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

Request for Proposals for Research
DUE: May 15, 2006
Regular Awards
Research Initiation Awards

METRANS is a University Transportation Center at University of Southern California and at California State University, Long Beach, headquartered at University of Southern California. 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 that are critical to large metropolitan regions. METRANS emphasizes research that is directed at solving significant metropolitan transportation problems and also results in publications in refereed journals.

METRANS issues requests-for-proposals (RFPs) on an annual basis to support its research program. This RFP will fund projects beginning in fall, 2006. Projects will typically last 12 months. A limited number of projects may be funded for up to 2 years. Proposals are requested that address issues in metropolitan transportation through development of improved technology, policies, operations, or management practices. The total funding available under this RFP is approximately $1,000,000. In METRANS’ prior RFPs, about half of the proposals submitted were funded.

Eligibility

Regular tenure track full-time faculty members and research faculty eligible to serve as Principal Investigator at the University of Southern California and 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.

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 the California Department of Transportation and US Department of Transportation and to the (see Attachments D and E). Participation of public and private organizations is encouraged. It is suggested that proposers contact the METRANS Director in advance if they have 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
- Relevance to solving transportation problems in metropolitan regions
- Student involvement in the form of research that fulfills degree requirements
- Collaboration across campuses and disciplines
- Reasonableness of budget and cost-effectiveness
- Qualifications to perform work
- Likelihood of successful completion
- Match funding; participation from outside organizations
- Prior METRANS performance (for those funded previously).

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

Proposals requesting more than one year of funding must fully justify the merits of a longer duration project.

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. Match funding is particularly encouraged; proposals that include matching funds from local public or private sources will receive preference. For additional information, contact Jacquette Givens at jacquett@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.

In accordance with the USC/CSULB Partnering Agreement, 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 Restrictions**

Budgets should be conservative and cost-effective. Funding should primarily 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 or scholarly products. We do not expect to award more than one project to any PI, though PIs may, if they choose, submit multiple proposals.

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 for 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 budgeted expense. In the case of joint projects with tenure track, full-time faculty from other California universities, the second university activity should 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:**

1. Project awards have a maximum of $90,000 per year. The typical project duration is one year. Project proposals for up to a maximum of two years may be submitted; only a limited number of two year projects may be funded.
2. 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.
3. 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.

For approved two year projects, *second year funding is contingent on funding availability*, timely and adequate research progress on the part of the investigator(s), and METRANS program priorities.

For current investigators, new project funding is contingent on successful completion of current projects. *New accounts will not be set up until current projects are completed.*

**Duration**

Projects should be budgeted to begin 08/15/06 and end prior to 07/31/07. In the case of two-year projects, the end date should be prior to 07/31/08.

**Project Requirements**

All funded projects have the following requirements:

- For two year projects, investigators are required to submit a Year 1 progress report 11 months from the start of the project. The progress report must include a summary of research accomplishments to date including a listing of any submitted publications, presentations, or inventions and a detailed research plan for the second year work. The METRANS Executive Committee will evaluate the Year 1 report and determine whether continuation of the project is merited.

- Final Report, conforming to METRANS style guidelines (http://www.metrans.org/research.htm), must be delivered 30 days prior to completion of the project. The Draft Final Report is subject to Executive Committee review. The Final Report should document the research project, and be complete, original, well organized and accurate. METRANS will distribute the report.

- 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

- 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.

- Quarterly progress reports, conforming to Caltrans guidelines.
- 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 Elements**

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. Each proposal must include the following elements:

1. **Cover page** (use attached form or facsimile)

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 theme.

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. Description of the research product.

6. **Qualifications**
   The research team's relevant skills and experience that will help ensure success.

7. **Budget Justification**
   Strong justification should be provided for unusual expenses (e.g., equipment). The extent of student involvement should be clearly stated.

8. **Reference List** (no limit)

9. **Budget** (1 page, using attached form or facsimile)
   USC proposers please see budget instructions below.

