacts of New Capabilities and New Rules on Integrating UAS into Day-to-Day Use, Parts 1 and 2, with AV000 (sponsor), ABJ60, and AV060(1).
 - E-Construction: Analyzing and Utilizing Nongraphical Construction Data for Smarter Project Delivery, with AFH10 (sponsor) and AKC10(1).

5. Annual Meeting Lectern Sessions

The AED30 lectern sessions over the past three years have covered a range of topics related to data governance, cybersecurity, and emerging technologies, with a particular focus on how state agencies might plan for, benefit from, and incorporate these developments. AED30 sponsored lectern sessions from the last three years are listed below:

- **2022**

- Leveraging Cyber Resilience to Deliver Reliable and Equitable Transportation Systems, with AMR40 (sponsor) and AMR10.
- Advances in Edge Computing for Intelligent, Real-Time Traffic Sensing and Detection.
- **2021**
 - Advances in Sensing and UAV Technologies.
- **2020**
 - Chief Information Officers Roundtable: The Pressing Issues and Concerns from Our Leaders, with ABJ20 and ABJ60.
 - Keeping Our Nation’s Transportation Assets Secure from Cyber Attacks, with ABR10 (sponsor) and AHB15.
 - GIS Data Needs for Connected Autonomous Vehicles, with ABJ60 (sponsor) and ABJ20.
 - Developing an Innovative and Transformational Strategy for the Connected Truck Extended Ecosystem, with ABJ90 (sponsor), ABC30, ABJ20, ABJ35, ANB70, AT015, AT060, and AT060(1).
- **2019**
 - Governing Technology and Data in a Changing Environment, with ABJ20 and ABJ60.
 - Protecting Critical Transportation Infrastructure and Operations from Cyber Disruptions, with ABR10 (sponsor).
 - Building Information Modeling Implementation Roadmap: A Look Ahead to Trends, with ABJ95 (sponsor), ABJ60, AFB70, AFB80, AFH10, and AFH30.

See Appendix A for a complete listing of AED30 sponsored and co-sponsored lectern sessions.

6. Annual Meeting Poster Sessions

The AED30 Information Systems and Technology poster session has been a consistently popular event, showcasing leading papers from the AED30 paper review process. In past years, AED30 also successfully utilized the TRB Committee Call for Papers to develop calls for research around emerging sensing technologies.

7. Lightning Talks and Round Table Discussions

Rapid fire “lightning talk” presentations from peer IT leaders and through a round table open discussion format have been a popular component of the AED30 Annual Committee meetings. These events provide an opportunity to discuss a breadth of current issues, successful approaches, and research needs related to information systems and technology in transportation.

PART 2.3: Committee Activities and Organizational Actions to Realize Committee and TRB Goals for Diversity, Inclusion, and Representation

Summarize committee actions and decisions in support of the goals and milestones for including and involving under-represented groups and demographics in committee activities.

- *How will your committee recruit diverse members and friends?*

- *How will your committee engage with organizations that are traditionally more diverse than TRB?*
- *How will your committee engage members, friends, and other attendees during meetings and other activities to build connections and invite active and ongoing participation?*
- *How will your committee address equity, civil rights, and/or workforce development in committee technical activities?*
- *How will your committee measure progress in diversity and inclusion?*

TRB has defined a roadmap to improve inclusion and diversity within the organization and across the standing committees in its 2018 Diversity, Equity, and Inclusion (DE&I) Strategic Plan (<http://www.trb.org/AboutTRB/StrategicPlan1.aspx>). These goals are designed, in part, to ensure that TRB has the broadest possible array of perspectives and opinions on its committees and panels. The AED30 committee is committed to implementing processes to incorporate these goals within the ranks of its members and friends and to identify and develop research needs related to equity in transportation information systems and technology. As the Information Systems and Technology committee, AED30 also recognizes the importance of applying a definition of DEI that includes people with disabilities, e.g., to achieve equal access to transportation data and technology from both a demographic and user perspective.

