



Request for Proposals for Research Projects – Year 1
Pacific Southwest Region 9 University Transportation Center

RFP Issued: September 28, 2023
Proposals Due: November 10, 2023



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Introduction

The [Pacific Southwest Region University Transportation Center](#) (PSR) is the Regional UTC for US Region 9 (California, Arizona, Nevada, Hawaii, and the Pacific Islands). PSR is led by the METRANS Transportation Center, University of Southern California and includes the following partners: California State University, Long Beach, Northern Arizona University, Pima Community College, University of California, Berkeley, University of California, Davis, University of California, Irvine, University of California, Los Angeles, University of Hawaii, and University of Nevada, Las Vegas. PSR-funded research is expected to result in scholarly publications and contribute to generating larger grants from other sources.

Funding for this RFP

This is an RFP for Year 1, and it will allocate our Year 1 research funding for USC. Funding available under this RFP is approximately **\$400,000** for US DOT projects.

The amount awarded under this RFP will be determined by the quality and relevance of proposals received. Given the anticipated competition for these funds, prospective applicants should carefully consider their expertise relative to the thematic areas and topics.

The remainder of this RFP describes eligibility requirements, research topics, selection criteria, funding guidelines and restrictions, project requirements, and proposal instructions as well as budget instructions and sample budget sheets for USC. Submission instructions and a proposal template are also provided.

Eligibility

Full-time tenure track and research faculty members eligible to serve as Principal Investigators at any of the partner universities are eligible to serve as Principal Investigators on PSR UTC grants. Proposals may include multiple investigators. Proposals may also include research faculty and non-tenure track faculty from the partner universities as Co-Principal Investigators. A small amount of funding has been reserved for university researchers within Region 9 but outside the consortium. The same eligibility requirements apply. For the USC funding, Principal Investigators must be eligible to serve as a Principal Investigator at USC.

Research Program Themes and Topic Areas

Our research program is organized around two themes, Accessibility and Mobility for All and Sustainable and Resilient Supply Chains, and a topic that cuts across both themes, Access to Opportunity Through Strategic Workforce Development.

Research Theme 1: Accessibility and Mobility for All: Too often, the transportation system creates and perpetuates inequities. At the same time, advances in technology and a renewed focus on multi-modal transportation bring a promise of transformative change that can reduce inequities and link previously isolated communities to opportunities. The objective of this research theme is to generate knowledge that will close access gaps and reduce inequities. There are three topics within this theme.

Topic 1.1, Accessibility for Underserved and Isolated Communities: This topic focuses on creating knowledge that helps close access gaps across underserved locations and populations throughout Region 9. That can be through a focus on technology, systems, planning, or policy, with a common thread that research on this topic will help close access gaps and increase transportation equity. Research in this topic area can include work on policies, practices, technologies, and infrastructure related to: equity and accessibility characteristics of platform or web-based systems, transportation access in remote locations, the ability of online services to substitute for or complement access among underserved populations, multi-modal transport, shared mobility (e.g. car-sharing, ride-sharing, bicycle sharing), and safety (particularly in underserved locations or among underserved populations.) This topic also includes research on preserving and strengthening access in locations where climate change poses increased risks to the infrastructure and systems that provide everyday and lifeline connections. Given the pace of technological change in this topic area, the examples listed above are not exhaustive.

Topic 1.2: Improving the Efficiency of the Mobility System: This topic will generate knowledge that will improve the efficiency of the transportation system. Examples can include research on near-term technology solutions like smart parking, car sharing or delivery consolidations, as well as long-term solutions such as the development of models and algorithms for managing shared connected and autonomous vehicles, impacts on travel behavior, and impacts on traffic flow and management in mixed fleets, and truck platoons. Resource questions, such as declines in transit ridership and financial or management models that support transit or transportation system efficiency and equity, are also appropriate for this topic.

Topic 1.3: Broadening Access to Low/Zero Carbon Transport: This topic explores policies and strategies for broadening the market for clean vehicles, with a focus on broadening access among under-resourced places or populations. This would include research that advances understanding of approaches for zero-emission passenger vehicle markets, include markets for second-hand vehicles, subsidy policies, and charging networks. Studies that incorporate the role of income, household tenure status (homeowner vs. renter), and race/ethnicity are welcomed. Studies that examine the role of other zero- or low-emission options, such as e-bikes or non-motorized modes, or new technologies that promise low/zero carbon transport, are also welcomed.