10. **Prior Project Accomplishments** (1 page maximum).
   List publications based on prior METRANS funding, list students who have received support from prior METRANS funding, and provide descriptions of major METRANS accomplishments.
11. **Letters of participation, or match funding** (attached, any number and length)

12. **Vita** (attached, 2 page maximum).
   Provide a short bio and list of recent publications and funded research projects.

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

<table>
<thead>
<tr>
<th>Selection Criteria</th>
<th>Most Relevant Section(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovation and long-term significance</td>
<td>Methodology</td>
</tr>
<tr>
<td>Importance to solving transportation problems</td>
<td>Background/Objective</td>
</tr>
<tr>
<td>Relevance to theme of RFP (a requirement)</td>
<td>Background/Objective</td>
</tr>
<tr>
<td>Reasonableness of budget and cost-effectiveness</td>
<td>Budget Justification</td>
</tr>
<tr>
<td>Qualifications</td>
<td>Qualifications</td>
</tr>
<tr>
<td>Likelihood of successful completion</td>
<td>Methodology/Tasks/Qualifications</td>
</tr>
<tr>
<td>Student involvement</td>
<td>Budget Justification</td>
</tr>
</tbody>
</table>

**Budget Instructions for USC**

Please use your School guidelines in preparing your budget. For VSOE and SPPD, budgets should include 25% of annual tuition charges as direct costs for each research assistant position. For example, a 50% RA position requires 36 units, so 9 units should be charged as part of direct costs. SPPD and VSOE will match the remaining 75% of tuition as a cost share. Please show the cost share on your budget. Tuition charges are not subject to overhead.

**Submittal**

Six printed copies and a copy on diskette in MS Word or pdf of each proposal should be delivered to the METRANS office listed below on or before 5:00 p.m. on May 15, 2006. **Proposals received later than this deadline will be returned.**

One copy of the proposal will be retained in the Director’s office, and must contain all information on the budget form. The other five copies may omit information that can be used to determine faculty salaries (e.g., months of effort). These copies will be sent for review.

Mail or deliver proposal to:

Jacquette Givens, Administrator  
METRANS  
School of Policy, Planning, and Development  
University of Southern California  
650 Childs Way  
RGL 238  
Los Angeles, CA  90089-0626
METRANS will return proposals that: (1) arrive at the METRANS 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, Jacquette Givens at 213-821-1025 or jacquett@usc.edu.
**ATTACHMENT A: METRANS BUDGET FORM**

<table>
<thead>
<tr>
<th>Category</th>
<th>Monthly Salary</th>
<th>% of Time on Program</th>
<th>Number of Months</th>
<th>Budget ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty Salary</td>
<td>_______</td>
<td>x _______</td>
<td>x _______</td>
<td>_______</td>
</tr>
<tr>
<td>Faculty Class/Step/Range (CSULB only)</td>
<td>_______________________________</td>
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<tr>
<td>Faculty Salary(^1)</td>
<td>_______</td>
<td>x _______</td>
<td>x _______</td>
<td>_______</td>
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<tr>
<td>Faculty Class/Step/Range (CSULB only)</td>
<td>_______________________________</td>
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<tr>
<td>Student Support</td>
<td>_______</td>
<td>x _______</td>
<td>x _______</td>
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<tr>
<td>Type of Student</td>
<td>_______________________________</td>
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<tr>
<td>Student Support</td>
<td>_______</td>
<td>x _______</td>
<td>x _______</td>
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<tr>
<td>Type of Student</td>
<td>_______________________________</td>
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<tr>
<td>Fringe Benefits Rate</td>
<td>_______</td>
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<td>_______</td>
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<tr>
<td>Type of Student</td>
<td>_______________________________</td>
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<tr>
<td>Conference Travel</td>
<td>_______________________________</td>
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<tr>
<td>Conference Name/Date</td>
<td>_______________________________</td>
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<tr>
<td>Other Travel</td>
<td>_______________________________</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Materials and Supplies</td>
<td>_______________________________</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Equipment (list)</td>
<td>_______________________________</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Other Direct Expenses (itemize)</td>
<td>_______________________________</td>
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<tr>
<td>Overhead</td>
<td>_______________________________</td>
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<td></td>
</tr>
</tbody>
</table>