Key initiatives over the next three years to address these needs are:

- The AED30 committee will be going through its three-year membership rotation in 2022. Recruitment of new members shall strive to maintain and improve a balanced demographic representation.
- All AED30 activities are open to committee friends to fully participate and/or serve in leadership positions. Ongoing outreach to committee friends shall strive to maintain and improve a balanced demographic representation.
- The AED30 committee shall establish a new Diversity, Equity, and Inclusion (DEI) Task Force whose scope covers the following:
 - Provide leadership within AED30 on DEI needs and objectives.
 - Lead outreach activities to new members and friends to improve DEI participation in the life of the Committee
 - Lead outreach to other TRB committees, external organizations and stakeholders related to DEI needs.
 - Generate research needs, develop white papers, and sponsor webinars related to equity in transportation information systems and technology.
- A new Young Member Liaison position was created in 2019 to support outreach to and mentoring of new members and friends. This position, which has not been fully implemented, should be expanded to support outreach and recruitment to improve diversity and inclusion objectives. Key activities will include:
 - Represent AED30 at the New Attendee Orientation at the Annual Meeting
 - Connect with and report on activities of the TRB Young Members Council
 - Connect with and report on activities of the TRB Minority Fellows and FHWA Eisenhower Fellows
 - Serve as a member of the DEI Task Force.
- AED30 shall coordinate with the AED00 section DEI Task Force to share best practices and identify common areas for improvement across the Data and Data Science section committees.

PART 3: Report of Activities of Subcommittees

Provide the following information on any of the identified formal Subcommittees which are structured underneath this committee. These descriptions should provide a solid understanding of the Subcommittee in a concise manner.

- Scope of Subcommittee
- Activities of Subcommittee
- How activities align with parent committee
- Other committees jointly sponsoring this subcommittee. Describe how the work is coordinated across the sponsoring committees?
- Could this subcommittee be sun-setted? Has it fulfilled its purpose or does the subcommittee fulfill an ongoing purpose for the sponsoring committees?

(Note: Information for informal committee working groups are not required)

AED30 is the parent to four active Research Subcommittees. These subcommittees play a leading role to develop research needs, synthesis statements, and cooperative research program proposals around critical and emerging research areas of interest to AED30. They also provide an organizing structure for AED30 to focus research and peer exchange activities around key issue areas.

- **AED30 (1) Sensing Technologies.** Joint subcommittee of AED30 and AED40. This subcommittee is concerned with AED30 research needs related to remote sensing, in situ (emplaced) sensors, geospatial information technologies, and visualization models for innovative transportation applications. The AED30 (1) subcommittee will go through a leadership transition in 2022 to align with the AED30 parent committee rotation.
- **AED30 (2) Technology Strategic Leadership.** This subcommittee is concerned with AED30 research needs related to information / operational technology convergence, data and technology governance, digital transformation, and the changing role of the CIO in transportation. The AED30 (2) subcommittee was established in 2020 in recognition of the ongoing importance of these topics for the committee along with the need to formally organize efforts to address corresponding research needs and peer exchange opportunities.
- **AMR40 (1) Cybersecurity.** Joint subcommittee of AMR40, AED30, and AMR10. This subcommittee is concerned with addressing cyber threats to transportation organizations and assets, including assessing risks associated with emerging technologies. The AMR40 (1) subcommittee came under sponsorship of AED30 in 2020 with the broader TRB committee reorganization. Cybersecurity has been a longstanding core issue area for AED30. Bi-monthly meetings of the Cybersecurity subcommittee have featured invited presentations from government and industry leaders covering critical and emerging cyber issues and threats.
- **AKC10 (1) Information Systems in Construction Management.** Joint subcommittee of AKC10 and AED30. This subcommittee is concerned with the application of modern technologies, data/information, and processes to improve productivity in transportation construction projects. The AKC10 (1) subcommittee will go through a leadership transition in 2022 to align with the AED30 parent committee rotation.