Research Theme 2: Sustainable and Resilient Supply Chains: Supply chains and the freight system that supports them are essential to the economy and society and are lifelines during emergencies. Goods movement is also a major source of environmental harm. Research in this theme will create knowledge that will promote a more resilient, sustainable, and equitable goods movement system.

Topic 2.1: Addressing Environmental Justice Problems in the Goods Movement System: Research in this topic area will include studies that help reduce environmental justice (EJ) gaps and impacts associated with growing and restructuring distribution chains, demand for warehousing, and truck travel associated with the goods movement system. This can include research focused on EJ problems associated with the surface transportation aspects of ports, airports, other large intermodal facilities, large warehouse clusters, and the corridors connecting goods to consumer markets. Research on safety, emissions and exposure, noise, crash risk, health, and other disparate impacts of the goods movement system are also appropriate in this topic.

Topic 2.2: Goods Movement System Efficiencies and Resilience: Research in this topic area will include technologies, systems, policies, plans, and practices that increase the efficiency of the US goods movement system. This can include models and methods for coordination of freight demand

across modes and firms, generation and management of freight data, better management of freight pickups and deliveries, and methods to increase supply chain flexibility and resilience. Research that examines and brings solutions to shocks that occur in interdependent and high-velocity supply chains, from disruptions natural or human-made, are welcome.

Topic 2.3: Decarbonizing the Goods Movement System: This topic will research alternative fuels, examining the advantages and disadvantages of battery electric and hydrogen fuel cell fleets, as well as the costs and benefits zero emission surface transportation goods movement technologies and the costs and benefits of hybrid power trains as a bridge technology. Research in this topic can include technologies for low- or zero-emission goods movement vehicles, as well as plans, policies, and practices to implement new technologies in either pilots or at scale. Research in this topic can include life cycle models that compare upstream and downstream costs and benefits and impacts on firms, independent truck operators, and consumers from transitions to low- or zero-emission. Research that informs national guidelines for heavy-duty vehicle decarbonization is welcomed in this topic area.

Cross Cutting Topic (Topic CC): Access to Opportunity Through Strategic Workforce

Development: Research in this topic can apply to either Theme 1 or Theme 2, by examining workforce issues related to either the US passenger or freight transportation systems, or both. Research in this topic area will include studies of the changing nature of work in transportation. That can include research on the workforce impacts of automation, the shift to new fuels, green jobs in transportation, the growth of new modes, or more broadly changes in the use of different transportation modes and assessments of the workforce impacts of transportation policies, investments, and technologies. Research with an emphasis on opportunities in lower income, under-resourced or environmental justice communities is welcomed. Research in this topic area can evaluate the effectiveness of workforce training programs, including but not limited to programs pursued by PSR universities or partners.

Funding for PSR is from the US Department of Transportation. Submission of proposals consistent with the mission of METRANS is encouraged. Proposers are also encouraged to review the US DOT Research, Development, and Technology Strategic Plan, available [here](#), and articulate how their research will advance objectives in that plan while creating transformative impacts. You will be asked in the proposal submission AirTable form (described later in this RFP) to indicate how your proposal links to the US DOT strategic goals of equity, climate sustainability, and/or economic strength and global competitiveness, and you should articulate in your proposal text how your research contributes to one or more of those goals and how it supports the US DOT Research, Development, and Technology Strategic Plan.

Selection Criteria for All Proposals

Transportation researchers and practitioners will evaluate proposals. Proposals will be selected on the basis of their evaluations along with programmatic priorities. Proposals will compete both within topics and across topics. PSR does not guarantee that proposals will be funded in all topic areas, or that any proposal will be funded.

Reviewers will evaluate proposals according to the following selection criteria:

1. Demonstrated relevance to the above research program themes (a requirement)
2. Quality and research significance, including the potential for transformative impact
3. Student involvement
4. Reasonableness of budget and cost-effectiveness
5. Qualifications to perform work and likelihood of successful completion
6. Match funding and potential for attracting larger grant funding
7. Potential to advance US DOT Research, Development, and Technology strategic plan goals
8. Prior performance on grants (as applicable)

Proposals that involve collaboration between partner universities, interdisciplinary proposals that cross school boundaries as well as participation from outside organizations are encouraged.