**TOTAL FUNDS REQUESTED**

\(^1\) Use additional faculty and student lines only if more than one professor or student.
ATTACHMENT B: METRANS COVER PAGE

Title

__________________________________________________________
__________________________________________________________

Theme

__________________________________________________________

Topic Name/Number

__________________________________________________________

Principal Investigator

__________________________________________________________

Mailing Address

__________________________________________________________
__________________________________________________________

E-mail

__________________________________________________________

Phone

__________________________________________________________

Fax

__________________________________________________________

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

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
**ATTACHMENT C: METRANS Center Proposal**

**Evaluation Form (provided for information only; form will be used by evaluators)**

**Proposal**

**Title:**

<table>
<thead>
<tr>
<th><strong>Area:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

**Principal Investigator:**

<table>
<thead>
<tr>
<th><strong>Referee Number:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

**Evaluation Criteria:**

<table>
<thead>
<tr>
<th>Please rate proposals in each of the following categories:</th>
<th><strong>Place an X on the line for One Choice of each Criterion</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Well Below Expectation</td>
</tr>
<tr>
<td></td>
<td>Below Expectation</td>
</tr>
<tr>
<td></td>
<td>Meets Expectation</td>
</tr>
<tr>
<td></td>
<td>Exceeds Expectation</td>
</tr>
<tr>
<td></td>
<td>Well Exceeds Expectation</td>
</tr>
<tr>
<td>1. Innovation and research significance</td>
<td>____           ____           ____           ____           ____</td>
</tr>
<tr>
<td>2. Relevance to solving transportation problems in metropolitan regions</td>
<td>____           ____           ____           ____           ____</td>
</tr>
<tr>
<td>3. Student involvement in the form of research that fulfills degree requirements</td>
<td>____           ____           ____           ____           ____</td>
</tr>
<tr>
<td>5. Demonstrated relevance to theme of RFP</td>
<td>____           ____           ____           ____           ____</td>
</tr>
<tr>
<td>7. Impact of funding on research program</td>
<td>____           ____           ____           ____           ____</td>
</tr>
<tr>
<td>8. Qualifications to perform work</td>
<td>____           ____           ____           ____           ____</td>
</tr>
<tr>
<td>9. Likelihood of successful completion</td>
<td>____           ____           ____           ____           ____</td>
</tr>
<tr>
<td>10. Overall Rating</td>
<td>____           ____           ____           ____           ____</td>
</tr>
</tbody>
</table>

Referees Funding Recommendation *(Place an X on the line by your choice)*

1. Fund as Submitted   Yes _______   No _______
2. Fund with modifications (explain on second page) Yes _______   No _______
3. Do Not Fund ________

(Next Page)
METRANS Center Proposal
Evaluation Form

Side 2

Proposal
Title: __________________________________________

Area: __________________________________________

Principal Investigator: _____________________________

Please note this page will be provided to the author.

Referees Comments (add additional pages as needed):
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________