In addition to activities specific to each subcommittee, all AED30 Research Subcommittees shall strive to:

- Maintain an active list of subcommittee members
- Hold an open subcommittee meeting at the TRB Annual Meeting
- Hold one or more mid-year meetings to advance research objectives during the year
- Develop and maintain an active set of Research Needs Statements (RNS)
- Develop proposals for NCHRP Synthesis and Research projects.
- Propose and Participate in TRB Webinars
- Coordinate with the AED30 CRC on cross-cutting issues and to align research activities with the parent committee.
- Participate in AED30 mid-year and annual committee meetings
- Participate in AED30 Call for Papers, when applicable

Each subcommittee chair or one of its co-chairs shall serve as a member of the AED30 committee. In some cases, this will require ensuring that new subcommittee chairs also hold AED30 member appointments per the committee rotation. AED30 shall review its subcommittee sponsorships every three years, with the committee rotation year, to determine whether the subcommittee is continuing the fulfill an ongoing purpose for AED30 sponsorship.

PART 4: Committee Future Outlook Statement and Committee Three-Year Plan (Limit 1,500 words total)

Part 4.1: Committee Future Outlook Statement

The committee future outlook statement should include a discussion of the primary factors and influences that will shape the transportation community and topic(s) within the committee's scope over the short- (one to three years) and long-term (four to seven years). This statement should include:

- *identification of emerging, critical, and cross-cutting issues **within the committee scope** (these issues could have been identified by the committee, Section, Group, Technical Activities Council, TRB Executive Committee, or other transportation committees and organizations);*
- *Committees should review and shall site specific reference to TRB Critical Issues in Transportation 2019 where applicable (publication located <https://www.nap.edu/resource/25314/criticalissues/>)*
- *Committees should review and identify areas which also align with the current TRB Strategic Plan located http://onlinepubs.trb.org/onlinepubs/general/trb_strategic_plan.pdf*
- *identification of emerging, critical, and cross-cutting issues **outside the committee scope** that provide opportunities for liaison and collaborative efforts with other TRB committees, sections and Groups as well as outside organizations (these issues could also come from a wide range of sources).*

The AED30 committee is broadly concerned with:

- Identifying opportunities, challenges and risks for transportation agencies associated with emerging information technology developments
- Advancing the state of the practice in the development and application of information systems and technologies to provide optimal transportation solutions and outcomes
- Guiding advanced computing and technology research and innovation towards equitable and sustainable solutions

Specific *technologies* of interest include:

- Sensing technologies (broadly defined to include infrastructure sensors, probe vehicles, unmanned aerial vehicles and remote sensing technologies, among others)
- Cloud computing; big data analytics / data mining; data integration platforms
- Operational technology; smart technologies and field devices; IoT and edge computing
- Fiber optics communications technology
- Technologies that support access to people with disabilities

Specific *applications* of interest include:

- Data and technology services related to connected, automated, and electric vehicles
- Smart infrastructure – using sensor technology to enhance safety and monitor infrastructure conditions
- e-Construction; construction management systems; building information modeling (BIM)
- Digital twins in the design, build, and management of transportation infrastructure.

- Data and technology for transportation agency decision making and traveler information
- Data science; artificial intelligence / machine learning (AI/ML)
- Enterprise information systems; asset management systems

Specific *concerns* of interest include:

- Keeping critical transportation infrastructure safe and resilient
- Organizational, workforce, and management strategies needed to meet the accelerated pace of technology changes impacting the industry
- How to implement new technologies into day-to-day use
- Addressing expectations for open data available everywhere
- Achieving better coordination between operations (TSMO) and IT
- Ensuring equity in the rollout and adoption of advanced computing applications, digital infrastructure, and emerging transportation technologies
- Assessing the impact of emerging disruptive technologies and best practices to address them.

