

METRANS
National Center for Metropolitan Transportation Research
www.metrans.org

Request for Proposals for Research
FY 2011 - 2012

RFP Issued: Friday, March 4, 2011
Proposals Due: Monday, April 4, 2011

Regular Awards
Research Initiation Awards

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Introduction

METRANS is a University Transportation Center at University of Southern California (USC) and at California State University, Long Beach (CSULB), headquartered at USC. METRANS is funded by the U.S. Department of Transportation (US DOT) and the California State Department of Transportation (Caltrans) to perform research on transportation problems critical to large metropolitan regions. METRANS emphasizes research directed at solving significant metropolitan transportation problems and is committed to supporting research that responds to the needs of Caltrans and DOT and contributes to knowledge. We expect that METRANS funded research will result in scholarly publications.

METRANS issues requests-for-proposals (RFPs) on an annual basis to support its research program. This RFP will fund projects to start in Fall 2011 or Spring 2012. Projects typically last 12 months. Proposals are requested that address issues in metropolitan transportation through development of improved technology, policies, operations, or management practices. Typically about \$800,000 in new projects is funded each year. In METRANS' prior RFPs, about half of the proposals submitted were funded.

Please note: The University Transportation Center program is funded through the federal surface transportation program. The program legislation was scheduled to expire in 2009. No new legislation has yet been passed, and all programs are operating under a "continuing resolution." Funding for FY 11-12 is therefore uncertain. New research awards are contingent upon funding availability.

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 both USC and CSULB. Submissions instructions and a METRANS cover page are also provided. To provide guidance on the research priorities of our sponsors, research goals are included in the Appendix A.

Eligibility

Regular tenure track full-time faculty members and research faculty eligible to serve as Principal Investigator at the University of Southern California or California State University, Long Beach, are eligible to serve as Principal Investigators. Proposals may include multiple investigators. Proposals may also include as Co-Principal Investigators research or non-tenure track USC and CSULB faculty, as well as regular tenure track full-time faculty members from other California universities. Proposals may not include Co-Principal Investigators from outside California.

Research Topics

Each proposal must be directed at ground transportation in one of four focus areas:

- Commercial goods movement and international trade issues in metropolitan areas
- Mobility of urban populations
- Highway infrastructure and infrastructure renewal
- Safety, security and vulnerability

Proposers are encouraged to develop proposals that respond to the needs of Caltrans, the US DOT and to its modal agencies. We encourage participation of public and private organizations. We suggest PI's contact the METRANS Director in advance if there is any doubt as to whether their topic is appropriate.

Area 1: Commercial Goods Movement and International Trade

Area 1 is concerned with how crowded and congested cities can efficiently move goods and provide transportation infrastructure to support economic growth. Productivity issues associated with international goods movement are of particular interest. This includes intermodal facilities, port operations and ground transportation within metropolitan regions. Productivity can be studied in a variety of ways, such as new technologies that improve cargo handling, information technology to optimize the allocation of resources, and policies that will promote efficient goods movements. Another priority topic is research on policies and programs for the State of California in the area of goods movement, including safety and environmental aspects of goods movement.

Area 2: Mobility of Urban Populations

Area 2 is concerned with mobility problems in large, highly decentralized cities, where many residents do not own automobiles, transit service does not reach all areas and where congestion on roadways is a major problem. Priority topics include research on methods for improving the mobility and accessibility of disadvantaged populations and research on innovative ways that buses and other rubber tire vehicles can be used to deliver high-quality transit service. Areas of interest also include improvements in the configuration of public transit services, delivery and efficiency of services, and organizational structure/management of services.

Area 3: Highway Infrastructure

Area 3 is concerned with ensuring and improving the supply of transportation services delivered in metropolitan areas, with an emphasis on providing self-sustaining, environmentally compatible transportation infrastructure that is durable and efficient and that requires fewer human, economic, and environmental resources to produce, operate, and maintain. This area includes research on materials, infrastructure components, systems, and policies. Topics include 1) monitoring, maintenance, rapid repair, rehabilitation, renewal, retrofit, and life extension of transportation infrastructure; including procedures, standards, technologies, and materials; 2) financing requirements and techniques, including new pricing options.

Area 4: Safety, Security and Vulnerability

Area 4 is concerned with safety and security issues of large metropolitan areas, where the concentration of modal traffic presents risks to pedestrians, drivers, and transit passengers, and where the concentration of major transportation facilities as well as population now generates significant vulnerability to both natural and man-made disasters. Topics include 1) personal safety and security on public facilities, including pedestrian safety, reduction of crash risk, public transit safety; 2) security and vulnerability of major infrastructure, including vulnerability assessment, detection and surveillance methods and policies with emphasis on goods movement; 3) safety and risk mitigation, including loss estimation and seismic risk analysis of infrastructure components, structures, and networks.

