

CALL FOR SUBMISSIONS (CFS)

CFS Number SUMMER2016DRISI

California Department of Transportation Division of Research, Innovation & System Information 2016-2017 Research Proposal Guidelines

A CONTRACT MAY OR MAY NOT BE AWARDED FROM THIS CFS.

The Division of Research, Innovation & System Information (DRISI) of the California Department of Transportation (Caltrans) is requesting research proposals from public research institutions: public colleges, universities, and government agencies that bring solutions to Caltrans' research problems. Respondents are encouraged to engage in collaborations with industrial and public agency partners, and to enhance the research and to facilitate communication of research results to those who deploy and operate transportation systems (technology transfer).

Private universities or institutions are not eligible participants under this Call For Submissions (CFS) process and direct submittals from these institutions cannot be accepted. Public institutions using subcontracts with private entities are subject to certain conditions and may not be eligible under this CFS process. Respondents who have concerns over their eligibility are encouraged to contact the DRISI representative identified below to determine their status prior to spending time and resources on a proposal.

All needs in this CFS are based on an Initial Scope of Work (ISOW) derived from a customer need. The CFS focuses on the application of solutions to meet Caltrans' mission to "*Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability.*" This research will specifically address the Caltrans goals.

DRISI is advertising a CFS with an ISOW (Refer to Page 12). Public institutions are invited to review and respond to this CFS Number SPRING2016DRISI, titled, "**California Department of Transportation, Division of Research, Innovation & System Information, 2016-2017 Research Proposal Guidelines.**" Please refer to the link below for access to electronic versions of the CFS document and ISOWs. Proposals must be submitted by **September 2, 2016 at 5:00 PM (PST)**. Proposals must be a fully developed bid, with a clear scope of work linked to timelines (in weeks, not specific dates), milestones, and deliverables. Each major category in the budget shall be fully supported within the bid.

<http://www.dot.ca.gov/research/cfs/index.htm>

Please see the schedule in the Proposal Submission/Evaluation Process section of the CFS. In submitting your documents, you must comply with the instructions found herein. Reference the attached CFS Initial Scope of Works for detailed information.

If you have questions, the contact person for this CFS is:

Yvonne Cooks

Division of Research, Innovation & System Information
California Department of Transportation
Email: yvonne.cooks@dot.ca.gov
Fax No.: 916.657.4721

All questions must be submitted on or before **August 17, 2016 at 5:00 PM (PST)**. Questions will be collected and responded to in a single public response made available via a public posting via the following internet site. All participants will be advised of the posting when it is available. All questions will be stripped of any identifying information traceable to the originating participant.

Responding parties shall submit their formal proposals and supporting documents in electronic format to:

Yvonne Cooks at yvonne.cooks@dot.ca.gov

In the event Caltrans elects to issue a contract for this work, the selected proposal(s) and supporting documents shall be made available to Caltrans in a Microsoft WORD (*.DOC) compatible format, in addition to an Adobe PDF compatible format. This will facilitate development and processing of the actual contract documents.

This CFS contains a preliminary representation of terms and conditions relating to the research ISOW included in this CFS. In the event a contract is awarded, the final terms and conditions may vary from this initial representation, depending upon the exact nature of the contractual arrangement between the parties.

Proposals must be received no later than **5:00 PM (PST)** on **September 2, 2016**.

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I. GENERAL BACKGROUND

The California Department of Transportation (Caltrans) is the manager of interregional transportation services; more specifically, Caltrans has the traditional role of owner and operator of the 15,000 mile State Highway System. Caltrans promotes California's economic vitality and enhances its citizens' quality of life by providing for the movement of people, goods, services and information. Caltrans is responsible for the delivery of the State's Transportation Improvement Program; planning, designing, building, operating and maintaining California's state highway systems. In addition to a changing mix of transportation modes (highways, rail, mass transit, bicycle, pedestrian, and aeronautics), Caltrans coordinates the solutions to complex issues such as land use, environmental standards, and the formation of partnerships between private industry and local, State and Federal agencies to promote productivity, reliability, safety, flexibility and performance in the State of California. For more information, access the following link: <http://www.dot.ca.gov/>

The Program Steering Committees (PSC) assists in developing the research portfolio and implementing research results. These stages of research and development are:

The functional Division Chiefs responsible for their areas of research interest lead the PSCs. Together, these Division Chiefs, with select District Deputy Directors, form the Research Deployment Advisory Committee (RDAC) and advise Caltrans on research topics of interest and recommended priorities. Senior staff from the responsible Divisions leads the TAPs. The TAP membership can also include technical experts from other Divisions, Districts and/or external agencies. Project Panels are formed for each project, consisting of the Project Manager (PM), Customer Representative (CR) and other members as selected by the PM in consultation with the CR. The responsible Project Panel and the responsible TAP have developed the enclosed ISOW(s), and the responsible Project Panels will review and select any resulting research proposal(s). The PSCs and Caltrans will make the final determination on which, if any, proposal(s) will become actual research projects. This system provides customer participation throughout the research process and customer ownership of research products.