Over the next three years, the committee's activities and areas of focus will be influenced by the following key trends:

- **Emerging issues and trends** in operational technology / ITS, cybersecurity, data integration and analytics, connected/autonomous vehicles etc. will influence the ability of transportation organizations to maintain the essential capabilities needed to continue to fulfill their missions
- **Rapidly developing technologies for connected and autonomous vehicles**
- **Explosion of data from multiple sources** – including cell-phones, mobile LiDAR, digital imaging, infrastructure sensors, and connected and autonomous vehicles, creating both challenges and opportunities related to “big data” storage, management, integration, mining, analytics and access.
- **Development of new sensor technologies and data collection platforms** that present challenges and opportunities in how to use them effectively, manage their data flows, and implement them into workflows and decision support processes.
- **Increased private sector involvement in provision of transportation**, and in collection of data – commercialized data providers, outsourced maintenance and operations services and use of public/private partnerships for infrastructure development and operations has significant implications for data sharing, integration and use for management decision making.
- **Emergence of new information technology service delivery approaches**, including cloud-based infrastructure-as-a-service and software-as-a-service models, statewide information technology consolidation, and shared service models.
- **Emergence of data driven approaches for providing equitable access to transportation**, including multi-modal mobility programs and metrics for measuring service.

Several of the topics noted above have cross-cutting interest to other committees within the AED00 Data and Data Science section and across TRB, including:

- Operational technology and IT/OT convergence - AHB10
- Data and technology governance – AED10, AED40
- E-Construction and BIM - AKC10, AED40
- Data science and AI/ML – AED50, AED40, AED80
- Cyber security and resilience – AMR40, ARM10
- Digital equity - AME10, AME30

The TRB Critical Issues in Transportation 2019 (<https://www.nap.edu/resource/25314/criticalissues/>)

defines 12 interrelated topic areas with 63 subtopics. While there are connections from the AED30 scope to nearly all critical issue areas, there are several key topics that are directly relevant to the AED30 research subcommittees and the DEI Task force:

- AED30 (1) Sensing Technologies
 - Transformational Technologies and Services
 - Research and Innovation
- AED30 (2) Technology Strategic Leadership
 - Governance
 - Institutional and Workforce Capacity
 - Research and Innovation
- AMR40 (1) Cybersecurity
 - Resilience and Security
- AKC10 (1) Information Systems in Construction Management
 - System Performance and Asset Management
- AED30 Diversity, Inclusion, and Equity (DEI) Task Force
 - Equity
 - Serving a Growing and Shifting Population
 - Institutional and Workforce Capacity

Part 4.2: Committee Three-Year Plan

The committee plan is a short, focused statement of where the committee wants to go and how to get there. The committee plan may include, but is not limited to:

- **projects, activities and products** that the committee will undertake during the next three years to address the TRB critical issues, emerging, and cross-cutting issues identified above;
- *how the current or proposed changed membership composition will respond to issues identified above with the group or section's goals for diversity and inclusion;*
- *strategies to encourage significant involvement by the committee's Young Members, state DOT members, special sponsors, and other key constituents, both during committee meetings and at other times;*
- *strategies for specific implementation to encourage mentoring future leaders*
- *committee's communication activities, and efforts to provide assistance and technology transfer to the transportation community;*
- *research – for the TRB committees, “research” is a very broad concept that can begin with providing the user perspective on research needs, writing research needs statements, tracking research, understanding the funding available for research in their topic area, developing case studies, lessons learned, disseminating research, technology transfer, and other activities that will advance the state of the practice. Potential research activities are:*
 - *research directions, results, and needs or gaps;*
 - *plan for maintaining and augmenting the Research Need Statements (RNS) database;*
 - *efforts to address research implementation and user needs, and ways to identify research use and implementation.*

Goal #1: Committee Membership

Attract a diverse and active membership representing key areas of interest and provide opportunities for committee members and friends to take on leadership roles to strengthen the capabilities and reach of the committee.

- **2022** - Complete the AED30 three-year committee rotation
 - Fill leadership vacancies resulting from the rotation.
 - Strive to improve the demographic balance of the committee
 - Strive to maintain active participation of State DOT IT executives
 - Committee membership levels:
 - i. 25 main members
 - ii. 5 additional slots for international members
 - iii. 4 additional slots for young members
 - iv. 2 additional slots for state DOTs
 - Committee leadership positions:
 - i. Committee Chair
 - ii. Committee Research Coordinator
 - iii. Committee Communications Coordinator
 - iv. Paper Review Coordinator
 - v. Young Member Liaison
 - vi. AASHTO Liaison
 - vii. Subcommittee and Task Force Chairs
- **2022 – 2024**
 - Encourage active participation and engagement from all committee members and friends in event planning, research needs development, peer exchange opportunities, and the annual paper review process
 - Provide opportunities for young and minority members and friends to become involved in the life of the committee
 - Strive to fill vacancies, as they arise, in order to maintain a full, demographically balanced committee slate of the triennial term
- **2024** – Start planning for the Chair and Member transition with the 2025 Rotation

