

## TRIENNIAL STRATEGIC PLAN (TSP)

**Evaluation Period: February 1, 2017 to January 31, 2020**

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

### PART 1: Committee Name and Scope

Committee Code *	AFH15
Committee Name *	Standing Committee on Project Delivery Methods
- Date(s) reviewed	January 10, 2017
- Change, if proposed***	
- No. of official members approving change/total number of members **	
Committee Scope *	The committee is concerned with existing and emerging project delivery methods for all modes of transportation. Methods include, but are not limited to, design-build, construction manager/general contractor, public private partnerships and other innovative practices. Specific attention will be given to benchmarking best practices, lessons learned, and identification of research needs for future improvements to these methods. Implementation strategies will be considered as a key component of all committee activities.
- Date(s) reviewed	January 10, 2017
- Change, if proposed ***	
- No. of official members approving change/total number of members **	

\* 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 Accomplishments

#### 2.1

Year	2017	2018	2019	2020
Number of Members in Attendance at Annual Meeting		23	26	24
Number of Visitors in Attendance at Annual Meeting		41	61	52
Number of Papers Reviewed		8	14	12
Total Number in Attendance at Mid-Year Meeting				

#### 2.2

Sessions and workshops sponsored/cosponsored at the Mid-Year meeting, including name of co-sponsoring committee(s) if applicable (by year):
<b>TRB Annual Meeting</b>
<b>2018</b>

Published Meeting - Committee	Project Delivery Methods Committee
Poster Session	Trends in Emerging Project Delivery Methods and Techniques
Lectern Session	Alternative Technical Concepts: Implementation Success Stories
Lectern Session	Alternative Project Delivery for Small Projects
Unpublished Meeting	Project Delivery Theme Issue of TR News
<b>2019</b>	
Published Meeting - Committee	Project Delivery Methods Committee
Poster Session	Project Delivery Methods: Trends and Benchmarks
Lectern Session	Progressive Design Build (DB): An Attractive Variation on the DB Process
Workshop	Integrated Team Building for Alternative Project Delivery
Lectern Session	Contract Negotiations in Alternative Delivery Projects
<b>2020</b>	
Lectern Session	The Impact of Alternative Project Delivery on Institutional Practices Throughout Public Transportation Agencies: Rethinking the Risk Profiles of Alternative Delivery
Published Meeting - Committee	Project Delivery Methods Committee
Workshop	Lessons Learned from 100 Years of Project Delivery
Lectern Session	Aligning DOT Resources to Achieve Effective Long-Term Asset Management and Operation Contracts
Poster Session	Advancements in Alternative Project Delivery
<b>TRB Mid-Year Meeting</b> N/A	

**2.3**

<p><b>Provide</b> title(s) and presenter(s) for informal presentations made at Annual Meeting and Mid-Year Committee meetings (by year):</p> <p style="text-align: center;"><b>TRB Annual Meeting</b> <b>2018</b></p> <ul style="list-style-type: none"> <li>• U.S.DOT work on DB long-term performance impacts on pavements- Mounir El Asmar</li> <li>• Regina Bypass Project Summary- David Brown</li> <li>• Quantification of Cost, Benefits and Risk Associated with Project Delivery Methods and Project Performance - Keith Molenaar</li> </ul> <p style="text-align: center;"><b>2019</b></p> <ul style="list-style-type: none"> <li>• Progressive P3 Projects – Nancy Smith.</li> <li>• NCHRP 08-112 ATC Guidebook – Doug Gransberg.</li> </ul>
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- NCHRP 08-104 Contract Admin – Keith Molenaar.
- NCHRP Synthesis 49-02 Emerging Technology – Chris Harper.