II. RESEARCH NEEDS

Highlighted issues in this specific CFS are:

- Caltrans research needs are described in the ISOW included within this document.
- Respondents should clearly address one or more of the design challenges stated in the ISOW according to the prescribed deliverable format elements (9).
- Where appropriate, Caltrans staff will work with the proposal authors of selected proposals to strengthen the project's implementation effectiveness and to facilitate its integration with other new and ongoing research, planning and deployment projects.
- Multi-disciplinary and multi-campus research teams are encouraged in order to integrate diverse research capabilities.

III. PROPOSAL FORMAT AND CONTENT

The research proposal should provide a detailed description of the research to be undertaken. The body of the proposal shall be limited to **five (5) pages maximum for each proposed white paper**. Each proposal, including budget, timeline, and cover page, must be in a single file, in either a Microsoft Word 2013 (*.docx) compatible format or an Adobe PDF compatible format. **No zipped files will be accepted.** The proposal shall contain the following information and be presented in the following order:

1. Cover
2. Executive Summary
3. Table of Contents
4. Research Plan
 - A. Introduction
 - B. Problem
 - C. Background/Business Case
 - D. Research Approach
 - E. Anticipated Research Results and Benefits of Research
 - F. Deployment Plan
5. Research Team
 - A. Qualifications
 - B. Accomplishments
 - C. Other commitments
6. Equipment and Facilities
7. Work Schedule (showing all deliverable milestones)
8. Itemized Budget (based on task deliverables and fiscal year)
9. Vitae

1. Cover Page

The cover page must include the date, Initial Scope of Work identifier, title; proposal title; lead researcher's name, affiliation telephone number, email address and address; key supporting researcher(s) name(s) and affiliation(s); name(s) and address(es) of any organization(s) with which a joint venture is proposed, if such is the case; the name and title of the person formally submitting the proposal; the name(s) and title(s) of the

proposal author(s); the project duration; and the project budget for each specific fiscal year where research is performed and a total budget summary across all fiscal years (See **Figure 1**).

2. Executive Summary

The Executive Summary should be a concise, easily understandable presentation of the proposal in two pages or less. Each item from #4 through #10 above should have a separate heading and a brief description.

3. Table of Contents - Reference Page

4. Research Plan

The research plan shall be subdivided into the following sections:

(A) *Introduction* - The introduction to the research plan should provide a concise overview of the respondent's approach to conducting the research. It should describe the manner in which the expertise and experience of the proposed team will be used in the research, and the application of special data, facilities, contacts, or equipment should be presented. The introduction should highlight the linkages of the proposed team's capabilities to the project tasks and the manner by which the proposed plan will satisfy the objectives.

(B) *Problem* - Provide a brief technical description of the problem and why a solution is needed.

(C) *Background/Business Case* - Provide a brief discussion of the background and business case supporting the proposed research effort. Topics for discussion may include the following:

- Review related/complementary research completed or underway in the problem area. (Literature search)
- State proposed research scope, objectives, and motivation; specifically addressing Caltrans' goals.
- Describe the impact of the proposal on the existing transportation issue/problem/need.
- Identify the anticipated customers/users.
- Explain why and how this research project is important to the improvement of California's transportation system.
- State the consequences for Caltrans and its customers if the problem/opportunity is not addressed.
- Provide a brief benefit/cost statement, indicating the anticipated benefits that will be derived from the ultimate product that is the subject of the work to be performed in the proposal.

(D) *Research Approach* - This section shall be used to describe the proposed methodology of the research and how the objectives will be achieved through a logical, innovative, and rational scientific plan. The plan shall describe each phase

or task of the research to be undertaken. Explain the proposed research methods in sufficient detail to enable evaluation of feasibility, originality and significance of the proposal.

If appropriate to the content of the proposal, describe the current technology, policy or process that is the subject of the proposal. If the research project involves selection of a specific solution from among multiple alternative approaches, explain the reasoning behind that selection.

- Describe the alternatives.
- Identify the alternative that best satisfies the objectives.
- Explain why the selected solution was picked over the other alternatives.

(E) *Anticipated Research Results and Benefits of Research* - The research plan for each proposal shall contain specific statements describing the anticipated research results. The results are expected to be presented in terms of the language and working tools of the practitioner or administrator so as to be immediately applicable to practice. Consequently, there must be specific statements of the manner in which the desired results would be reported (e.g., mathematical models, design techniques, field or laboratory test procedures or recommendations for changes in Caltrans' policy, practices, procedures, or standard highway specifications).

