



California State University
Transportation Consortium

SB 1 Research Activities 2017-2018 / Research Plan 2018-2019

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Overview

The California State University Transportation Consortium (CSUTC) unifies and focuses the efforts of four outstanding CSU campuses that represent and support the geographical, cultural, racial, and socioeconomic diversity that makes California, and the CSU system, strong: (1) CSU Chico – California Pavement Preservation Center; (2) CSU Fresno – Fresno State Transportation Institute; (3) CSU Long Beach – Center for International Trade and Transportation/College of Engineering; and (4) San José State University – Mineta Transportation Institute. CSUTC is led by the Mineta Transportation Institute (MTI) at San José State University, a federally-funded University Transportation Center since 1991.

CSUTC plans to be a leader in researching safe, reliable solutions that increase mobility of people and goods and strengthen California's economy. CSUTC research is designed to align with SB 1 priorities related to congestion relief (including traffic management systems), trade corridor enhancements, improved transit and rail, pedestrian and cyclist safety projects, as well as maintenance and rehabilitation for California's road and bridge infrastructure. Specifically, CSUTC research is designed to achieve the following objectives:

- **Objective 1:** Leverage new technologies, including vehicle automation, and innovative processes to achieve a seamless, multimodal surface transportation system that integrates with other "smart city" investments.
- **Objective 2:** Develop tools and approaches, such as life-cycle cost analysis, that will identify cost-effective materials and methods to facilitate road and bridge rehabilitation/maintenance decision-making and improve the long-term benefits of transportation investments.
- **Objective 3:** Develop advanced solutions for the application of new materials, design, and technologies to address long-term road and bridge maintenance and pavement/concrete rehabilitation needs.
- **Objective 4:** Create safer communities, increased access to transit, and greater opportunities for use of active transportation modes (i.e., biking and walking) through complete streets and innovative land use planning so that people of all abilities and socioeconomic levels enjoy the same opportunities for learning, living, labor, and leisure.
- **Objective 5:** Maximize opportunities for California's cap-and-trade program to reduce the impact of transportation on climate change.
- **Objective 6:** Promote intermodal connectivity, station development, and innovative finance solutions for multimodal transit centers.

- **Objective 7:** Inform and improve decision-making on transportation-related issues through timely, relevant and nonpartisan public opinion polling of Californians.
- **Objective 8:** Optimize passenger and freight movements to improve mobility of people and goods through development of more accurate data models and advanced congestion management tools to achieve trade and commute corridor improvements.

Year 1 Research Activities

CSUTC used a two-pronged approach to develop a comprehensive research portfolio. First, each partner received a modest amount of funding to complete high-priority research projects aligned with SB 1. The second approach was a CSU-wide competitive RFP process led by MTI/SJSU.

A. CSUTC Partner Research

1. CSU Chico

CSU Chico, through the California Pavement Preservation Center (CPPC), focused their Year 1 research efforts on 1 larger-scale project titled “Determining the Life Extension and Economic Benefits of Pavement Preservation Strategies for Local Agencies.” This research will lead to the development of set of training modules and a workbook on Pavement Preservation. Key personnel include: DingXin Cheng, R. Gary Hicks, and Lerosé Lane.

2. CSU Fresno

CSU Fresno, through the Fresno State Transportation Institute (FSTI), conducted an internal competitive RFP which funded four research projects. They include:

PI	CSU Fresno Affiliation	Title	Award \$ ^a
VanLeuven, Nancy	Media, Communications and Journalism	Collaboratively Connecting: Public Polling as a Foundation for Integrated Transportation Decision-Making Networks	26,127
Wang, Chih-Hao	Geography and City & Regional Planning	Developing a Fair Accessibility Framework Through Non-auto Transportation Modes for Fresno, CA	21,795
Nazari, Maryam	Civil and Geomatics Engineering	Green Strategies for Design and Construction of Non-Auto Transportation Infrastructure	32,469
Ahn, Yushin	Civil and Geomatics Engineering	Photogrammetry-based Bridge Dynamic Deformation Monitoring (PhoBD2M)	34,906

^a Includes indirects at 15%

3. CSU Long Beach

CSU Long Beach, through the College of Engineering and Center for International Trade and Transportation (CITT), held an internal competitive RFP process in Spring 2018. Nine projects were selected for funding. They include:

PI	CSULB Affiliation ^a	Title	Award \$ ^b
Balali, Vahid	COE	Image-based Remote Measurement of Retro-Reflectivity of Roadway Assets in the Daytime	27,600
Calabrese, Andrea	COE	Long-term performance assessment of natural rubber bearings used in bridges	27,622
Golshani, Forouzan	COE	Research and Development of Alternative Parking Technology	27,600
Robinson, Jessica	CBA	The People Behind the Wheel: Exploring the Policy Changes, Job Stressors, and Identity Issues Driving Turnover Among California Truck Drivers	17,250
O'Brien, Tom	CITT	Geospatial Information Tools in the Service of Mobility and Transportation	23,000
Rahai, Hamid	COE	Numerical Investigations of Air Flow Around a Freight Truck with a Rear Active Flow Control	27,600
Sodagari, Shabnam	COE	Protection of Vehicles and Roadside Units Safety Messages from WiFi Interference	24,930
Saadeh, Shadi	COE	Sensitivity Analysis on Semi-Circular Bending Test for Use as Quality Control Test in California	27,600
Yang, Hengzhao	COE	A Supercapacitor-based Energy Storage System for Roadway Energy Harvesting Applications	27,600

^a COE – College of Engineering, CBA – College of Business Administration, CITT – Center for International Trade and Transportation

^b Includes indirects at 15%

4. San José State University

SJSU, through the Mineta Transportation Institute is currently working on three research projects and a collaboration with the University of California to develop the City & County Pavement Improvement Center (CCPIC). CCPIC works closely with local governments to increase pavement technical capability through timely, relevant, and practical support, training, outreach, and research. MTI has also retained a small component (~10% of funding) to respond to high priority research needs as identified by the California State Legislature.

PI	Title	Award \$ ^a
Wachs, Martin	California Fuel Tax Revenues Futures	11,502
Agrawal, Asha	Investing in California's Future: Public Opinion on Critical Transportation Needs	71,140
Spence, Tyler & Favaro, Francesca	Regional Planning and Regulatory Priorities for Integrating Drone Technology in Smart Cities	61,394
CSU/UC Collaboration	City & County Pavement Improvement Center	86,250

^a Includes indirects at 15%

B. CSU-wide Competition RFP Process

MTI/SJSU, in collaboration with the CSU Chancellor's Office, implemented the CSU-wide RFP process using the following approach.

- Notice of Intent of a Transportation Funding Opportunity for CSU Campuses announcement distributed to CSU campuses on December 18, 2017 (see Appendix A).
- Research needs statements solicited from Caltrans, FTA Region 9 office, FHWA CA Division, Silicon Valley Bicycle Coalition, the City of San Jose DOT, and MTI's Board of Trustees (see Appendix B).
- RFP (available on InfoReady) distributed to CSU campuses on January 18, 2018 with a deadline to submit on February 26, 2018 (see Appendix C).
- Evaluation rubric based on criteria and weighting listed in the RFP developed for reviews.
- Proposals categorized by objective and assigned to subject matter experts for initial review. A total of 50 subject matter experts were identified. None of the experts were affiliated with a CSU campus.
- Top scoring proposals (25%, or 21 proposals) reviewed by panel of 3 academics (non-CSU-affiliated) and 2 professionals representing Caltrans and the California Transportation Commission. The panel met via phone conference on April 26, 2018.
- Final set of 10 proposals selected for funding.
- Announcements regarding funding decisions were sent to PIs on April 30, 2018.
- Interagency agreements prepared and distributed to all awarded campuses by May 16, 2018.

Summary of Proposals Received

A total of 84 proposals were received from eighteen CSU campuses (see Table 1) and, as shown in Table 2, across the full spectrum of CSUTC research objectives identified in the RFP.

Table 1 Summary of Proposal Submissions, by Campus

Campus	Number of Proposals
CSU Los Angeles	13
CSU Long Beach	12
San Jose State University	10
Cal Poly Pomona	9
CSU Fresno	8
San Diego State University	7
Cal Poly San Luis Obispo	7
CSU Chico	3
CSU Northridge	3
CSU East Bay	2
CSU Dominguez Hills	2
CSU Sacramento	2
CSU San Bernardino	1

CSU Fullerton	1
San Francisco State University	1
CSU San Marcos	1
CSU Stanislaus	1
CSU Bakersfield	1
Total	84

