



Region 2  
University Transportation Research Center

## **2012-13 UTRC REQUEST FOR PROPOSALS**

**Issued: March 28, 2012**

**Revised: June 9, 2012**

**Submittal Deadline June 30, 2012**

*Funding decision will be made as proposals are received until the deadline date or all funds available for this program are used.*

**UTRC Contact:**

**Penny Eickemeyer, Associate Director for Research**

Email: [peickemeyer@utrc2.org](mailto:peickemeyer@utrc2.org)

Phone: (212) 650-8074

or

**Ellen Thorson, Ph.D., Senior Research Fellow**

Email: [ethor@utrc2.org](mailto:ethor@utrc2.org)

Phone: (212) 650-8144

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

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## **Background:**

The Region 2 University Transportation Research Center (UTRC) is one of ten original University Transportation Centers established in 1987 by the U.S. Congress. These Centers were established with the recognition that transportation plays a key role in the nation's economy and the quality of life of its citizens. University faculty members provide a critical link in resolving our national and regional transportation problems while training the professionals who address our transportation systems and their customers on a daily basis.

The UTRC was established in order to support research, education and the transfer of technology in the field of transportation. Success in many competitions for designation as a University Transportation Center in the U.S. Department of Transportation (US DOT) program has provided continued funding. The theme of the Center is "Planning and Managing Regional Transportation Systems in a Changing World." UTRC represents USDOT Region 2, including New York, New Jersey, Puerto Rico and the U.S. Virgin Islands. Functioning as a consortium of seventeen major Universities throughout the region, UTRC is located at the CUNY Institute for Transportation Systems at The City College of New York, the lead institution of the consortium. The Center, through its consortium, an Agency-Industry Council and its Director and Staff, supports research, education and workforce development, and technology transfer under its theme.

## **UTRC Consortium Members:**

- City University of New York (CUNY)
- Clarkson University (Clarkson)
- Columbia University (Columbia)
- Cornell University (Cornell)
- Hofstra University (Hofstra)
- New Jersey Institute of Technology (NJIT)
- New York University (NYU)
- Polytechnic Institute of NYU (Poly)
- Rensselaer Polytechnic Institute (RPI)
- Rochester Institute of Technology (RIT)
- Rowan University (Rowan)
- Rutgers University (Rutgers)
- State University of New York (SUNY)
- Stevens Institute of Technology (Stevens)
- Syracuse University (SU)
- The College of New Jersey (TCNJ)
- University of Puerto Rico - Mayagüez (UPRM)

UTRC conducts an open, broad-based process for soliciting and selecting proposals. High-quality proposals that best match the results of the needs assessment and the objectives and research emphasis areas of the consortium will be selected for funding.

## **Introduction:**

The Region 2 University Transportation Research Center (UTRC) is pleased to announce the 2012-13 UTRC Call for Proposals competitive matching grant programs for faculty-initiated projects. UTRC is seeking research proposals as outlined below. It is anticipated that decisions on awards will be made as soon as reviews are completed.

**Only faculty at institutions of the UTRC consortium** are eligible to submit a proposal. Proposals will be evaluated on a **competitive basis**. Final awards will be subject to the governing requirements of the U.S. DOT University Transportation Centers Program and the Research Foundation of the City University of New York.

## **How to Apply:**

**Proposals** must be submitted **electronically in Microsoft Word, .rtf, or pdf format** and **Budgets** in **Microsoft Excel format**, through the [UTRC Online Submission System](http://www.utrc2.org) (visit [www.utrc2.org](http://www.utrc2.org)).

For more information, please contact:

**Penny Eickemeyer, Associate Director for Research**

Email: [peickemeyer@utrc2.org](mailto:peickemeyer@utrc2.org)

Phone: (212) 650-8074

or

**Ellen Thorson, Ph.D., Senior Research Fellow**

Email: [ethor@utrc2.org](mailto:ethor@utrc2.org)

Phone: (212) 650-8144

## **Program Objectives:**

The purpose of the Centers is to **advance U.S. technology and expertise** in the many disciplines comprising transportation through the mechanisms of research, education, and technology transfer; and to **provide a critical transportation knowledge base** outside the US DOT and address vital workforce needs for the next generation of transportation leaders.

The objectives of the UTRC Call for Proposals are to:

1. Promote excellent and innovative research projects, education, and technology transfer activities on transportation problems relevant to U.S. DOT's Region 2 as well as the nation.
2. Encourage **multi-disciplinary** and **multi-university** approaches to research on these problems.

3. Provide practical and workable *contributions and solutions to the region's transportation community*.
4. *Further the education* of transportation students by involving them in scholarly research.
5. *Encourage faculty* in the UTRC consortium to compete for research funds.
6. Promote high-quality research on the *development, demonstration, or implementation of advanced technologies* in the transportation field.
7. Promote *collaboration* between traditional fields of transportation expertise (e.g. civil engineering and urban planning) and academic research centers in advanced technologies (e.g. nanotechnology, photonics, wireless communication technologies).
8. *Encourage partnerships* among universities, public agencies, and the private sector.

### **Funding Categories:**

The program is divided in six funding categories and each proposal must clearly specify the category, in which the proposal is submitted, addresses our research focus areas, and responds to at least one of the USDOT strategic goals.