Selection Criteria

Both transportation researchers and practitioners will evaluate proposals. Proposals will be selected on the basis of these evaluations along with programmatic priorities. Proposals will compete both within topics and across topics. METRANS does not guarantee that proposals will be funded in all topic areas.

Reviewers will evaluate proposals according to the following selection criteria:

- Demonstrated relevance to theme of RFP (a requirement)
- Innovation and research significance
- Student involvement in the form of research that fulfills degree requirements
- Collaboration across campuses and disciplines
- Likelihood of successful completion
- Reasonableness of budget and cost-effectiveness
- Qualifications to perform work
- Potential for attracting grant funding from other sources
- Match funding; participation from outside organizations
- Prior performance on METRANS grants, including scholarly publications and related extramural funding (for those funded previously)
- Status of current METRANS project (if applicable)

Proposals that involve collaboration between CSULB and USC, as well as interdisciplinary proposals that cross school boundaries are encouraged.

Proposers are encouraged to communicate with members of the METRANS Advisory Committee or other outside organizations in the development of research proposals. A list of Advisory Committee members can be found in the directory page of www.metrans.org. Commitments of participation from outside of METRANS will be a consideration in making awards. Any project that involves data collection, access to facilities, or cooperation of private or public entities must include a letter of participation from the entity.

Match funding is particularly encouraged; proposals that include matching funds from local public or private sources will receive preference. For additional information, contact Vicki Valentine at victoriv@usc.edu.

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 METRANS projects, for example the USC School of Engineering Merit Research Program, or the USC McNair Scholars Programs. Proposers are strongly encouraged but not required by this RFP to explore such opportunities with their schools and universities.

The METRANS Executive Committee will make final project selections, taking into account referee reports, programmatic priorities, and prior project performance. The Executive Committee members consist of four USC faculty members, three CSULB faculty members, and the Executive Director of the Center for International Trade and Transportation at CSULB. Executive Committee members are allowed to submit proposals, but are not allowed to be present during deliberations and voting related to their proposals.

Funding Guidelines and Restrictions

Budgets should be conservative and cost-effective. Funding should be directed at new and original work. In some cases, METRANS will consider continuations of prior METRANS projects that have achieved significant results and have a high potential for deployment, scholarly products or large grants. We do not award more than one project to any PI, though PIs may, if they choose, submit multiple proposals. At any given time, eligible faculty may serve as PI on only one METRANS grant. PIs may serve as Co-PI on no more than one other METRANS grant at a time.

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 conference to present project results. 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 and materials and supplies may be included, provided that they are a direct expense related to completing the work. International travel is not permitted, unless specific justification is provided and approved by both Caltrans and US DOT.

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 the case of joint projects with tenure track, full-time faculty from other California universities, the second university activity must be budgeted as a subcontract to that university. In no case shall CSULB or USC employees be hired on a consulting basis. These types of expenses will be scrutinized by the sponsoring agency.

METRANS funded proposals will be set up as satellite accounts in the proposers' departments. PIs *will not* have individual contracts or grants from the funding agencies (Caltrans and US DOT).

Funding Guidelines:

- Project awards have a maximum of \$90,000 per year.
- The typical project duration is one year.
- To encourage collaborative efforts between USC and CSULB, joint projects involving Principal Investigators at both campuses have a maximum of \$180,000 per year, with a maximum for each campus of \$90,000 per year.
- 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 \$35,000 for one year. These awards will receive priority consideration over regular awards.

Note that conservative and cost-effective budgets are strongly encouraged. METRANS reserves the right to reduce budgets of submitted proposals. Note to those with current METRANS grants: PIs on current METRANS grants may submit proposals. However, new awards are subject to satisfactory completion of the current award. Projects should be budgeted to begin on August 15, 2011 and end by August 14, 2012.

Project Requirements

All funded projects have the following requirements:

- Quarterly progress reports, conforming to Caltrans guidelines.
- Draft Final Report, conforming to METRANS style guidelines (<http://www.metrans.org/research.htm>), must be delivered 30 days prior to completion date of the project. The Draft Final Report is subject to peer review. The Draft Final Report should document the research project, and be complete, original, well organized and accurate. Draft Final and Final Reports are distributed via the METRANS website, and are submitted to METRANS sponsors and to various publications data bases.
- 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 Submitted with the Draft Final Report.
- A one page research summary conforming to METRANS guidelines submitted with the Draft Final Report
- One presentation of research at a thematic conference organized by METRANS, and located in the Los Angeles region
- Timely reporting of all information required for the METRANS Annual Report
- Copies of all papers submitted to journals or conferences that are based on the project research should be provided to the METRANS Administrator
- METRANS support should be acknowledged in all work that results from METRANS funding