Table 2 Summary of Proposal Submissions, by Research Objective

Research Objective	Number of Proposals
Objective 1: Leverage new technologies, including vehicle automation, and innovative processes to achieve a seamless, multimodal surface transportation system that integrates with other “smart city” investments.	33
Objective 2: Develop tools and approaches, such as life-cycle cost analysis, that will identify cost-effective materials and methods to facilitate road and bridge rehabilitation/maintenance decision-making and improve the long-term benefits of transportation investments.	20
Objective 3: Develop advanced solutions for the application of new materials, design, and technologies to address long-term road and bridge maintenance and pavement/concrete rehabilitation needs.	24
Objective 4: Create safer communities, increased access to transit, and greater opportunities for use of active transportation modes (i.e., biking and walking) through complete streets and innovative land use planning so that people of all abilities and socioeconomic levels enjoy the same opportunities for learning, living, labor, and leisure.	33
Objective 5: Maximize opportunities for California’s cap-and-trade program to reduce the impact of transportation on climate change.	19
Objective 6: Promote intermodal connectivity, station development, and innovative finance solutions for multimodal transit centers.	6
Objective 7: Inform and improve decision-making on transportation-related issues through timely, relevant and nonpartisan public opinion polling of Californians.	N/A*
Objective 8: Optimize passenger and freight movements to improve mobility of people and goods through development of more accurate data models and advanced congestion management tools to achieve trade and commute corridor improvements.	15
* No proposals were solicited for this CSUTC research objective and it was not included in the Year I competitive RFP. MTI/SJSU has taken the lead on this research objective for Year I due to extensive expertise in this specific area.	

Summary of Proposals Awarded

Ten projects were selected for funding by the review panel. A total of 8 CSU campuses are represented among the PIs; in addition, several of the proposals involve multi-campus research teams. Interagency agreements were processed between the SJSU Research Foundation and

the respective campus Offices of Sponsored Programs. MTI provided each PI with detailed information regarding managing their project and submitting regular progress reports.

PI	CSU Affiliation	Title	Award \$ ^a
Ryan, Sherry	San Diego State University	A Micro-Scale Analysis of Cycling Demand, Safety and Network Quality	75,000
Akhavian, Reza	CSU East Bay	Automated Measurement of Heavy Equipment Greenhouse Gas Emission: The Case of Road/Bridge Construction and Maintenance	74,911
Jahangiri, Arash	San Diego State University	Developing a Computer Vision-based Decision Support System	74,948
Li, Xiaojun	CSU Fresno	Development of a Quality Control Method and Guideline for Hot Mix Asphalt (HMA) Using Recycled Concrete Aggregate (RCA)	74,942
Andrei, Dragos	Cal Poly Pomona	Green Up: Pavement Rehabilitation Decision Tool	75,000
Alexander, Serena	San Jose State University	Harmonizing Climate Change Mitigation and Adaptation in Transportation and Land-Use Planning in California Cities	73,109
Voulgaris, Carole	Cal Poly San Luis Obispo	Moving to Walkability? Stated and revealed behavior on the impacts of land use and travel demand management on mode choice	73,453
Fuchs, Alan	CSU Bakersfield	New Materials and Design Approach for Roads, Bridges, Pavement and Concrete	74,991
Rahai, Hamid	CSU Long Beach	Reducing NOx Emissions of A Cargo Handling Equipment (CHE) with Humid Air System	61,907
Prager, Fynnwin	CSU Dominguez Hills	The "GO-Virtual Initiative" - Using flexible workplace practices to reduce traffic congestion, increase economic development, and provide more access to affordable housing choices in the South Bay Region of Los Angeles County	74,999

^a Includes indirects at 15%

C. Final Publication Process

All research projects undertaken as part of the CSUTC will prepare a final report. Research teams will submit a draft version of the report to MTI. MTI will then take the lead on completing a technical peer review of the report, professional editing and formatting, and publication of the final report on the CSUTC website. Finally, to move research results into practice, a robust technology transfer program will be implemented. This will include promotion via press releases, social media, newsletters, as well as the CSU Transportation Research Spotlight in Sacramento.

D. Summary of Year 1 Activities

Overall, a total of 28 projects have been funded and are underway. The first year for the CSUTC was challenging, however, primarily due to delays related to the contracting process. The final executed contract from the CSU Chancellor's Office was received March 25, 2018. In addition, there were some delays in finalizing the interagency agreements with the Offices of Sponsored Projects at sister CSU campuses. To avoid a similar experience in Year 2, MTI will implement a

change to the CSU-wide competitive RFP process and will require that all submitted proposals include a completed SJSU Research Foundation Subrecipient Commitment Form as an attachment.