Proposers are encouraged to communicate with members of the PSR Executive Committee or other outside organizations in the development of research proposals. The PSR Executive Committee includes the lead faculty for each partner institution. The list may be found in the directory page the PSR website: <https://www.metrans.org/PSR.UTC.key.personnel>. Commitments of participation (for example data sharing or match funding) from outside of PSR will be a consideration in making awards. ***Any project that involves data collection, access to facilities, or cooperation of a private or public entity must include a letter of participation from the entity in the proposal. Without such verification of participation, the proposal will not be considered for funding.***

Proposers are encouraged to include undergraduate students in the research project if appropriate. There are potential funding opportunities through various university programs that could support students working on PSR projects. Proposers are strongly encouraged but not required by this RFP to explore such opportunities with their schools and universities.

Match Funding

The USDOT University Transportation Center program requires a non-federal match as a condition of the federal funds. Caltrans provides only a portion of the required match, and only to PSR partners in California (USC, Cal State Long Beach, and UC Berkeley, Davis, Irvine, and Los Angeles). Thus, PSR encourages proposals that include match funding from non-federal sources. Proposals that include at least a 10% hard match (e.g. contribution to direct costs from external source) will receive priority consideration. Regional pool fund proposals must include 100% match as part of the proposal. For additional information, contact PSR Associate Director of Administration Jennifer Hong at jenc@usc.edu.

Project Selection

The PSR Executive Committee will make final project selections, taking into account reviewer evaluations, programmatic priorities, prior project performance, and partner recommendations.

Funding Guidelines and Restrictions

Budgets should be conservative and cost-effective. Funding should be directed at new and original work. In some cases, PSR will consider continuations of prior PSR projects that have achieved significant results and have a high potential for deployment, scholarly products or large grants. PIs may submit multiple proposals, though it is unlikely that any PI will be awarded more than one grant. PIs with current PSR grants are eligible to apply. However, grants will not be awarded to PIs with outstanding deliverables (draft or final report; research brief; data management plan compliance) on prior PSR grants.

Funds should be spent in a manner that provides publishable results, especially in refereed journals. In general, faculty salary (summer or academic year), student support, and tuition/fee reimbursement are allowed expenses. Proposers are encouraged to budget travel to one domestic conference to present project results. However, Caltrans will not fund travel to TRB conferences. Funding for students is expected in all projects, including research assistant salary and any additional costs for student presentations at conferences. Overhead and fringe benefits should also be included in the budget. A limited amount of travel for data collection purposes, materials, and supplies may be included, provided that they are a direct expense related to completing the work. International travel is not permitted.

Proposers are discouraged from budgeting for computers, equipment, support staff, outside consultants, or any salary that goes beyond normal academic or summer compensation. These may only be included if specific justification is provided as to why the work cannot be completed without the expense. In no case shall PSR partner university employees be hired on a consulting basis.

PSR-funded proposals will be set up as satellite accounts in the proposers' departments at USC. At the partner universities, accounts will be set up within the subcontract per each partner's policies. PIs *will not* have individual contracts or grants from the funding agencies (Caltrans and USDOT).

Funding Guidelines

1. Research project awards have a maximum of \$100,000, inclusive of indirect costs.
2. The typical project duration is one year, but to allow for a mid-semester start date proposals in this cycle will have an end date of May 15, 2025.
3. **Note that conservative and cost-effective budgets are strongly encouraged.** PSR reserves the right to reduce the budgets of submitted proposals. Projects should be budgeted to begin on March 1, 2024 and end by May 15, 2025.

Research Initiation Awards

Research initiation awards are available to tenure track Assistant Professors, with preference for faculty who have not been previously funded for research in transportation. These awards are limited to a maximum of \$35,000. These awards will receive priority consideration over regular awards. Research initiation proposals are subject to the same selection criteria and peer review process as regular proposals.

White Papers

White paper proposals are funded to synthesize existing evidence and identify research gaps for critical policy questions, for a maximum of \$25,000. White papers are aimed at a broad audience of professionals and policy-makers.