Goal #2: Committee Strategic Planning

Develop and maintain a Triennial Strategic Plan (TSP) and annual Committee Action Plans (CAPs) to provide strategic direction and well-defined milestones for committee activities.

- **2022** - Complete the 2022-2024 Triennial Strategic Plan
 - The TSP is a living document which should be reviewed annually for potential improvements and refinement.
- **2022 – 2024**
 - Develop annual Committee Action Plans (CAP) based on the TSP. The CAPs shall be finalized during the January Annual Meetings. The CAP should:
 - i. Set realistic goals to achieve the objectives of the TSP.
 - ii. Provide a path to achieve those goals through active participation of members and friends.
 - iii. Provide a plan to review and assess CAP progress on a regular basis during Mid-Year and Annual Meetings.
 - Review and potentially update the TSP per future revisions of the TRB Critical Issues in Transportation document
- **2024** – Establish a task force to begin developing the 2025 – 2027 TSP

Goal #3: Diversity, Equity, and Inclusion

Implement goals from the TRB Diversity, Equity, and Inclusion (DE&I) Strategic Plan (<https://www.trb.org/AboutTRB/StrategicPlan1.aspx>) related to Committee membership and participation. Address DEI related issues for information systems and technology, including the perspectives of people with disabilities, through AED30 research and leadership activities.

- **2022**
 - Formally establish the AED30 DEI Task Force
 - Maintain an active DEI Task Force member list
 - Develop a three-year plan for the Task Force, noting potential items below.
 - Establish a web page for the DEI Task Force on the AED30.org website.
- **2022 – 2024**
 - Schedule three or more virtual planning meetings to advance the objectives of the DEI Task Force
 - Consider proposing a webinar series on DEI issues affecting information systems and technology in transportation. This series could be co-sponsored and/or include presenters from across TRB.
 - Consider proposing a formal peer exchange or joint mid-year meeting around an AED30 DEI theme.
 - Consider developing a primer / white paper identifying key equity issues impacting information systems and technology in transportation.
 - Identify opportunities to improve the diversity and inclusion of the AED30 committee membership and friend participation.

Goal #4: TRB Annual Meetings

Active participation in the TRB Annual Meeting through the paper review process and event planning is a cornerstone activity of the committee and provides opportunities engagement and collaboration by members and friends.

- Committee Meetings – **January**
 - Finalize the annual Committee Action Plan - Chair
 - Report from the Young Member Liaison
 - Report from the Research Coordinator
 - Report from the Research Subcommittees
 - Report from the DEI Task Force
 - Report from the Communications Coordinator
 - Round Table / Lightning Talk Presentations
 - Special topics for the given year
- Workshop Proposals
 - Select a proposal topic and lead in **March**
 - Proposals are due to the Section on **June 1**
 - Event details (if accepted) are due to TRB on **October 1**
- Paper Reviews and Committee Call for Papers - **May**
 - Develop Call for Papers through the research subcommittees
 - i. Limit to 1 or 2 calls per year in order to manage the paper review process
 - ii. Publish on AED30.org and work with AED00 Section
 - Paper Reviews – **September**
- Lectern Sessions
 - Select a theme / format and lead in **March**
 - Events details are due to TRB on **October 1**

- **Poster Session**
 - Typically based on the Paper Review process, led by the Paper Review Coordinator
 - Event details are due to TRB on **October 1**

Goal #5: Mid-Year Meetings

Mid-year meetings provide an important opportunity to advance committee research and peer exchange objectives outside of the time-constrained format of the Annual Meeting. Joint meetings with peer committees and external organizations are especially effective for exchanging best practices, research findings and ideas among researchers and practitioners.