Thank You!
## ATTACHMENT D: CALTRANS STRATEGIC RESEARCH GOALS

<table>
<thead>
<tr>
<th>Strategic Research Direction for Fiscal Year 06/07</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Goal: Safety</strong></td>
<td>Provide the safest transportation system in the nation for users and workers.</td>
</tr>
<tr>
<td><strong>Strategic Focus:</strong> Driver Behavior</td>
<td>In the past, the Department’s main safety focus has been on the system itself. National statistics report that driver behavior is a major factor in 93% of all traffic incidents.¹ Research is needed to better understand driver behavior, and how it plays a role in safety conscious planning at local, regional, and state levels.</td>
</tr>
<tr>
<td><strong>Strategic Focus:</strong> Transportation Security</td>
<td>Following September 11, 2001, transportation system security became a major priority. Research is needed to ensure adequate emergency operations, preparedness and management. The Department needs the tools, techniques, information, and understanding to identify security gaps and weaknesses and prevent, prepare for, respond to, and recover from both natural and man-made disasters.</td>
</tr>
<tr>
<td><strong>Strategic Focus:</strong> Worker’s Safety</td>
<td>The Department’s aim is to provide services to construct and maintain facilities in the safest possible manner. Current research addresses issues such as vehicle intrusion into the work zone (e.g., development of the Balsi beam, and evaluation of the “Slow for the Cone Zone” campaign). More research is needed to evaluate the causes of worker injuries and identify the most effective ways to reduce their frequency and severity.</td>
</tr>
<tr>
<td><strong>Goal: Flexibility</strong></td>
<td>Provide mobility choices through strategic partnerships.</td>
</tr>
<tr>
<td><strong>Strategic Focus:</strong> Land Use Strategies</td>
<td>The Department has a vested interest in working with counties, cities and the private sector to make land use and the transportation system work together more effectively. Research is needed to better understand transportation land-use strategies and their effectiveness in reducing traffic congestion, increasing use of transit and other alternate modes, and promoting economic development.</td>
</tr>
<tr>
<td><strong>Strategic Focus:</strong> Market-Based Mobility Strategies</td>
<td>Market-based approaches – i.e., that align prices with consumer demand and transportation supply – can result in more efficient use of the transportation system. Research is needed to determine how these strategies can be used most effectively, and how the Department can work with its partners to implement them.</td>
</tr>
<tr>
<td><strong>Strategic Focus:</strong> Transit/Alternative Modes</td>
<td>Research has shown that the public wants a transit system that is integrated, reliable, safe and comfortable. They are willing to pay more taxes to fund a system that meets their needs. Continued research is needed to develop innovative approaches that will appeal to a broad market, including those who currently rely on single occupant vehicles, and approaches that take a systems perspective – e.g., integrating transit and highway modes, and addressing connectivity issues, such as first mile/last mile.</td>
</tr>
<tr>
<td><strong>Goal: Mobility</strong></td>
<td>Optimize transportation throughput and provide dependable travel times.</td>
</tr>
<tr>
<td><strong>Strategic Focus:</strong> Real Time Traveler Information</td>
<td>The Department is seeking innovative ways to address the traveling public’s desire for real time traveler information. The private sector provides potential partners in this effort. Research is needed to determine the impact of real-time information on traveler behavior, and the most effective technologies and partnership opportunities.</td>
</tr>
<tr>
<td>Strategic Focus: Incident Management</td>
<td>Nationally, incidents cause well over half of the non-recurring traffic delays in urban areas, and 100% in rural areas. Accidents and fatalities result in close to $200 billion per year in economic loss. Effective incident management can reduce traffic delays and improve public safety. Research is needed to find more effective ways to identify, respond to, and recover from incidents.</td>
</tr>
<tr>
<td>Strategic Focus: Roadway Maintenance within Environmental Considerations</td>
<td>The public has a high expectation of keeping roads clear of snow, ice, mud and other blockages. The Department currently does a good job of keeping the roads clear, but more research is needed to identify the most effective ways to operate with the least environmental impacts.</td>
</tr>
<tr>
<td>Strategic Focus: Operational improvements to optimize throughput</td>
<td>Nearly half of California’s urban highways are congested and new transportation facilities will not be sufficient to meet future traffic demand. Operational improvements have been shown to increase the efficiency and safety of the transportation system. Research is needed to identify and evaluate improvements that can be the most cost-effective at increasing operating efficiency, system management and connectivity of the existing transportation system.</td>