Proposal Instructions

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. Budget and other forms are included in Appendix B. Each proposal must include the following sections:

1. Cover page (use form in Appendix B)
2. Project objective and project abstract (see research page at www.metrans.org for examples; no more than one page)
3. Background and motivation for the topic to be addressed (problem to be addressed, what has been done previously, why it is important, and relevance to METRANS research areas)
4. Methodology (the methodology by which project objectives will be accomplished)
5. Tasks, Schedule and Deliverable (steps that will be followed in executing the methodology, and when they will be completed)
6. Description of the research product
7. Qualifications (the research team's relevant skills and experience that will help ensure success)
8. Budget justification (strong justification should be provided for unusual expenses, e.g., equipment. The extent of student involvement should be clearly stated)
9. Reference List (no limit)
10. Budget (1 page, use form in Appendix B). Please see relevant university budget instructions below)
11. Prior Project Accomplishments (1 page maximum. List publications, students who have received support from prior METRANS funding, and other grants received as a result of METRANS funding. Provide information on any policies, technologies, or products implemented as a result of the research).
12. Letters of participation, or match funding commitment (attached, any number and length) *Please note that 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 bio and list of recent publications and funded research projects (2 page maximum).

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

Selection Criteria	Most Relevant Section(s)
Relevance to METRANS research areas	Background/Objective
Innovation and research significance	Methodology/Tasks
Student involvement	Budget justification
Collaboration	Qualifications
Likelihood of successful completion	Methodology/Tasks
Reasonableness of budget and cost-effectiveness	Budget justification
Qualifications	Qualifications
Potential for other grant funding	Methodology/Tasks
Match funding	Budget justification
Prior performance	Prior project accomplishments
Status of current METRANS projects	Prior project accomplishments

Budget Instructions for USC

Please use your School guidelines in preparing your budget. For SPPD, see http://www.usc.edu/schools/sppd/intranet/research_admin.html for proposal and budget instructions. For VSOE, see your department grants administrators. Note that the tuition cost share is limited to PhD student positions. Please show the cost share on your budget. Tuition charges are not subject to overhead. The indirect cost rate is 50%

Budget Instructions for CSULB

Budget guidelines for CSULB faculty are contained in Attachment 2. Proposals submitted by CSULB faculty must be approved via the University's internal clearance process prior to submission. Early budget consultation with the CSULB Foundation and/or the Office of University Research is recommended. Once the budget is finalized, internal clearance will be initiated by the Office of University Research in consultation with you.

CSULB faculty are encouraged to begin the process by submitting a *Notice of Intent to Submit a Proposal for External Funding* at <http://www.csulb.edu/divisions/aa/research/our/information/forms/intent/>. For further assistance, please contact your college's pre-award specialist, either David Smith at 562 985-5330 or Annette Lujan at 562 985-1567.

Submission Instructions

Deliver one printed copy and a copy on CD in MS Word or Adobe of each proposal to the METRANS or CITT office listed below on or before 5:00 pm on Monday, April 4, 2011. **Proposals received later than this deadline will be returned.** It is the responsibility of the PI to deliver the proposal by the deadline.

One copy of the proposal will be retained in the 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 chose to submit a proposal with salary information omitted, please be sure to provide one hard and one disk copy of EACH budget (two hard and two disk copies total).

Please mail or deliver proposals to one of the two following locations:

Vicki Valentine, METRANS Administrator
School of Policy, Planning, and Development
University of Southern California
650 Childs Way, Lewis Hall (RGL) 238
Los Angeles, CA 90089-0626
(213) 821-1025

Alix Traver, Project Coordinator
Center for International Trade and Transportation
California State University Long Beach
1000 Studebaker Road, Suite 3
Long Beach, CA 90815
(562) 985-2876

METRANS will return proposals that: (1) arrive at the METRANS or CITT office later than 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, METRANS Director Genevieve Giuliano can be reached at 213-740-3956 or giuliano@usc.edu . In addition, check www.metrans.org for information on current projects, center organization, and links to outside agencies.

For further information regarding program rules and procedures contact the METRANS Administrator, Vicki Valentine at 213-821-1025 or victoriv@usc.edu.