Year 2 Research Activities

Consortium activities for Year 2 will follow a similar pattern as Year 1. CSU Long Beach and CSU Fresno will both run an internal grant competition similar to their Year 1 activities. CSU Chico, through their California Pavement Preservation Center, will conduct a larger-scale research project focused on the performance of pavement preservation strategies. This is a continuation of the work conducted in Year 1, but will lead to a separate research report and training materials. In addition to research activities in Year 2, MTI will also implement several workforce development programs including a visiting scholar series targeted at transportation professionals and a Mobility Leader program that will bring together students and high-profile transportation leaders.

MTI will also lead the CSU-wide competition RFP following a similar process used in 2018, but with the addition of several new elements to streamline the process and reduce contracting delays.

Appendix A: Notice of Intent of a Transportation Funding Opportunity for CSU Campuses



December 18, 2017

MEMORANDUM

TO: CSU Faculty and Researchers

FROM: Karen Phibrick, Ph.D.
Executive Director, Mineta Transportation Institute

SUBJECT: Notice of Intent of a Transportation Funding Opportunity for CSU campuses

California's Senate Bill 1 (SB 1), signed into law on April 28, 2017, is a comprehensive transportation funding package designed to address a wide range of transportation-related needs across California. As part of SB 1, annual appropriations of up to \$2 million will be made available to the California State University (CSU) for the purpose of conducting transportation research and transportation-related workforce education, training and development.

A CSU-wide competitive RFP will be issued January 18, 2018 by the Mineta Transportation Institute at San José State University, lead of the four-campus California State University Transportation Consortium (CSUTC) in partnership with CSU Chico, CSU Fresno, and CSU Long Beach. The competition will be open to faculty at any CSU campus.

Proposals will need to align with the following objectives:

- **Objective 1:** Leverage new technologies, including vehicle automation, and innovative processes to achieve a seamless, multimodal surface transportation system that integrates with other "smart city" investments.
- **Objective 2:** Develop tools and approaches, such as life-cycle cost analysis, that will identify cost-effective materials and methods to facilitate road and bridge rehabilitation/maintenance decision-making and improve the long-term benefits of transportation investments.
- **Objective 3:** Develop advanced solutions for the application of new materials, design, and technologies to address long-term road and bridge maintenance and pavement/concrete rehabilitation needs.
- **Objective 4:** Create safer communities, increased access to transit, and greater opportunities for use of active transportation modes (i.e., biking and walking) through complete streets and innovative land use planning so that people of all abilities and socioeconomic levels enjoy the same opportunities for learning, living, labor, and leisure.
- **Objective 5:** Maximize opportunities for California's cap-and-trade program to reduce the impact of transportation on climate change.
- **Objective 6:** Promote intermodal connectivity, station development, and innovative finance solutions for the California high-speed rail project.
- **Objective 7:** Inform and improve decision-making on transportation-related issues through timely, relevant and nonpartisan public opinion polling of Californians.



- **Objective 8:** Optimize passenger and freight movements to improve mobility of people and goods through development of more accurate data models and advanced congestion management tools to achieve trade and commute corridor improvements.

Proposed Timeline

The following timeline for the RFP process has been developed.

Release of RFP for CSU-wide competition	January 18, 2018
Deadline for RFP responses	Monday, February 26, 2018, by 5:00 p.m. (Pacific)
Announcement of selected research proposals	April 9, 2018

Contact

For questions regarding this announcement and the CSU-wide RFP process, please contact Dr. Hilary Nixon, Director of Research and Technology Transfer at the Mineta Transportation Institute at hilary.nixon@sjsu.edu.

Appendix B: Research Needs Statement for SB 1

A research needs statement provides a brief summary of the proposed needs. The preferred length is up to two pages. Any questions or comments on the research needs statement submittal process should be directed to Karen Philbrick, Ph.D., Executive Director.

Submit to: Karen Philbrick, Ph.D.
Executive Director
Mineta Transportation Institute
karen.philbrick@sjsu.edu / 408-924-7562

Title	(Provide a short, descriptive title.)
Problem Statement	(Provide a concise description of the proposal research project, including a statement of the problem to be solved or the research need.)
Research Objective / Tasks	(A statement of the specific research objective, defined in terms of the expected final product, which relates to the general problem statement above. Define the specific tasks, as necessary, to achieve the objectives.) Objective: Task 1: Task 2: Task 3: ...
Relationship to Strategic Goals (see below)	(Briefly discuss how the research need aligns with SB1's strategic goals and objectives.)

Related Research

(Please provide a list of related research. The Transportation Research International Documentation (TRID; <http://trid.trb.org>) and Research in Progress (RiP; <http://rip.trb.org>) databases should be consulted.)