- **Committee Meetings**
 - Quarterly Committee Meetings - Chair
 - i. Spring Web Conference Call – **March**
 - ii. Summer Web Conference Call – **July**
 - iii. Fall Web Conference Call – **November**
 - May combine meetings with peer exchange events
 - i. For in-person events, provide a hybrid format to maximize access and participation
- **Peer Exchanges**
 - Joint TRB AED30 / AASHTO CDMA CIO Meeting, San Diego, **April 4-6, 2022**
 - Consider additional joint mid-year meetings with other TRB committees and/or external organizations for 2023 and 2024
 - i. Planning should begin in Fall of the previous year

Goal #6: TRB Webinars

The TRB webinar series provides an effective tool to advance research needs development and peer exchange activities outside of the Annual Meeting. They also provide valuable opportunities to expand member and friend participation in committee activities.

- The Committee should strive to propose one webinar topic per year through its research subcommittees and DEI task force or as a stand-alone working group at the committee level
- TRB Webinar Proposal Submission Deadlines
 - **Mid-March**
 - **Mid-July**
 - **Mid-November**
- Potential topics
 - Innovation in Technology Procurement
 - Data Accessibility
 - DEI Topics in Information Systems and Technology

Goal #7: Research

Engage a diverse mix of researchers, transportation agency staff, and industry leaders to identify critical research questions, develop research agendas, issue calls for papers, and pursue avenues for advancing research projects.

- NCHRP Project Proposals
 - Each subcommittee should strive to advance one or more NCRHP project proposals by the end of the 2022 -2024 triennial term
 - Key NCHRP deadlines

- i. NCHRP 20-05 Synthesis Topics – **Mid-February**
 - ii. NCHRP Problem Statements – **Early-November**
 - iii. NCHRP Domestic Scan Topics – **Mid-November**
 - iv. Implementation Support - **Rolling**
- NCHRP Problem Statements and Domestic Scan proposals are typically multi-year undertakings. Synthesis Topics are less involved, however since they are due at the start of the year, planning should start in the prior year. Successful Synthesis Topics may also lead to future Problem Statement or Domestic Scan proposals. Partnering with peer AASHTO committees is essential for a successful NCHRP proposal.
 - i. **2022** – Research statement development
 - 1. Identify 2 or 3 research topics for potential development
 - 2. Identify target NCHRP programs for each topic
 - ii. **2023** – Gather stakeholder feedback and support
 - 1. Work through Committee liaisons to AASHTO and state agencies
 - 2. Select a leading research topic to move forward
 - iii. **2024** – Develop and submit NCHRP project proposal
 - 1. This can be done directly at the subcommittee level or with the support of the CRC
- For subcommittees that may be more peer exchange oriented, working with the CRC to advance NCHRP topics or developing webinars and/or white papers to disseminate research needs and best practices would be a suitable alternative.
- Research Task Force - CRC
 - **2022**
 - i. Develop a tracking mechanism for committee and subcommittee Research Needs Statements and post to the AED30.org website.
 - ii. Develop a tracking mechanism for NCHRP programs and deadlines and post to the AED30.org website.
 - iii. Advance one or more topics from each subcommittee for a peer-exchange at the AED00 Section level.
 - **2022 - 2024**
 - i. Schedule one or more virtual mid-year peer exchange meetings each year to discuss research needs and objectives for the Committee.
 - ii. Coordinate with the Research Subcommittee chairs to track and prioritize Research Needs Statements and to support NCHRP activities at the subcommittee level.
 - iii. Identify or establish working groups to advance NCHRP project proposals for subcommittees that need additional support or for topics that may not fit into an existing subcommittee
 - iv. Participate in the AED30 Data and Data Science Section Research Subcommittee.
 - **2023 - 2024**
 - i. Lead a review of the next version of the TRB Critical Issues in Transportation document and develop a primer / white paper identifying key issues for AED30.
- Research Subcommittees
 - **2022 – 2024**
 - i. Coordinate with the CRC to track and prioritize Research Needs Statements and NCHRP activities.
 - ii. Schedule one or more virtual mid-year meetings each year for subcommittee planning and to advance the research and peer exchange objectives of the subcommittee during the year.