</tr>
<tr>
<td>Strategic Focus: Goods Movement</td>
<td>The safe and efficient movement of goods to and from California’s factories, fields, ports and terminals is an essential part of the State’s transportation system. Research is needed to improve safety, efficiency and security in goods movement.</td>
</tr>
<tr>
<td>Goal: Stewardship</td>
<td>Preserve and enhance California’s resources and investments.</td>
</tr>
<tr>
<td>Strategic Focus: Linkages between transportation investments and the 3-Es</td>
<td>The Department is committed to meeting its responsibilities in ways that support economic development and ensure equity while meeting its responsibilities to protect the environment. Research is needed to develop approaches and tools for systematically integrating environmental, economic and community requirements into the analysis, planning and design of transportation system capacity.</td>
</tr>
<tr>
<td>Strategic Focus: System Preservation</td>
<td>The existing transportation system will need to be maintained and rebuilt in future years. Research is needed to develop a consistent, systematic approach to performing highway renewal that is rapid, causes minimum disruption, and produces long-lived facilities.</td>
</tr>
<tr>
<td>Strategic Focus: Context Sensitive Solutions</td>
<td>“Context Sensitive Solutions” balance community, aesthetic, historic, and environmental values with transportation safety, maintenance, and performance goals. Department policy requires that Context Sensitive Solutions be used to plan, design, construct, maintain, and operate the transportation system. Research is needed to help the department best implement this policy.</td>
</tr>
<tr>
<td>Strategic Focus: Performance Measures</td>
<td>Developing measures to assess performance is a standard private sector business practice. The Department has been developing and implementing performance measures to enhance organizational, system and projects performance. Research is needed to identify the most meaningful performance measures, and to more fully integrate performance measurement into the Department’s decision-making process.</td>
</tr>
<tr>
<td>Goal: Delivery</td>
<td>Improve delivery of projects and services</td>
</tr>
<tr>
<td>Strategic Focus: Innovative Project Development and Procurement Methods</td>
<td>Research is needed to evaluate potential benefits and tradeoffs for expanded use of innovative project development and procurement methods, and to identify where these methods are appropriate options.</td>
</tr>
<tr>
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</tr>
<tr>
<td>Strategic Focus: Innovative Financing</td>
<td>Ensuring adequate revenue to support the state’s transportation system requires the protection of existing revenue sources and development of new alternative sources. Research is needed to identify alternative sources of funding to support transportation investments, including expanded opportunities for public/private partnerships.</td>
</tr>
<tr>
<td>Strategic Focus: Strategic Investment</td>
<td>Transportation improvements that are most cost effective, or provide the most improvement in passenger travel time and safety, or goods moved per dollar of investment, provide the best return on investment. Research is needed to identify, and then implement, more effective methods for measuring potential return on investment for a wide range of transportation improvements.</td>
</tr>
<tr>
<td>Strategic Focus: Accelerated Project Delivery</td>
<td>The Department is committed to the efficient and effective delivery of transportation projects and services, while meeting environmental and other requirements. Research is needed to identify and implement best practices and constructive improvements to the project development process to accelerate project delivery.</td>
</tr>
</tbody>
</table>

Note: Pavement, Seismic and Stormwater are separate research programs.

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attachment e: usdot/fhwa strategic research goals

fhwa strategic goals for fy 2004

six strategic goals-safety, mobility and productivity, global connectivity, environment, national homeland security, and organizational excellence—are addressed in the fy 2004/2005 plan.

- safety-continually improve highway safety.
- mobility and productivity-preserve, improve, and expand the nation's highway transportation system while, at the same time, enhancing the operation of the existing highway system and intermodal connectors.
- global connectivity-promote and facilitate a more efficient domestic and global transportation system that enables economic growth.
- environment-protect and enhance the natural environment and communities affected by highway transportation.
- national homeland security-improve highway security and support national defense mobility.
- organizational excellence-advance fhwa's ability to manage for results and innovation.

the vital few

the vital few are the key areas with performance gaps that must be addressed for fhwa to be successful in the short-term. achieving performance improvements in the following areas was a priority during fy 2004:

- safety.
- congestion mitigation.
- environmental stewardship and streamlining.