**2020**

- NCHRP 25-25 Task 109: Successful Practices for Environmental Commitments in Public/Private Partnerships (P-3) and Design-Build (D-B) Contracts – Adrienne Heller
- FHWA ACM Tools Project – Dan D’Angelo
- Defining the Difference between CMAR and CMGC – Doug Gransberg

**TRB Mid-Year Meeting**

**Note:** Committee held virtual mid-year meetings in each of these years but did not participate at the national level.

**2018**

N/A

**2019**

N/A

**2020**

N/A

**2.4**

**Provide** titles of new research need statements (RNS) posted in TRB’s RNS database (by year):

**2018**

- Pre-Construction Phase Administration Guidebook for Construction Manager/General Contractor (CM/GC) Transportation Projects
- Guidebook for P3 Projects’ Arrangements and Performance Metrics
- Guidebook on Progressive Design-Build for Transportation Projects: Project Selection through Contract Execution
- A Guidebook for Multiple-Award IDIQ Contracting as a Means to Increase Price Competition
- Guidebook for IDIQ Contracting for Architect/Engineer (A/E), Professional Services, and Research
- A Critical Analysis of IDIQ Award and Work Order Pricing Procedures.
- Framework for Determining Agency Costs of Various Delivery Methods

**2019**

- Guidebook for Implementing Constructability across the Entire Project Development Process: NEPA to Final Design.

**2020**

- Pre-construction administration guidebook for Multi-modal projects delivered using alternative methods.

**2.5**

**Provide** title(s) of RNS submitted for funding consideration:

**2018**

<p><b>RNS funded:</b></p> <ul style="list-style-type: none"> <li>• NCHRP Project 18-107: Guidebook for Implementing Constructability across the Entire Project Development Process: NEPA to Final Design</li> <li>• NCHRP 08-144: Systematic Approach for Estimating Construction Contract Time: A Guidebook</li> <li>• NCHRP 19-15: Guidebook for Effective Policies and Practices for Managing Surface Transportation Debt</li> </ul> <p><b>RNS submitted for funding:</b></p> <ul style="list-style-type: none"> <li>• Quantify the Costs and Benefits of Construction Contract Insurance Requirements – Wyoming DOT</li> <li>• Streamlining the Data Management Process - Utah DOT</li> <li>• Guidebook for Risk-based Construction Inspection – Ohio DOT</li> </ul> <p style="text-align: center;"><b>2019</b></p> <p><b>RNS funded:</b></p> <ul style="list-style-type: none"> <li>• None</li> </ul> <p><b>RNS submitted for funding:</b></p> <ul style="list-style-type: none"> <li>• Guidebook for Implementing Alternative Technical Concepts into All Types of Project Delivery Method.</li> <li>• Guidebook for Implementing Constructability across the Entire Project Development Process.</li> </ul> <p style="text-align: center;"><b>2020</b></p> <p><b>RNS funded:</b></p> <ul style="list-style-type: none"> <li>• ACRP 01-45: Selecting, Procuring, and Implementing Airport Capital Project Delivery Methods</li> </ul> <p><b>RNS submitted for funding:</b></p> <ul style="list-style-type: none"> <li>• Guidebook on Performance Metrics for P3 Projects.</li> <li>• Guidebook for Progressive Design-Build Contracting</li> <li>• Pre-construction administration guidebook</li> </ul>
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**2.6**