Date of Submittal

(Date)

Submitted By

(Name and contact information for submitter.)

Appendix C: CSU-Wide SB 1 Competitive RFP for Year 1



CSU Transportation Research & Workforce Development Request for Proposals

◆ Background

California's Senate Bill 1 (SB 1), signed into law on April 28, 2017, is a comprehensive transportation funding package designed to address a wide range of transportation-related needs across California. As part of SB 1, annual appropriations of up to \$2 million will be made available to the California State University (CSU) for the purpose of conducting transportation research and transportation-related workforce education, training and development. The Mineta Transportation Institute (MTI) at San José State University (SJSU) was selected to lead the California State University Transportation Consortium (CSUTC). CSUTC comprises MTI/SJSU along with partners CSU Chico, CSU Fresno, and CSU Long Beach. **CSUTC will engage in a two-pronged approach to developing a comprehensive research portfolio:** 1) Each CSUTC partner will engage in SB 1-related research and/or workforce development activities and 2) CSUTC will manage a CSU-wide competitive request for proposals to identify research projects aligned with SB 1 priorities.

◆ General Proposal Information

Who can apply? This research funding opportunity is available to faculty (permanent or temporary) at any California State University campus. Commercial organizations, non-profits, and other universities may not respond to this RFP. The Principal Investigator(s) must be CSU faculty; non-CSU personnel may participate on research teams. All proposals must include funding for CSU students.

Project funding. Proposal budgets, including indirect/F&A/overhead expenses (limited to 15%), must not exceed \$75,000. Applicants must use the budget template provided. Approximately 10 awards will be issued through this competitive selection process.

Deadline. The deadline to apply to this funding opportunity is **11:59 p.m. (Pacific) on Monday, February 26, 2018**. All submissions must be submitted through Calstate InfoReady (<https://calstate.infoready4.com/>). For questions specifically about using InfoReady, please contact Ty Melvin (tmelvin@calstate.edu).

Proposal review. Proposals will be reviewed by an external, independent, third-party review committee using the evaluation criteria listed below. No CSU-affiliated faculty or staff will serve as reviewers. The committee will make the final decision regarding projects selected for funding.

Submission Deadline:

February 26, 2018

RFP Guidelines,
Proposal and Budget
Template available at:
<https://calstate.infoready4.com>

MTI CONTACT:

Dr. Hilary Nixon
MTI Director of
Research and
Technology Transfer
hilary.nixon@sjsu.edu
408-924-7564

Issued: January 18, 2018

**ALL AWARDS ARE
SUBJECT TO THE
AVAILABILITY OF
APPROPRIATED
FUNDS**



Distribution of funds. The authorized contracting entity for SJSU, the SJSU Research Foundation, will award funds for approved proposals. The Principal Investigator will be required to submit monthly progress reports to MTI as a condition of payment.

◆ **Project Emphasis Areas**

Proposals must align with SB I and fall within the CSUTC specific research objectives. SB I priorities include: maintenance & rehabilitation of surface transportation infrastructure; congestion relief; trade corridor improvements; improved transit/trail; pedestrian/cyclist safety projects. More information about SB I can be found at: <http://rebuildingca.ca.gov/>.

- **CSUTC Objective 1:** Leverage new technologies, including vehicle automation, and innovative processes to achieve a seamless, multimodal surface transportation system that integrates with other "smart city" investments.
- **CSUTC Objective 2:** Develop tools and approaches, such as life-cycle cost analysis, that will identify cost-effective materials and methods to facilitate road and bridge rehabilitation/maintenance decision-making and improve the long-term benefits of transportation investments.
- **CSUTC Objective 3:** Develop advanced solutions for the application of new materials, design, and technologies to address long-term road and bridge maintenance and pavement/concrete rehabilitation needs.
- **CSUTC Objective 4:** Create safer communities, increased access to transit, and greater opportunities for use of active transportation modes (i.e., biking and walking) through complete streets and innovative land use planning so that people of all abilities and socioeconomic levels enjoy the same opportunities for learning, living, labor, and leisure.
- **CSUTC Objective 5:** Maximize opportunities for California's cap-and-trade program to reduce the impact of transportation on climate change.
- **CSUTC Objective 6:** Promote intermodal connectivity, station-area development, and innovative finance solutions for multimodal transit centers.
- **CSUTC Objective 7:** Optimize passenger and freight movements to improve mobility of people and goods through development of more accurate data models and advanced congestion management tools to achieve trade and commute corridor improvements.
 - Project Example (congestion management/improved mobility): Evaluate the effectiveness of coordinated ramp metering (CRM) systems to improve freeway performance compared to existing ramp metering algorithms. [For more information, contact Dr. Hilary Nixon.]

