# INSTRUCTIONS:

***General Information and Guidance:***

* [*Problem Statements*](https://www.codot.gov/programs/research/problem-statement) *are welcome at any time, and are evaluated twice each year.* <https://www.codot.gov/programs/research/problem-statement>
* *Begin by reviewing the Problem Statement FAQ at* <https://www.codot.gov/programs/research/ProbStat>
* *Due to a limited research budget, not all submitted problem statements become research projects. Developing a well written problem statement that contains all the requested information will improve the chances of it being selected.*
* *The problem statement is not a grant application or contract document. Your problem statement may be shared with others in an open Request for Proposal (RFP).*
* *CDOT and ARIB reserve the right to select any researcher and/or start date to carry out research. However, if a public entity authors a research problem statement, the study panel will consider recommending the funding for that public entity first.*
* *The problem statement should not exceed* ***6*** *pages.*
* ***All problem statements require a CDOT staff champion.*** *Each author should identify and discuss their research problem with a CDOT Champion. However, if you do not know of a champion leave this as ‘unknown’ and we will place this in a location for CDOT staff to access it and volunteer accordingly.*

***Selection Criteria:***

*CDOT Applied Research & Innovation Branch (ARIB) in conjunction with various Research Oversight Teams (OT), and the Research & Implementation Council (RIC) will select projects based on key factors including:*

* *How well the research addresses critical needs and strategic objectives of CDOT.*
* *The potential research results are of statewide or regional interest.*
* *The likelihood that the research objective can be successfully achieved within the constraints time and available funds.*
* *The likelihood that the research will produce implementation-ready product(s) that can be used by CDOT.*

***If you need assistance or have questions please reach out to ARIB staff:***

* *Dr. Steve Cohn, Research Program Director, Steve.Cohn@state.co.us*
* *David Reeves, PE, Engineering, Maintenance & Operations Program Manager, David.Reeves@state.co.us*
* *Thien Tran, PE, Engineering & Structures Program Manager, Thien.Tran@state.co.us*
* *Bryan Roeder, Environmental & Planning Program Manager, Bryan.Roeder@state.co.us*
* *Sarah Zepeda, Research Librarian, Sarah.Zepeda@state.co.us*

***Problem Statement Submission:***

*Problem statements will be submitted through a Google Form and you will have a chance to upload this problem statement along with a simple 3-5 page presentation (pptx) file. Please complete this form and a presentation file prior to completing the Google Form.*

1. [*Problem Statement Form (https://drive.google.com/file/d/1wCP1CsrzpLJZmZEi6PbkJDZB\_gZ8eqRR)*](https://drive.google.com/file/d/1wCP1CsrzpLJZmZEi6PbkJDZB_gZ8eqRR/view?usp=sharing)*)*
2. [*PowerPoint Template*](https://drive.google.com/file/d/1xDNJUcLR2biNrBIZpquhUFsqOAY-f2-d/view?usp=sharing) *(*[*https://drive.google.com/file/d/1xDNJUcLR2biNrBIZpquhUFsqOAY-f2-d*](https://drive.google.com/file/d/1xDNJUcLR2biNrBIZpquhUFsqOAY-f2-d)*)*
3. ***FINAL STEP -*** [***Problem Statement Google Form***](https://forms.gle/LHfEqhAKdjCtfnf49) ***(***[***https://forms.gle/LHfEqhAKdjCtfnf49***](https://forms.gle/LHfEqhAKdjCtfnf49)**) *Please upload your completed files using this Google Form rather than emailing it to research staff as has been done in the past. Rename the file using this convention PSXX-[Short Name]-[Author] for example:***
	* ***PSXX-SPF for OnRamps-David Reeves-CDOT***
	* ***Note - We will assign an XX number after it is uploaded and reviewed***

# PROBLEM STATEMENT TITLE:

[*Name of proposed Research Study*]

# AUTHOR:

Name:

Organization:

Phone:

E-mail:

Date Submitted:

# SPONSOR: *(to be completed by research staff)*

[*CDOT Branch/Program Manager or Research and Implementation Council (RIC) member who is supporting the Research Study*]

# CHAMPION:

[*CDOT staff who will lead the research study team and have a major involvement in the study and implementation of the results. No Research Studies will be initiated without a CDOT staff champion.* *If you do not know of a champion leave this as ‘****unknown’*** *and we will place this Problem Statement in a location for CDOT staff to access it and volunteer accordingly. Ensure you have contacted the champion so that they are aware of your submittal.*]

# DESCRIPTION OF PROBLEM:

[*Brief description of the problem to be solved*]

# ABSTRACT:

[A concise description of study objectives, proposed research approach, etc.]

# HAVE YOU PERFORMED A LITERATURE SEARCH OR OTHERWISE INVESTIGATED EXISTING SOLUTIONS?

[*If yes, describe limitations of prior research that this project would address? If not, consider doing a literature search. The ARIB Library and Librarian are available to help!]*

# BENEFITS OF RESEARCH:

[*Describe the expected benefits of the research. Are there potential safety improvements, cost savings, efficiencies, improved processes, preparation for future technologies, or other benefits? When will they be realized? How can they be measured and tracked?*]

# ESTIMATED TIME TO COMPLETE RESEARCH:

[How long do you anticipate this research taking to perform.]

Time Estimate (total months):

Explanation of estimate:

# COST FOR RESEARCH:

[If estimates or information about costs is available, please provide brief itemized estimate.]

Itemized Cost Estimate:

# LEVERAGE/FEDERAL FUNDS:

[*Would others (states, local governments, federal, etc.) be interested in this research? Are there already funding partners? Should the researchers or CDOT pursue funding partners?*]

# RESEARCH IMPLEMENTATION PLAN:

[*Describe how the research findings may be used in the planning, design, construction, maintenance or operation, and safety improvement of Colorado’s transportation system. Identify training needs and use cases of products.*]

# CDOT AREA OF EMPHASIS:

*Areas of Emphasis are topical areas of special interest to CDOT. They are areas where:*

* *We believe focused research can result in substantial near-term and long-term benefits to Colorado.*
* *It is easy to answer the question, “Why is Colorado leading this research rather than other states?” This may be due to natural features of our state (terrain, climate, built environment, public sentiment, etc.), or because of strong, relevant research programs in Colorado’s universities, consulting firms, or national laboratories.*

*Over time, we intend to build research programs in these areas. To begin, we have identified two Areas of Emphasis and welcome Problem Statements in these as well as in our traditional subject areas.*

[If applicable, select the appropriate Area of Emphasis that best fits your problem statement]

|  | Mitigating Wildlife Vehicle Collisions and Improving Safe Wildlife Passage |
| --- | --- |
|  | Construction impacts on Air Quality |
|  | Post-Wildfires Effects - Debris Flow |

# SUBJECT AREAS:

[Select the subject area(s) that best fits your problem statement. Ideally one option is selected but on occasion a couple can be selected.]

|  | Aviation  |
| --- | --- |
|  | Bike & Pedestrian |
|  | Construction Management |
|  | Environmental |
|  | Geotechnical |
|  | Hydraulics |
|  | Maintenance & Operations |
|  | Pavement & Materials  |
|  | Planning |
|  | Policy |
|  | Structures |
|  | Transit & Rail |
|  | Traffic & Safety |
|  | Other - Please specify: |