<p><b>Provide</b> titles of synthesis topics submitted (by year):</p> <p style="text-align: center;"><b>2018</b></p> <p><b>Synthesis topics funded:</b></p> <ul style="list-style-type: none"> <li>• NCHRP 48-04 “Staffing for Alternative Contracting Methods”</li> <li>• ACRP S01-13 “Attracting Investment at General Aviation Airports Through Public-Private Partnerships and Leasing”</li> </ul> <p><b>Synthesis topics submitted:</b></p> <ul style="list-style-type: none"> <li>• Risk Profile of Administrative Practices and Procedures for ACM projects – GDOT.</li> <li>• Alternative Delivery Approaches and Organizational Conflicts of Interest</li> <li>• Risk “Opportunities” in Projects Delivered Using Alternative Contracting Methods.</li> </ul> <p style="text-align: center;"><b>2019</b></p> <p><b>Synthesis topics funded:</b></p> <ul style="list-style-type: none"> <li>• NCHRP 49-13: Leveraging Private Capital for Infrastructure Renewal</li> <li>• ACRP S01-18: Value, Benefits, and Limitations of Qualifications Based Selection (QBS) for Airport Project Delivery</li> </ul>
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<p><b>Synthesis topics submitted:</b></p> <ul style="list-style-type: none"> <li>• Small Projects: Guide for Alternative Contracting Methods for Projects Less than \$5M</li> <li>• Use of lean construction principles in ACM projects</li> <li>• Maximizing Competition Using Stipends</li> <li>• Management of Organizational Conflict in Alternative Project Delivery</li> <li>• Enhanced Asset Management Opportunities to Optimize Lifecycle Costs Using APD</li> </ul> <p style="text-align: center;"><b>2020</b></p> <p><b>Synthesis topics funded:</b></p> <ul style="list-style-type: none"> <li>• NCHRP 51-19: Performance Metrics for P3 Projects</li> </ul> <p><b>Synthesis topics submitted:</b></p> <ul style="list-style-type: none"> <li>• Public Private Partnerships (P3) and/or Design-Build-Finance (DBF): A Synthesis of Practice as a Step Towards Applicability on Smaller Scale Projects in ACM</li> </ul>
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2.7

<p>Membership Make-up: Please see Attachment C provided by TRB for summary details.</p> <p style="text-align: center;">Committee Members on January 4, 2020</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>U.S. Members</td> <td>32</td> </tr> <tr> <td>Non-US Members</td> <td>4</td> </tr> <tr> <td>Minority</td> <td>12</td> </tr> <tr> <td>Female</td> <td>7</td> </tr> <tr> <td><b>Room for more Members</b></td> <td>none</td> </tr> </table> <p style="text-align: center;">Membership Make-up:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <th>Northwest</th> <th>Southwest</th> <th>Central</th> <th>Northeast</th> <th>Southeast</th> <th>International</th> </tr> <tr> <td>2</td> <td>12</td> <td>4</td> <td>7</td> <td>7</td> <td>4</td> </tr> </table> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <th>International</th> <th>Emeritus</th> <th>Young</th> <th>Main</th> <th>DOT</th> </tr> <tr> <td>4</td> <td>1</td> <td>4</td> <td>25</td> <td>2</td> </tr> </table> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <th>Federal</th> <th>State</th> <th>Academia</th> <th>Industry</th> <th>Consultant</th> <th>Local</th> <th>Other</th> </tr> <tr> <td>0</td> <td>5</td> <td>8</td> <td>2</td> <td>18</td> <td>1</td> <td>2</td> </tr> </table> <p style="text-align: center;">Committee will recruit a federal member.</p>							U.S. Members	32	Non-US Members	4	Minority	12	Female	7	<b>Room for more Members</b>	none	Northwest	Southwest	Central	Northeast	Southeast	International	2	12	4	7	7	4	International	Emeritus	Young	Main	DOT	4	1	4	25	2	Federal	State	Academia	Industry	Consultant	Local	Other	0	5	8	2	18	1	2
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**2.8**

Provide any of the following:

- Any special publications, such as TR circular, and conference proceedings.
- Sponsored or co-sponsored specialty conferences, symposia, workshops, webinars or other joint efforts with other TRB committees, other TRB entities, or other organizations (i.e. AASHTO, FHWA, State DOTs, ASTM, ASCE, and/or other modes of transportation)
  
- Sponsored *TRNews* July 2018 Issue on Alternative Project Delivery
- Provided Research Pays Off articles to *TRNews* on Alternative technical concepts and CMGC
- Added rail transit and airport members to committee
- Provided research presentations to AASHTO COC and COD to stimulate dialog on what gaps need to be filled with project delivery/ procurement research.
- Provided representatives to AASHTO COC research task group to assist in the development of research problem statements.
- Provided alternative delivery training to ARTBA
- TRB Webinars on Design-Build Geotechnical Risk Management and ATCs.