Research Project Requirements

All research projects have the following requirements:

1. Semi-annual progress reports conforming to PSR guidelines (Quarterly for Caltrans projects)
2. A Draft Final Report, conforming to PSR guidelines, which must be delivered *30 days prior to the completion date of the project*. The Draft Final Report is subject to peer review. The Draft Final Report should include an executive summary, data management plan (DMP) compliance explanation, and documentation of the research project. It should be complete, original, well organized and accurate; and comply with report content and format guidelines (posted to the PSR website).
3. A Final Report that complies with the review comments and requirements must be delivered within 30 days after the review of the Draft Report. Draft Final and Final Reports are distributed via the PSR websites, and are submitted to PSR sponsors and to various publications databases.
4. A separate statement listing publications, presentations and inventions resulting from research; names of students supported along with their degree status; and a summary of project results. This statement is to be submitted with the Draft Final Report.
5. A two-page Research Brief suitable for a general audience that summarizes the main findings of the research and its contribution to practice or policy. This brief is to be submitted with the Final Report.
6. A brief Biographical Sketch for each of the project's investigators to be submitted with the Draft Final Report. A template for the biographical sketch will be provided with the notification of award. At least one presentation of the funded project's research at a thematic conference or seminar organized by PSR.
7. Timely reporting of all information requested for the PSR Annual Report.
8. Copies of all papers submitted to journals or conferences that are based on the project's research. Copies should be provided to the PSR Administrator.
9. Acknowledgement of PSR support in all work that results from PSR funding, including peer-reviewed publications and conference presentations.
10. **PSR projects require conformance to new data management requirements imposed by DOT.** More here: https://www.mettrans.org/psr_utc_research_overview.
11. **PI ORCID number.** PIs are directed to obtain and provide this number to the center administrator within 30-days of notification of project selection. Numbers can be obtained at <https://orcid.org/register>.

White paper projects have the following requirements:

1. Semi-annual progress reports conforming to METRANS guidelines if the project exceeds 6-months duration.
2. A Draft White Paper submitted 30 days prior to the completion date of the project. The Draft White Paper is subject to peer review.
3. A Final White Paper that responds to the review comments must be delivered within 30 days after the review of the Draft white paper has been received by the author. The white papers are distributed by PSR and METRANS and are submitted to METRANS and PSR sponsors and to various publications databases.
4. A brief Biographical Sketch for each of the project's investigators to be submitted with the Draft white paper. A template for the biographical sketch will be provided with the notification of award. The biographical sketch is to be submitted with the Draft Final Report.
5. Timely reporting of all information requested for the METRANS Annual Report.

Proposal Instructions

Research Proposal Instructions

Research proposals should be succinct and clearly written for a mixed technical and non-technical audience. Proposals are limited to no more than 8 pages in sections 3-7. The budget forms are included in Appendix A for USC.

Use the [PSR Proposal Template](#) to write your proposal.

Each proposal must include the following sections:

1. Project title and basic info
2. Project abstract
3. Description of proposed research, including project purpose, and relevance to PSR themes
4. Methodology and scope of work
5. Tasks, Schedule and Deliverables (steps that will be followed in executing the methodology, and when they will be completed)
6. Description of the expected research product and contribution to practice (e.g. peer-reviewed publication)
7. Description of how the PI will comply with the [PSR Data Management Plan](#) (DMP).
8. Qualifications (the research team's relevant skills and experience that will help ensure success)
9. Budget justification (strong justification should be provided for unusual expenses, e.g., equipment). The extent of student involvement should be clearly stated
10. Reference list
11. Budget (1 page.) Use the form provided in Appendix A for USC. For partner universities, use the budget that is used for the clearance process. Assume a start date of March 1, 2024.
12. Letters of participation, or match funding commitment (attached, any number and length)
Letters of participation are required for any project that involves data collection from private or public entities, access to private or public facilities, or cooperation of private or public entities.
13. Short bios for all investigators and a list of recent (past 5 years or less) publications and funded research projects (2-page maximum)

White Paper Proposal Instructions

White paper proposals must include the following:

1. Cover page
2. One- to two-page description of the proposed topic
3. One-page bio that includes recent relevant publications
4. Budget. (Budget and other forms are included in Appendix A for USC)

Proposals should demonstrate their responsiveness to PSR selection criteria, according to the following guidelines:

<u>Selection Criteria</u>	<u>Most Relevant Section(s)</u>
Relevance to research theme areas	Background/Objective
Quality and research significance / transformative impact	Methodology/Tasks
Student involvement	Budget justification
Reasonableness of budget and cost-effectiveness	Budget justification
Qualifications	Qualifications
Match funding & potential for other grant funding	Budget justification, Methodology/Tasks
Potential to advance US DOT RD&T strategic plan goals	Background/Objective
Prior performance	Prior project accomplishments

Budget Instructions

For USC: Please use your School guidelines in preparing your budget. For the Price School, contact Jenny Tam at jennytam@usc.edu for budget assistance. For VSOE, contact your department grants administrators. Note that tuition cost share is limited to PhD students. Please show the cost share in your budget. Tuition charges are not subject to indirect costs. The indirect cost rate is 50% for USDOT-funded projects, and the difference from the audited rate is to be shown as a cost share. Caltrans has additional budget rules; Principal Investigators of proposals selected for Caltrans funding will be informed of these requirements.