Appendix A

Sponsor Agency Strategic Research Goals

Caltrans Strategic Research Questions

Mobility
M1 DATA - How can we improve/enhance data collection and interpretation across modes?
M2 INTEGRATED CORRIDOR MANAGEMENT - How can we optimize movement through a corridor?
M5 TRAVEL DEMAND MANAGEMENT (REAL TIME) - What are the most effective real-time strategies to influence travel demand?
M6 TRAVEL DEMAND MANAGEMENT (SYSTEM ELEMENTS) - What transportation system elements and land use options are most effective in reducing travel demand by enhancing choices?
Goods Movement
M8 GOODS MOVEMENT - How can we improve goods movement throughout the State to generate jobs, increase mobility and relieve traffic congestion, improve air quality and protect public health, enhance public and port safety and improve California's quality of life?
Safety
SF1 DESIGN/CONSTRUCTION - What design features and construction standards can be utilized to improve highway safety?
SF 4 PROACTIVE SAFETY - What can Caltrans do to avoid collisions?
Climate Change
ST6 CLIMATE CHANGE- How can Strategic Growth Planning be advanced through addressing climate change adaptations and mitigations?
Infrastructure
ST9 TRANSPORTATION INFRASTRUCTURE (e.g., Pavement, Structures, Maintenance Stations, Office Buildings, and others not listed) - How can we optimize the performance of our transportation infrastructure?

Source: Caltrans, 2009

USDOT Strategic Goals, RD&T Strategies, Emerging Research Priorities

USDOT Strategic Goal	RD&T Strategies related to METRANS	Emerging research priorities related to METRANS
Safety Transportation-related deaths and injuries	Causal factors and risk Mitigation New technology	Enhanced safety data
Reduced congestion Urban congestion Capacity & PPPs Advanced technology Freight Air transport Accessibility Infrastructure	Reduce passenger and freight congestion Next generation technologies Planning, operations, management Underserved areas and populations Transportation research capability	Policy research and technologies Global logistics
Environmental stewardship Reduced environmental impacts Streamlined review	Mitigate impacts	Energy efficiency and alternative fuels
Security, preparedness and response Intelligence Preparedness Response	Reduce vulnerability; preparedness and recovery	
Organizational excellence Human capital Financial, budget performance E-gov't		

Source: USDOT Strategic Plan, 2006-2011

FTA Strategic Research Goals

FTA Strategic Research Goals	Strategic objectives related to METRANS
Research leadership	Research supports national goals
Transit use	Best practices and technologies Targeted populations
Capital and operating efficiencies	Transit efficiency
Safety and emergency preparedness	Transit safety
Environment and energy independence	Energy efficiency and emissions

Source: FTA Strategic Research Plan, 2005

Appendix B
Budget Information and Forms

USC Budget Form

Category	Monthly Salary	x	% of Time on Program	x	Number of Months	=	Budget (\$)
Faculty Salary	_____	x	_____	x	_____	=	_____
Faculty Salary ¹	_____	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	_____						

¹ Use additional faculty and student lines only if more than one professor or student.

CSULB Budget Form

Complete areas in yellow

Category				Budget \$
	Annual Salary		Release Time Units or % of Effort	
Faculty Salary	x		+	\$0
Faculty Salary ¹	x		#	\$0
			Total Salary	\$0
		Total Budgeted Salary		
Faculty Fringe Benefits (Release Time)		\$0	x	41%
Faculty Fringe Benefits (Overload/Summer)		\$0	x	8%
				Total Fringe Benefits
				\$0
	Hourly Rate		# Hours	
Student Support	x			\$0
		Student Total \$		
Student Fringe Benefits		\$0	x	8%
				Total Student \$
				\$0
Conference Travel				
Other Travel				
Materials and Supplies				
Equipment (list)				
Other Direct Expenses (itemize)				
Total Direct Cost				\$0
			Indirect Cost %	
Indirect Costs (F&A)		\$0	X	44.5%
TOTAL FUNDS REQUESTED				\$0

¹ Use additional faculty lines only if there is more than one professor.

METRANS Cover Page

Title _____

Theme _____

Topic _____

Principal Investigator _____

Mailing Address _____

E-mail _____

Phone _____

Fax _____

Co-Principal Investigator _____

Are you submitting this proposal elsewhere, or are you currently receiving funding in the same area of research? Yes _____ No _____

If yes, please describe circumstances and funding source

METRANS 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
1. Demonstrated relevance to theme of RFP	
2. Innovation and research significance	
3. Student involvement	
4. Collaboration across campuses and disciplines	
5. Likelihood of successful completion	
6. Reasonableness of budget and cost- effectiveness	
7. Qualifications to perform work	
8. Potential for attracting grant funding from other sources	
9. Match funding; participation from outside organizations	
10. Overall Rating	

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

Fund as Submitted _____

Fund with modifications _____ (explain on second page)

Do Not Fund _____ (explain on second page)

Referees Comments (add additional pages as needed):