### **PART 3: Committee Future Outlook Statement and Committee Three-Year Plan (Limit 1,500 words total)**

#### **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:*

- A. 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);

The critical issues identified can be organized in three categories: (1) General continuing evolution of Alternate Delivery Methods; (2) Quantifying cost, schedule, and scope risk in alternative project delivery; and (3) Identifying the gaps in the P3 body of knowledge and barriers to implementation.

1. Promote the continuing evolution of Alternate Project Delivery Methods (APDM), including Design-Build, CM/GC, P3, IDIQ, variations of them, and others such as Alliancing that may emerge.
  - Encourage formal implementation of research: Training and technology transfer. A greater focus on deployment of research is needed, as well as a process for handing off promising initiatives to other partners with the ability to deploy them (e.g. AASHTO, FHWA, AGC, ARTBA, ACEC, etc.). More synchronization is also needed with Every Day Counts, AASHTO TIG (Technology Implementation Group), etc. In fact, the DBIA owner survey of state DOTs states the need for post award training.
  - One particular focus area is the education of the executives who will lead alternative delivery and push it forward. Examples include studying and providing ROI for various delivery methods and execution approaches, how much savings are expected, and making the executive business case for it. E-construction did it; can we do something similar for alternative delivery? Along with that, targeted training is needed: APDM education for legal and accounting departments, contracting officer, lawyer, etc., not just for field personnel and PM.
  - Look upstream and downstream for greater integration with pre-construction project delivery/management and making better handoff to operations. How the team creates and prepares a handoff with operations is critical to integrate with downstream, to link with asset management. Instead of being project focused, the focus will be on the facility. Learning from DBFOM, it may be critical to bring operations representative to serve as part of the design process.
  - Wrap in considerations of post-award guidance and performance tools for executing and managing project delivery (i.e. Get beyond our focus on contracting and into execution and performance in delivery).
  - Contract administration systems for APDM: Studying retainage percentages and their impact (e.g. carrying costs go up etc.), performance bonds, liquidated damages on alternative delivery projects, etc.
  - What are management models leading to best practices in Alternative Delivery? And are there evolving problems/issues with administering alternative delivery contracts?

- Emerging new potential Methods such as Progressive Design-Build, Integrated Project Delivery and Alliance Contracting
  - Efficiency elements of alternate project delivery
  - Transportation Agency acceptance and flexibility of many elements under the ADM umbrella
  - Training and education of both public and private entities involved with these delivery types
  - Legislative restrictions preventing implementation and/or modification of ADMs
  - Proof of Concept for specific elements to ensure the protection of the public good from financial, design, and construction viewpoints as traditional services performed by transportation agencies are shifted to the private sector.
2. Quantifying cost, schedule, and scope risk in alternative project delivery.
- Managing risk will continue to be high on the radar of DOTs and partners in project delivery.
  - The increase of the number of mega-projects delivered using APDMs is fueling a paradigm shift in agency decision-making criteria that places more emphasis on cost, schedule, and scope certainty from the traditional “better, faster, cheaper” paradigm used in DBB. As such, the industry needs data-driven tools to quantify risk and make decisions in an environment of imperfect information.
  - Benchmarking post-construction performance to pre-award risk profiles will provide a basis from which research can develop reliable performance metrics and a better understanding what brings the best value to the taxpayers. A comparative analysis of the current risk profiles found in the contracts for DBB, CMGC, DB and P3 (DBF, DBFOM) would add much needed knowledge to inform agencies’ decisions.
  - Correlation of equity to project performance, and correlation between financial/technical scores and project performance, will be needed. In fact, a new definition of project performance may be needed since the focus under these methods is on the lifecycle of the facility as opposed to the initial cost. The main point is: do the APDMs meet the objectives of the public sponsor? E.g., what they said they would do, versus what they actually delivered.
  - Retrospective longitudinal studies on mega-project delivered by each APDM may be needed to better understand the differences and performance expectations, and to benchmark metrics such as time to financial close and ROI on the long term, etc.
  - The issue of life cycle decisions and life cycle benefits will be important. Under this new system, what are the value and cost of P3, and how is Value of Money compared across various projects? Lifecycle considerations in delivery methods are leading to a broader consideration of methods for delivery, including DBFOM or DBFM
  - One key area is the O&M costs of P3 vs. Non-P3 projects; including the risk versus cost of deferred maintenance, the cost and length of procurement for the public sector, how private money can be used to help with maintenance issues, etc.
  - What are the limitations and challenges of payment structures? How are availability payments are accounted for, and their relation (or lack thereof) with maintenance and facility performance?
  - There may be opportunities for incentives to encourage alternative contracting (i.e. special funding at the federal level). Along the same lines, there may be ways to effectively expedite APDM procurements for simpler projects and financing.
3. Gaps in Body of Knowledge and Barriers to Implementation
- Progressive design-build where the design-builder is selected on qualifications alone and the contract amount is negotiated in much the same manner as CMGC provides an attractive