Please note that all proposals must include a budget; proposals submitted without a budget will be determined to be incomplete and rejected.

Submission Instructions

Please use the PSR Proposal Template to write your proposal. Templates can be found on the PSR Research page: https://www.mettrans.org/psr_utc_research_overview.

Proposals responding to this RFP are due no later than Friday, November 10, at 5:00 p.m. PST. Proposal materials must be submitted via [Airtable form](#). Please title your PDF file as LastNameofPI_campus_2023_Proposal.pdf. For example: Boarnet_USC_2023_Proposal.pdf.

Note to PIs: Please do not submit more than one proposal per form. If more than one proposal is to be submitted, please send each in separate forms. If you are submitting more than one pre-proposal, include the first two words of your pre-proposal title in the filename. For example, if a pre-proposal title is "Slow Streets and Dockless Travel: Using a Natural Experiment for Insight into the Role of Supportive," the filename would be: Boarnet_USC_2023_Proposal_Slow Streets.pdf. Proposals received later than the deadline will be rejected. **It is the responsibility of the PI to deliver the proposal by the deadline and**

to confirm receipt.

One copy of the proposal will be retained in the Associate Director's office, and must contain all information on the budget form. A second budget form may omit information that can be used to determine faculty salaries (e.g., months of effort). This budget will be included when the proposal is sent for review. If you submit a proposal with salary information omitted, be sure to provide one electronic copy of EACH budget.

PSR will reject proposals that: (1) are received after the deadline, (2) do not conform to eligibility requirements, (3) are incomplete, or (4) do not conform to thematic requirements.

Further Information

For further information, PSR Director Marlon Boarnet can be reached at (213)740-3696 or boarnet@usc.edu. In addition, check https://www.metrans.org/psr_utc for center organization and links to outside agencies. For further information regarding program rules and procedures contact PSR Administrator Jennifer Hong at jenc@usc.edu.

For up-to-date information on the IRB process at USC, please visit the website of the USC Office for the Protection of Research Subjects: <https://oprsc.usc.edu/>

Appendix A: USC Budget Form

Category	Monthly Salary	x	% of Time on Program	x	Number of Months	=	Budget (\$)
Faculty Salary	_____	x	_____	x	_____	=	_____
Faculty Salary1	_____	x	_____	x	_____	=	_____
Student Support	_____	x	_____	x	_____	=	_____
Type of Student	_____						
Student Support*	_____	x	_____	x	_____	=	_____
Type of Student	_____						
Fringe Benefits	Rate	_____			Total		_____
Tuition	Units	_____	Rate	_____	Total		_____
Conference Travel							_____
Conference Name/Date	_____						
Other Travel							_____
Materials and Supplies							_____
Equipment (list)	_____						_____

Other Direct Expenses (itemize)	_____						_____

Tuition cost share	Units	_____	Rate	_____	Total		_____
Overhead (50%)							_____
TOTAL FUNDS REQUESTED							_____

*Use additional faculty and student lines only if more than one professor or student.

Appendix B: PSR Center Proposal Evaluation Form

(Provided for information only; form will be used by evaluators)

Proposal Title:

Area:

Principal Investigator:

Referee Number:

Evaluation Criteria:

Please rate proposals in each of the categories below, using the following rating scale:

1 = Well below expectations

2 = Below expectations

3 = Meets expectations

4 = Exceeds expectations

5 = Well above expectations

CATEGORY	RATING
Demonstrated relevance to themes of RFP (a requirement)	
Quality and research significance / potential for transformative impact	
Student involvement	
Reasonableness of budget and cost-effectiveness	
Qualifications to perform work/likelihood of completion	
Match funding and potential for attracting grant funding	
Potential to advance US DOT RD&T strategic plan goals	
Prior performance on PSR grants (if applicable)	

Referee's Funding Recommendation (Place an X on the line by your choice)

Highly recommended _____

Recommended _____

Not recommended _____

Referee Comments (add additional pages as needed):