◆ **Proposal Contents**

Using the provided template, applicants must respond to the following questions:

1. **Project Goal.**
Briefly state the goal of this project in 1-2 sentences.
2. **Project Alignment with SB I Goals and Consortium Research Objectives.**
Describe (approx. 250-350 words) how your proposed project aligns with SB I goals and CSUTC research objectives. Applicants should specifically describe how their proposed project meets one or more of these research emphasis areas.
3. **Project Background.**

Describe (approx. 500-750 words) the background problem/issue the proposed project will address and provide a brief review of the academic and/or professional literature that demonstrates your knowledge of past work in the field. Include references. Applicants are expected to clearly indicate how their project expands upon existing knowledge in the field. All applicants should carefully review academic databases and research sites including TRID (Transportation Research Integrated Database, trid.trb.org) to ensure that the proposed project does not replicate existing research and contributes to existing knowledge in the field. Information about accessing the TRID database is available from: <http://www.trb.org/ElectronicSessions/Blurbs/175899.aspx>.

4. **Project Objectives.**

List the specific project objectives (<250 words).

5. **Project Methods.**

Describe (<1000 words) how the project objectives will be accomplished. Provide a detailed description of your proposed methods in a manner that can be understood by a wide range of transportation experts. Applicants should describe data collection procedures, including any likely challenges associated with gathering the necessary data, and methods to analyze the data.

6. **Project Tasks.**

List specific project tasks and anticipated timeline for completion (e.g. Task 2: Develop survey and submit to campus Institutional Review Board – Months 2-3). Project duration is a maximum of 12 months. The task list should end with the submittal of a draft report prepared according to MTI formatting guidelines. All project reports will be peer reviewed and authors will be expected to respond accordingly to peer review comments when submitting a final report to MTI for publication.

7. **Technology Transfer.**

Describe (<250 words) how the results of this project will be disseminated. Journal articles and conference presentations are valued, but also describe what efforts will be made to ensure that the results are made widely available beyond the academic community.

8. **Benefits to Californians.**

Describe (approx. 250-350 words) how the results of this project will benefit Californians and how practitioners might apply the anticipated results.

9. **Leveraging SB I Funds.**

Describe (<250 words) how you plan to leverage the funding received through this grant to obtain additional external funds in the future.

10. **Research Team Qualification.**

Describe (approx. 250 words per team member) the research team's relevant skills and experiences that will help ensure success. Applicants should describe the role and responsibilities of each team member.

11. **Budget Justification.**

Provide a budget justification. No capital expenditures are allowed. Student involvement is a requirement and should be explained.

◆ **Evaluation Criteria**

The criteria and process for evaluating proposals is as follows:

Criteria	Rating Scale	% of Final Score (Weighting)
1. Does the proposal align with one or more of the SB I priorities and specific CSUTC research objectives listed in the RFP? (Required: projects that do not align with one or more SB I priorities and specific CSUTC research objectives will not be funded.)	Yes/No	N/A. Proposals that do not meet this criterion will be disqualified.
2. Does the proposal present a clear and concise understanding of the problem and project objectives?	0 to 10	25%
3. Are the research methods appropriate for the proposed research? Is the approach to data collection and data analysis clearly explained? Does the proposed methodology address the ability to collect and analyze the data according to sound methodological practices?	0 to 10	25%
4. Are the proposed tasks achievable in the proposed timeline?	0 to 10	10%
5. Are the technology transfer activities likely to achieve broad and appropriate dissemination of the research results and are the benefits to Californians and transportation practitioners clearly described?	0 to 10	10%
6. Does the research team present a reasonable plan for leveraging the funding received through this grant?	0 to 10	10%
7. Are the experiences and qualifications of the research team sufficient to ensure project success? Have they successfully completed similar/relevant research projects?	0 to 10	10%
8. Are there any unique, new, or innovative ideas, techniques, materials, or procedures contained in this proposal that could be of particular interest to the State of California and the transportation industry?	0 to 10	10%

Review committee members will be asked to comment on the strengths and weaknesses of each proposal and rate each proposal using the criteria and process described above.

◆ **MTI Contact**

For questions about this RFP, please contact:

Dr. Hilary Nixon

MTI Director of Research and Technology Transfer

hilary.nixon@jsu.edu

408-924-7564