- means to reduce the costs of contingencies buried in lump sum DB contracts. No guidance exists on this delivery method and is needed to provide the necessary foundational knowledge to assist agencies in drafting enabling legislation as well as to implement PDB for those agencies where current legislation would permit PDB.
- One issue with APDM is the existence of legislative barriers that vary across different states. An evaluation of these barriers and possible solutions may be needed.
  - APDM have largely been reserved for the delivery of large, complex projects and not considered as viable alternatives for typical DOT projects where the average value is less than \$5 million. APDM has been used successfully on small project in a number of states with great success. Thus, retrospective analysis of this topic is needed to publicize their success and make the business case for considering APDM as valuable tool on all sizes of projects.
- B. Identification of emerging, critical, and cross-cutting issues **outside the committee scope** that provide opportunities for liaison and collaborative efforts (these issues could also come from a wide range of sources). Alternative Project Delivery forces a unique blend of transportation disciplines running the full gamut of project development from initial planning and into operations. Key cross-cutting elements needing further work include:
- IT in delivery: Partner with the IT in construction subcommittee to consider the effectiveness and productivity gains through automation using digital/virtual approaches and technologies. Also, look into other e-Construction tools for delivering alternative projects more effectively. The industry as a whole is still trying to understand how to leverage technologies to aid in alternative delivery projects, as well as effectively transferring research to industry.
  - The financing aspects of DBF and DBFOM: Connecting with the P3 subcommittee of the finance committee of TRB, to focus on financing aspects of DBF and DBFOM. There may be greater distrust of legislators on the P3 financing angle. Therefore, research and information are needed to show real data and inform decisions.
  - Automated Vehicles: What is the impact of technology on P3 projects, and how can P3 help/react to connected vehicle technologies?
  - Environmental permitting processes that allow permits to be obtained without full final designs;
  - Flexibility in right of way acquisition and utility relocation processes;
  - Risk assessments and payment mechanisms to ensure an appropriate balance;
  - Legal considerations including enabling legislative issues in addition to specific discipline needs such as flexibility to right of way acquisition allowances;
  - Insurance requirements and new emerging products;
  - Bonding requirements that form barriers for entry of small business into APDM projects.
  - Privatization of traditional transportation maintenance related services and creating the proper business case for further utilization in the US;
  - Financial tools that continue the evolution of flexibility to assist with financing APDM projects;
  - Performance measure criteria ensuring appropriate measures that balances cost efficiency and customer service;
  - True Performance Based Specifications and associate key performance metrics for use in P3 projects and other related ADMs.
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**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 emerging, critical, and cross-cutting issues identified above;*