- iii. Develop and maintain an active section for each subcommittee on the AED30.org website. For co-sponsored subcommittees, this could include basic information about the subcommittee with links to the primary subcommittee website.

Goal #8: Communications

Keep committee members and friends informed about committee activities and opportunities for participation.

- Update and maintain the AED30.org website
 - **2022 – 2024**
 - i. Redesign the AED30.org website to improve access to key research areas and general Committee information
 - ii. Upload Committee meeting agendas, notes, and presentations within a month of the meeting or event
 - iii. Provide templates and login credentials to the subcommittees and task force chairs to maintain content
 - iv. Actively promote the AED30.org website as the primary tool for AED30 information dissemination

Goal #9: Collaboration

Work with other TRB committees and task forces on cross cutting issues to provide a broad perspective, avoid duplicative efforts and maximize involvement of interested parties.

- **2022 – 2024**
 - Enhance collaboration around IT / TSMO topics (AHB10)
 - Enhance collaboration around DEI and Native American topics (AME10, AME30)
 - Coordinate with the AED00 Section to identify critical and emerging data and technology issues that are cross-cutting with our peer Committees.
 - Maintain an active list of committee liaisons

Part 4.3: Committee Longer Term Plan

This is an area where a committee plan could have a longer-term focused statement of where the committee wants to go and how to get there beyond the next TSP cycle, including the development and encouragement of young leaders and young committee members, and the continued inclusion of committee members from international and demographically underrepresented groups who are professionally engaged in the committee's fields of expertise and focus. This committee plan could also look at ways to tackle longer term TRB critical issues and look for areas of collaboration with other committees and concerns.

Advances in data and technology are exerting a rapid and profound transformation across the entire transportation domain, presenting important challenges for transportation agencies to deliver a safe, efficient, and cost-effective transportation system. The breadth and scale of change will also impact areas traditionally outside of information technology concerns, such as equity and sustainability. Longer term planning for AED30 is organized around five key principles, oriented towards identifying emerging trends and their impact to cross-cutting critical issues.

1. Member Involvement

Maintaining an active and demographically diverse body of members and friends from a cross section of industry, academia, and government is critical to inform committee activities and research directions. Recruitment towards that end is an ongoing process that should start well ahead of the three-year committee rotation through mentoring, active participation of members and friends in event planning and the paper review process, and membership transition planning.

2. Diversity, Equity, and Inclusion

Whereas innovation in advanced computing and technology holds great promise to transform and improve access to a safe and efficient transportation system, there are corresponding risks to the extent that modernization is applied unequally across society. Incorporating the principles of diversity, equity, and inclusion into all aspects of AED30 research, leadership, and event planning will help counter those risks. AED30 recognizes that a balanced research and leadership program starts with a diverse and inclusive environment to share ideas. This is a long-term effort that will continue into the 2025 membership rotation.

3. Collaboration

Gathering feedback, sharing best practices, and reaching out to non-traditional stakeholders will be an increasingly critical activity to provide timely and relevant research and strategic leadership for TRB. An important consideration will be the implementation of regular “data and technology future outlook” exercises to guide committee research and leadership activities, e.g., as part of the Annual Meeting or through formal peer exchange events.

4. Research

This triennial plan has set an ambitious goal for AED30 to revitalize its Research Needs Statements tracking and for each subcommittee to develop and submit a corresponding NCHRP project proposal. Getting started is the most difficult part of the process. The longer term vision is to develop a pipeline of research needs and NCHRP project proposal experience by the end of the 2022-2024 term, in order to carry that momentum into the next triennial.

5. Communications

Maintaining an effective platform for timely and accessible communications to committee members, friends, and stakeholders is critical for committee engagement and to maximize the value of committee developed products. The AED30.org website will likely serve as the primary vehicle for committee communication during and beyond this triennial period, but it will need significant redesign and upkeep to support those needs.

