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

**Special Committee on Research and Innovation**

**FY2021 NCHRP PROBLEM STATEMENT OUTLINE**

***General guidance:***

* *The problem statement should not exceed* ***3*** *pages.*
* *Submitters are encouraged, but not required, to vet or submit problem statements through an appropriate AASHTO Committee or Council.*
* *While anyone can write or contribute to preparing a problem statement,* ***NCHRP only accepts problem statements from****:* 
  + ***Employees of state DOTs***
  + ***Officers of an AASHTO Committee or Council***
  + ***Federal Highway Administration***

*Problem statements received from any other source will not be considered.*

*The AASHTO Special Committee on Research and Innovation (R&I) will select projects based on five key factors:*

* *The potential research results are of national interest.*
* *How well the research addresses critical needs and strategic objectives of state DOTs.*
* *The likelihood that the research objective can be successfully achieved within the constraints of the proposed time and funds.*
* *The likelihood that the research will produce implementation-ready products.*
* *The likelihood that the research will be implemented by state DOTs.*

***Problem statements are due November 1, 20NN.***

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**1. Problem Title**

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

**2. Background**

* What is the problem, and whom does it affect?
* 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)?

**3. Literature Search Summary**

Describe how your proposed research differs from, or will build upon, the existing body of research found in a review1 of relevant literature (do not include the literature search results). If no search is performed, justify why it was not needed.

**4. 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).
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.
3. How the research results should be presented.
   * Possible forms include, but are not limited to, guidance or guidelines, a test method, equipment, a tool, specifications, a manual, a new or revised process, etc.

**5. Urgency and Potential Benefits**

Concisely explain:

* 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.

**6. Implementation Considerations and Supporters**

To aid the AASHTO R&I Committee in deciding whether to fund this project, describe:

* 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.

List the AASHTO Committee(s) and/or Council(s) – and any other organization – that might be interested in the research results and could help support implementation.

* Organization, contact person, phone number and email address

**7. Recommended Research Funding and Research Period**

Research Funding: Provide separate estimates of the total funds needed to accomplish (a) the research objective(s) and (b) any initial activities designed to facilitate the communication and implementation of key research products.

* Underfunded research is much less likely to produce implementable products. The present cost for research usually averages about $250,000 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.
* The funding recommendation must also include other expenses required for the research such as purchase of materials, extensive physical testing, or computer modelling.

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

Research Period: Provide separate estimates of the time needed to (a) complete the research and (b) to engage is some level of communication and implementation activity.

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.

**8. Problem Statement Author(s)**

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

* For each author: name, affiliation, phone number, and email address.

1. **Others Supporting the Problem Statement**

List organizations, including AASHTO Committees or Councils, which support this problem statement, and provide contact information.

* Organization, contact person, phone number and email address

1. **Potential Panel Members**

* Organization, contact person, phone number and email address

*If this problem statement is submitted by an AASHTO Committee or Council,* please recommend Committee or Council members as potential panel members.

* Member name, state, AASHTO Committee or Council, phone number and email address

**11. Person Submitting the Problem Statement**

Provide contact information for the individual submitting this problem statement.

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

FHWA [office]

AASHTO [Committee or Council]

AASHTO staff on behalf of the AASHTO [Committee or Council]

Please submit the problem statement by:

Midnight EST on November 1, 2019: [**http://bit.ly/NCHRPFY2021**](http://bit.ly/NCHRPFY2021)

Late submittals will not be accepted.

*Questions on the process can be directed to Lori Sundstrom at* [*lsundstrom@nas.edu*](mailto:lsundstrom@nas.edu?subject=NCHRP%20FY2019%20Problem%20Statement%20Submittal)

1 At a minimum, literature searches should be conducted on TRID (<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.