- A. AFH15 sees the emergence of private financing continuing to be a major development in our area of research and as such we have recruited and intend to retain members that are national and international leaders in the P3 infrastructure arena. We have also added two DOT members that have implemented P3 and can provide the agency insight for the type of research will add value to the DOT P3 program.
- B. AFH15 adopted *Quantifying Cost, Schedule, and Scope Certainty in Alternative Delivery* as its research theme for the coming three years. The decision was made due to the recent lack of success on obtaining funding for RNS that have been related to the mechanics of APDMs. A working group made up of the committee's DOT members and past DOT members and others provided analysis that led to the decision based on current and future needs in this topic area.
- C. The rotation provided an opportunity to add additional young and DOT members. The committee will start a best poster award at TRB 2021 to encourage young member participation. We have recruited two new members from the contracting community to better represent that constituency as research on integrated project delivery continues to grow.
- D. The committee will continue its decade long close association with the AASHTO Committee on Construction and Committee on Design. Past efforts to provide technology transfer at their annual meetings will continue. Additionally, a webinar task group will be formed to manage the development of TRB, FHWA, and professional society webinars on completed research. Lastly, support will continue for the annual ARTBA Alternative Delivery Academy delivered by committee members over the past 6 years.
- E. The research task groups based on APDM type formed in 2017 will continue and consist of task groups Design-build, CMGC, P3, and IDIQ. Each task group has a DOT member leader, an academic who will act as the scribe, and a practitioner. Their charge is to develop RNSs and synthesis statements in their particular area and present them at the mid-year research meeting.

The remainder AFH15 short-term plans (next three years) are as follows:

- Focus on the dissemination and implementation of research findings so that practitioners get the full benefit of the research – Form a special task group to develop an E-circular on APDM effective practices.
- Define the research agenda for the *Quantifying Cost, Schedule, and Scope Certainty in Alternative Delivery* initiative. – Leaders of the APDM task groups will develop plan and present to committee at TRB 2021.
- Learn from other industries (e.g., software, aerospace), disciplines or sectors of construction (e.g., vertical construction) that also use variations of P3.
- Make the business case for alternative delivery by promoting research that has provided quantified benefits. Appoint a liaison to the AASHTO Construction Committee to identify performance data availability at the DOT level.
- Further investigate alternative delivery systems and their variations and components such as P3, Progressive DB IDIQ, and ATCs – Current APDM task groups
- Study specific P3 methods such as DBF and separate O&M concessions. P3 task group.
- It is critical to understand the long-term impact of alternative delivery on facility quality and lifecycle performance. Issues and performance impacts over the lifecycle of the facility will

- directly impact the timing and cost of maintenance and rehabilitation. – CRC to liaise with Maintenance Division to determine best angle to accomplish by TRB 2022
- Identify critical domestic scans appropriate for alternative project delivery Current APDM task groups
  - Identify research needs statements – CRC and current APDM task groups
  - Outreach to other committees to partner on topics, research, and sessions to share topics concerning project delivery methods
  - Cross training with other TRB committees to include lessons learned in committee business and activities
  - Develop liaisons to work other committees - Current APDM task groups
  - Develop and deliver TRB, FHWA, and AASHTO webinars on APDM topics. Communications coordinator to develop a list of potential webinars for mid-year committee meeting.
  - Contribute to and disseminate information from the FHWA Every Day Counts and Accelerating Innovation programs. Chair to coordinate with FHWA.

Long-term plans are as follows:

- The demands on managing an alternative delivery project may be different than traditional projects – thus our educational system, on the job training, research and mentoring needs to advance to assist in knowledge support to meet the demands of today for managing alternative delivery projects.
- Work force issues with regard to APDMs are not well defined and will be included as a secondary topic of interest in all future RNSs.
- Gain an understanding of how current DOT ADPM contract risk profiles impact the competition and costs from the construction contractor perspective.
- Develop products to help useful information to the industry and present these products to aid the industry in furthering project delivery methods
- Develop mechanisms or systems to solicit research ideas
- Stay in front of emerging technologies using case studies and sharing of information tools
- Cross-cutting goals to increase the interaction among committees, societies, and organizations, e.g., State DOTs
- Contribute to the FHWA web-based EDC ACM resource library.
- Show geographic locations of where states are actively using the different types of project delivery methods
- Facilitate a process to standardize the technical terminology associated with project delivery and encourage public agencies and other stakeholders to adopt the standard terminology.