The Appendices are still very tentative. The concept is that this is where most of the usual data supplied by TRB staff would belong.

Appendix A

NOTE: We have provided much of the information you need for boxes 2.2, 2.4, and 2.7 below and in attachments A, B, and C. We ask that you provide the remaining information.

A.1

Year	2018	2019	2020	2021
Number of Members in Attendance at Annual Meeting				
Number of Visitors in Attendance at Annual Meeting				
Number of Papers Reviewed				
Total Number in Attendance at Mid-Year Meeting			N/A	

A.2

Sessions and workshops sponsored/cosponsored at the Mid-Year meeting, including name of co-sponsoring committee(s) if applicable (by year):

NOTE: Sessions and workshops sponsored/cosponsored at the Annual Meeting are listed in attachment A. **List** below all sessions and workshops sponsored/cosponsored at Mid-Year meeting, including name of co-sponsoring committee(s) if applicable (by year).

Given the emphasis on ensuring that Annual Meeting Workshops are truly workshops with meaningful interactions among participants, descriptions of past workshops should include information about the types of “take aways” or learning opportunities that the workshop made available for participants.

A.3

Provide title(s) and presenter(s) for informal presentations made at Annual Meeting and Mid-Year Committee meetings (by year), including informal presentations at meetings of sponsored subcommittees:

A.4

Membership Make-up: Please see Attachment C provided by TRB for summary details.

NOTE: Comment on demographics, balance or lack of balance of membership. Provide an action plan to address any deficiencies. See attachment C for summary details.

Appendix B – Additional Committee Work

B.2

Briefly Discuss the Committee's Performance of the following:

- How the activities identified correlate back to the previous TSP 3-year goals
- How the activities of this committee during the previous 3-year cycle have accomplished work towards the emerging, critical, TRB Critical Issues and align with the TRB Executive Strategic Plan
- Whether some of the critical and emerging topic areas have changed or been altered during this time period

The previous three years have been characterized by several key factors:

- *Innovation in Transportation Data and Technology.* Rapid changes in computing and technology are continuing to have a broad and profound impact on all aspects of transportation. To that extent, the core set of technologies, applications, concerns, and trends in Section 4.1 has been updated to reflect current critical and emerging issues. This list reflects both continuity and change, as existing concerns, such as data governance and an ever-expanding universe of data from multiple sources, continue to occupy Committee attention, while making way for new and/or evolving topics such as technology governance, information and operational technology convergence, artificial intelligence and machine learning, and equity considerations in Information Technology.
- *Diversity, Equity, and Inclusion.* Although DE&I needs are noted in the prior TSP, the recognition of this important topic has progressed significantly since 2019, in accordance with guidance and coordinating efforts from TRB and the AED00 Section, and now has a significant role in the strategic planning of AED30 for 2022-2024. This topic has also generated increasingly strong support and volunteer commitment from AED30 members and friends.
- *TRB Technical Activities Council Restructuring.* The 2020 TAC standing committee restructuring retained the AED30 Information Systems and Technology Committee (formerly ABJ50) along with its existing scope and membership roster. However, the restructuring afforded an opportunity to begin re-thinking how to strategically plan committee objectives and collaboration with other TRB committees. Two new subcommittees were also established to help formally advance longstanding critical and cross-cutting research needs (cybersecurity, data and technology governance). These activities largely build upon the prior TSP 3-year goals to continuously reflect upon and update the AED30 Committee's organizational effectiveness.
- *Covid-19 Pandemic.* Although the AED30 Committee quickly learned to take advantage of improvements in virtual meeting technology, which is one positive aspect of the pandemic, the extent and duration of the pandemic presented a number of challenges from limited attendance at the 2022 Annual Meeting, difficulties ensuring commitments from presenters and volunteers, and a general reduced capacity by Committee members and friends to advance Committee initiatives. Nevertheless, the Committee paper review process continued to serve as a leading success story for the Committee and the 2021 combined mid-year meeting with AED10 and AED40 accomplished prior-TSP goals of

hosting informative mid-year meetings and collaborating with peer committees on cross-cutting issues.