(F) *Deployment Plan* - DRISI projects are intended to produce results that will be applied in practice. Therefore, proposals and the project final report must include a preliminary deployment plan that describes any future activities necessary to apply the product of the research in the proposal. It is expected that the deployment plan may evolve during the project; however, proposals must describe, as a minimum, the following: (a) the "product" expected from the research, (b) the audience or "market" for this product, (c) a realistic assessment of impediments to successful deployment, (d) the institutions and individuals who might take leadership in applying the research product, (e) the activities necessary for successful deployment, and (f) the criteria for judging the progress and consequences of deployment, and (g) a projected schedule for major tasks.

If the nature of a specific proposed research effort is such that it is already recognized or known initially that the results will not be amenable to immediate deployment into practice, the research plan must include a detailed explanation to why deployment will not be brought into practice, and realistic recommendations for the additional work necessary to reach the deployment stage.

6. Work Time Schedule and Deliverables

For planning purposes, any resulting contract(s) will be scheduled to start on or after **September 26, 2016**. The time required to complete the research project shall be clearly specified in the proposal using a Months After Contract Award (MACA) basis. Proposals will not be rejected if the proposed time does not exactly match the time

specified in the ISOW included in this CFS; however, any differences must be clearly identified and explained in the proposal. In addition, proposal shall include a Gantt chart type of schedule that shows each phase or task of the work. Schedule shall identify when a phase or task will begin, how long it will continue, and when it should end. The schedule and timetable should clearly delineate the points in time where a project deliverable and/or report are planned. For reports, the timeframes shown in the proposal schedule shall be sufficient to allow for initial development, shall include a single 45-day Caltrans review of any draft documents, shall accommodate incorporation of Caltrans comments and suggestions, and shall also accommodate the final submittal and approval cycle with an additional 45-day approval period of the final document. Any additional internal requirements that a proposer may need to accommodate that could affect the schedule of the research, shall clearly be delineated within the schedule and stated as a contingency. This may include items such as a University or Corporate Board approval needed prior to any human testing, etc.

At the conclusion of the project, the researcher(s) shall deliver a white paper report according to Section III and VII, includes a full explanation of the perceived applied usefulness of the research and follow-on steps.

7. Itemized Budget

The estimated cost for the project is expected to be approximately \$5 to 10k per key design challenge area depending on the size, complexity, and number of challenge areas addressed in each proposal. Lump sum estimates are not acceptable; budgets shall be detailed and itemized.

The budget table must include hourly breakdowns for every principal member of the research team. Actual hours should be shown rather than months or dollars. In addition, it is preferred that only one table be submitted rather than separate tables. The table should be located immediately behind the *Itemized Budget*.

All overhead expenses must be detailed and justified (e.g., benefit, subcontract, material, labor, etc.). Please note that in addition to the total proposed budget, a breakdown by category is required.

Proposals shall be a fully developed bid with a clear Scope of Work linked to timelines in months after contract award. It is not necessary to use specific dates (i.e. April 30, 2017) for task durations, milestones, and deliverables within the schedule. It is sufficient to use days/weeks/months after contract award for timeframes within the schedule. Provide only a single text reference for the anticipated start date as part of the proposal. Each major line item in the schedule shall be fully justified within the budget.

8. Vitae

The proposer may include customized Curriculum Vitae for each member of the research team, highlighting only those items that are pertinent to this specific research proposal. The Vitae, including a list of publications and awards, should **not exceed four pages per researcher**.

IV. QUESTIONS AND ANSWERS

Respondents with questions about the requirements of this CFS must submit those questions in writing to the email address shown below on or before **5:00 PM (PST) on August 17, 2016**. Question submittals must include the name of the individual or research institution submitting the question and a point of contact in the event clarification is needed. All correspondence should be emailed to the following contact:

Yvonne Cooks at: yvonne.cooks@dot.ca.gov

After the indicated deadline for question submittal has passed, questions will be collected, answered and publically posted on Caltrans' DRISI website per the indicated schedule. All information traceable to the individual and/or organization submitting the question will be removed prior to posting of a response by DRISI. (See web link below).

<http://www.dot.ca.gov/research/cfs/index.htm>

A hard copy of written responses to the collected questions will be provided upon specific request.

