**American Association of State Highway and Transportation Officials**

**Special Committee on Research and Innovation**

**FY2025 NCHRP PROBLEM STATEMENT INSTRUCTIONS**

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| **GENERAL GUIDANCE**   1. Follow the instructions in this document carefully when preparing your responses to each section in the problem statement template. 2. The filled out problem statement template **should not exceed 3** pages. 3. Submitters are encouraged, but not required, to vet or submit problem statements through an appropriate AASHTO Committee or Council. 4. While anyone can write or contribute to preparing a problem statement, **NCHRP only accepts problem statements from**:    1. **Employees of state DOTs**    2. **AASHTO staff on behalf of an AASHTO Committee or Council**    3. **Federal Highway Administration**    4. Problem statements received from any other source will not be considered. 5. **Problem statements are due by midnight EST, November 1, 2023 at** <https://survey.alchemer.com/s3/7440618/NCHRP-Problem-Statement-Submission-FY-2025>    1. Late submittals will not be accepted.    2. Only submit the filled out problem statement template; do not include these instructions.    3. Do not include any attachments along with the filled out problem statement template. 6. The AASHTO Special Committee on Research and Innovation (R&I) will select projects based on five key factors:    1. The potential research results are of national interest.    2. How well the research addresses critical needs and strategic objectives of AASHTO and the state DOTs.    3. The likelihood that the research objective can be successfully achieved within the constraints of the proposed time and funds.    4. The likelihood that the research will produce implementation-ready products.    5. The likelihood that the research will be implemented by state DOTs. 7. **A note on implementation:** NCHRP emphasizes implementation of its research results. We are asking problem statement submitters to focus on developing practical products that have a high probability of being implemented. If your problem statement is selected for the NCHRP, you may be asked to play a continuing role in supporting implementation efforts extending beyond the length of the research contract. 8. Questions on the process can be directed to **Waseem Dekelbab** at [wdekelbab@nas.edu](mailto:wdekelbab@nas.edu) |

**INSTRUCTIONS**

**Follow the below instructions carefully when preparing your responses to each section in the problem statement template.**

**1. PROBLEM TITLE**

* Communicate what the research is about, in as few words as possible.

**2.** **KEYWORDS/TERMS – up to 6**

Problem statements are distributed to subject matter experts in state DOTs, AASHTO, and FHWA for review and comment. Agency staff will use keywords/terms to help them direct problem statements to the appropriate reviewers.

* Avoid terms that are very broad, i.e., Engineering or Environmental
* Suggest keywords/terms that are specific to the technical discipline(s) most likely to be involved with the proposed research (e.g., Signal Timing or Wetlands).

**3. RESEARCH OBJECTIVE**

Prepare a concise objective statement (e.g. The objective of this research is…) describing:

1. The desired outcome(s) and expected final product(s), e.g., guidance or guidelines, a test method, equipment, a tool, specifications, a manual, a new or revised process, etc.
2. Major tasks or activities the research contractor will likely have to perform in order to successfully conduct the research.
   * Describe the tasks or activities in enough detail to demonstrate that the objective can be fully achieved and that the estimated funding is justified and sufficient.

**4. URGENCY AND POTENTIAL BENEFITS**

* Why solving this problem is important to a majority of state DOTs.
* What the consequences and/or negative impacts are of not conducting this research.
* Who will experience the benefits of implementing the results of this research, and what the benefits will be.

**5. BACKGROUND INFORMATION AND NEED FOR RESEARCH**

* Crisply describe the problem, and whom it affects
* How will the research solve the problem?
* How is this problem statement related to the strategic plan or research agenda of an AASHTO Committee(s) and/or Council(s)?

**6. LITERATURE SEARCH SUMMARY**

Describe how your proposed research differs from, or will build upon, the existing body of research found in a review of relevant literature (do not include the literature search results). If no search is performed, justify why it was not needed.

At a minimum, literature searches should be conducted on TRID ([http://trid.trb.org](http://trid.trb.org/)), which includes the Research in Progress database (<http://rip.trb.org/>). Please describe how your proposed research differs from, and will build upon, the existing body of research found in the literature search.

* An excellent resource on conducting literature searches is Transportation Research Circular E-C194: Literature Searches and Literature Reviews for Transportation Research Projects**,** available at <http://www.trb.org/Publications/Blurbs/172271.aspx>.
* If you are not comfortable conducting the search yourself, you can contact your local transportation library or the TRB Library ([trblibrary@nas.edu](mailto:trblibrary@nas.edu)) and ask them to conduct the search for you.

**7. LINK TO 2021-2026 AASHTO STRATEGIC PLAN**

In no more than 1 paragraph, describe how this research is aligned with the [2021-2026 AASHTO Strategic Plan](https://www.aashtoplan.com/)’s Goals and Objectives listed on page 5.

**8. IMPLEMENTATION CONSIDERATIONS AND SUPPORTERS**

* Who within a state DOT will likely be responsible for using the research results.
* How state DOTs can implement the research within their own organization and what major steps they would need to take.
* What existing venues or processes could be used to support implementation.
* What kinds of additional products and activities (for e.g. brochures, summaries, presentations, training workshops, peer exchanges, pilot testing, and verification and validation of the research results) will help create awareness and facilitate implementation of the research results.
* Provide an estimate of the time needed to engage in some level of communication and implementation activity.

Communication and Implementation Funding: Provide a separate estimate of the total funds needed to accomplish any initial activities designed to facilitate the communication and implementation of key research products.

Communication and Implementation Period: Provide an estimate of the time needed to complete the communication and implementation activities.

**9. RECOMMENDED RESEARCH FUNDING AND RESEARCH PERIOD**

Research Funding: Provide an estimate of the total funds needed to accomplish the research objective.

* Underfunded research is much less likely to produce implementable products. The present cost for research usually averages about $275,000 for 100 percent of a professional employee’s time per year. This figure represents a fully loaded, professional rate that would include an individual’s direct salary and benefits and an agency’s overhead or indirect costs. Average rates for supporting staff might be approximately one-half those of professionals.
* The requested funding must be enough to ensure adequate and timely data collection and analysis of original/field data if that is needed.
* The funding recommendation must also include other expenses required for the research such as purchase of materials, extensive physical testing, or computer modeling.

Note: If the problem statement is selected, the level of funding provided may be adjusted by the AASHTO R&I Committee.

Research Period: Provide an estimate of the time needed to complete the research.

Note: If the problem statement is selected, the research period may be adjusted by the project panel to allow for panel review of interim and final deliverables.

**10. PROBLEM STATEMENT AUTHOR(S)**

Anyone may author or contribute to an NCHRP problem statement and should be identified in this section.

* For each author, provide their name, affiliation, email address and phone.

**11.** **POTENTIAL PANEL MEMBERS**

List all individuals who could potentially serve on the panel for this problem statement.

* The name of the individual, their affiliation, email address and phone.
* Please consider recommending appropriate AASHTO Committee or Council members as potential panel members.

**12. PERSON SUBMITTING THE PROBLEM STATEMENT**

Provide contact information for the individual submitting this problem statement.

* Name of individual
* Phone number
* Email address
* Affiliation (is limited to): [state] DOT

FHWA [office]

AASHTO staff on behalf of the AASHTO Committee or Council