V. PROPOSAL SUBMISSION/EVALUATION PROCESS

Proposal Submittal, Modification, Resubmittal, and Withdrawal

Proposals should be emailed, with the CFS# and Initial Description of Work identifier in the subject line, and Project Title and Respondent's Name/Research Institution in the email text. Respondents are to submit proposals to:

Yvonne Cooks at: yvonne.cooks@dot.ca.gov

Respondents submitting proposals may modify or withdraw the proposal at any time prior to the submittal deadline. Such modification or withdrawal of a proposal shall be in writing and submitted by the same person submitting the original proposal.

If the modification requested is only an addition to a proposal, a modified copy of the entire revised proposal should be emailed, with the CFS# and "Revised Substitution for (Initial Scope of Work identifier and title)", in the subject line of the email.

Evaluation Process

The proposal evaluations will be completed by Caltrans Project Panels. Proposals will be screened against the evaluation criteria below.

Proposal Evaluation Criteria

- Organization: Adheres to requested page limits and outline? Is the proposal well written?

- **Research Plan:** Comprehensive literature search completed? Are the plans, methods, techniques and procedures feasible, clear, valid, adequately referenced, and state-of-the-art? Are the research results valuable to Caltrans?
- **Research objective:** Are the stated objective, scope and motivation clear, valid, and logical? Responds well to problem statement and meets Caltrans goals?
- **Deployability of research outcome:** When will the ultimate product(s) that is the subject of the research be available and is it likely to be deployed?
- **Qualifications:** Are the qualifications, capabilities, and experience of the proposed lead researcher and other key personnel sufficient to achieve the proposed objectives? If applicable, is proposed research facility adequate for proposed work?
- **Budget:** Does the budget reflect the actual needs of the proposed work? Have the requests for personnel, equipment, supplies, etc. been fully justified? Have cooperative features, partnerships and subcontracts been fully identified?

Acceptance and Rejection of Submissions

DRISI retains the right to disregard a minor deviation from the requirements and may, at its sole discretion, request supplemental information or clarification of the information submitted by any respondent.

Negotiations with Selected Respondent

Once a proposal is submitted, DRISI may elect to negotiate with the any selected respondent or group of respondents. These negotiations may or may not result in a written agreement with DRISI about implementing the proposal. Any agreement as a result of this CFS will be subject to all necessary State, Federal, Agency and Caltrans approvals. If an agreement cannot be reached, negotiations will cease and no contractual agreement, written or implied, will exist. DRISI will not reimburse submitting organizations for any costs incurred in the preparation or submission of pre-proposals or proposals, nor for any expenses incurred in the negotiation process.

This CFS shall not commit DRISI to negotiate and execute any contract or agreement. DRISI reserves the right to accept proposals that, in the sole judgment of DRISI, are in the best interest of the State or other research customers. DRISI reserves the right to reject any or all proposals or to modify or cancel, in part or in its entirety, this CFS.

VI. GENERAL INFORMATION

Confidentiality

Proposal submittals are confidential. Selection committee members shall discuss the evaluation proceedings and content of proposals only with DRISI staff and with members of the selection committees. Proposals that are not selected will not be reprinted or used for purposes not pertaining to this CFS process. Information on proposals that are selected will not be released until a contract is in place.

Supporting Documents

There may be supporting documents posted on the CFS web page. Respondents are encouraged to review these documents prior to submitting a proposal. These documents are intended to help establish and frame the amount of work needing to be done for selected elements of this Initial Scope of Work.

Amendments to this CFS

DRISI reserves the right to amend this CFS by addendum prior to the final date of proposal submission.

Schedule

The schedule related to this CFS is as follows:

EVENT	DATE
CFS Available to Prospective Respondents	August 8, 2016
Proposal Written Question Submittal Deadline	August 17, 2016
Responses to Questions	August 19, 2016
Final Date for Proposal Submission	September 2, 2016
Proposal Selection	September 12, 2016

VII. RESEARCH INITIAL SCOPE OF WORK

The name and title of the attached Initial Scope of Work is:

17_PPP 01: Road Charge White Paper

FIGURE 1 Example Cover Page

COVER PAGE

Proposal Title: Use Initial Scope of Work Number and Title: (Work Number and Title of Initial Scope of Work as shown in Section VII)

Proposing Organization: (Use respondent name that will appear on contract; include address, email, and telephone number)

Person Submitting Proposal: (Name and Title)

Proposal Written by: (Name and Title)

Proposal Date: _____

Principal Investigator: (Name, Title, Business Telephone Number and e-mail address)

Additional Investigators: (Name, Title, Business Telephone Number and e-mail address; include all team members other than PI)

Administrative Officer: (Name, Title, Business Telephone number and e-mail address)

Proposed Contract Start Date: (i.e. "**September 26, 2016**")

Proposed Contract Period: (In Months)

Fiscal Year 2016/17 Cost: _____

Fiscal Year 2017/18 Cost: _____

TOTAL COSTS: _____