*Below are the six categories* of projects to be considered for funding:

**1. Faculty-Initiated Research:** The primary purpose of this program is to *fund novel and exciting ideas from faculty* in the area of transportation. The projects funded should seek to promote excellent and innovative research on transportation problems relevant to U.S. DOT's Region 2. Proposals will be peer-reviewed by an ad-hoc committee of researchers at other UTCs, and by practicing professionals at agencies within Region 2. Reviewers will score proposals according to the quality of the research plan; qualifications of the team; relationships of proposed work to other work in the field; degree of innovation; degree of support given to students; collaboration across disciplines and/or universities; feasibility of schedule and work plan; and relevance to Region 2's needs, UTRC's Theme, and USDOT strategic goals.

Projects funded in this category will be limited to a maximum of \$100,000 of UTRC funds.

**2. Outside the Box Ideas:** This program seeks to *stimulate innovative ideas*. An outside the box idea is one that will foster *creative* and *non-traditional* research ideas from faculty. Under this program, faculty are challenged to submit ideas that fall beyond the scope of traditional transportation research.

Projects funded in this category will be limited to a maximum of \$100,000 of UTRC funds.

**3. Emerging Investigators Program\*:** This program is to *assist faculty (especially junior faculty)* at UTRC member institutions to learn to write competitive research proposals and to develop relationships with funding agencies. This program will help fund *exploratory* research by faculty. This program would support faculty throughout the UTRC Consortium. The grant will support the development of a paper on an emerging transportation issue of the proposer's choice.

Projects funded in this category will be limited to a maximum of \$15,000 of UTRC funds.

**4. Research Cluster Teams\*:** The Center will support *collaborative Research Focus Teams* consisting of *faculty, students, and transportation professionals, drawn from throughout the UTRC consortium* and organized around a specific transportation issue. The teams should be composed of leading researchers, faculty, students, and institutions engaged in transportation research and the synergistic exchange of ideas and resources.

The purpose of these teams will be to develop consensus statements of research needs in collaboration with the region's public agencies and to further *promote dialogue* between the universities and transportation professionals in the region and nationally.

UTRC will accept proposals from one or a group of faculty that seek to initiate and lead a focus area group. Research clusters should include researchers from multiple institutions. The proposal should clearly describe the focus areas of the team, potential participants, activities, and expected products generated by the team.

Teams may spend UTRC grant funds on workshops, trips to speak to funding agencies, release time, collaborator forum meetings, or other ways to bring a diffuse but related group of research entities into sustainable, productive collaboration.

Proposals funded in this category will be limited to a maximum of \$20,000 of UTRC funds.

**5. Cooperative Research with Other UTCs and Organisations:** UTRC will support *cooperative and comparative* research *with other UTCs and Organisations*. UTRC looks forward to establishing collaborative relationships with other UTCs and organisations in the country on issues of national and mutual concern. Projects in this category must *establish collaborative relationships and link the research activities with other UTCs or other entities*, including private sector concerns, Minority Serving Institutions, state Departments of Transportation, Metropolitan Planning Organizations, other public sector organizations at all levels of government, and not-for-profit institutions such as the American Association of State Highway and Transportation Officials (AASHTO), the Transportation Research Board (TRB), and the American Public Transportation Association (APTA).

Projects funded in this category will be limited to a maximum of \$100,000 of UTRC funds.

**6. Education and Technology:** Projects under this category include *outreach activities* to advance the awareness of the general public, policy makers and transportation organizations on the issues, consequences, objectives and resources, associated with the USDOT strategic goals.

Examples of activities\*\*:

- **Research Conferences** – Expenses associated with hosting transportation research conferences and workshops. (No funding will be provided for travel or registration to participate in conferences elsewhere, foreign travel, and meals).
- **Workforce Training Programs / Research Implementation Workshops / Technology Transfer Seminars** – Travel and other costs associated with providing training to public agency employees on the outcomes of university research.
- **Curriculum Development Workshops and Other Initiatives** – Exploring new fields and areas of transportation knowledge. Bring faculty together to discuss new approaches to course and curriculum design.
- **Community Partnerships** – Grants to facilitate student coursework that directly addresses a real transportation need in a local community, e.g. a studio class organized in partnership with a public agency or community group.
- **Exchange Programs** – Funding to allow students and faculty to collaborate across universities by spending time in residence at another campus within UTRC or the USDOT University Transportation Centers program.

\* No Federal matching fund is required.

\*\*Costs eligible for UTRC grant must be explicitly discussed with the UTRC Program coordinator.

Proposals funded in this category will be limited to a maximum of \$20,000 of UTRC funds.

## **USDOT Strategic Goals:**

### **SAFETY**

Improving safety is DOT's top priority. Secretary Ray LaHood has urged all DOT employees to reinforce our safety culture in our daily work and to encourage our domestic and international partners, our stakeholders and the public to redouble their efforts to reduce transportation-related fatalities and injuries. The Safety chapter of this Strategic Plan outlines the steps DOT will take to improve safety levels throughout the transportation system.

### **STATE OF GOOD REPAIR**

Over the years, the U.S. has built one of the world's most extensive and productive transportation systems, representing trillions of dollars of public and private investment. It is essential that we be good stewards and apply asset management principles proactively to maintain and modernize our critical infrastructure to maximize its productivity and performance and minimize full life cycle costs. Our State of Good Repair chapter describes the steps DOT will take to identify critical highway, bridge, transit, airport and railroad assets and improve their state of repair.

### **ECONOMIC COMPETITIVENESS**

Achieving the maximum net economic benefit from our transportation investments is essential in this period of economic hardship and difficult budget choices at the Federal, State, and local levels. DOT is committed to fostering policies and investments, including investment in the transportation

workforce of the future that will produce the greatest economic benefit for the broadest number of citizens and businesses and will lay the groundwork for long-term economic growth and prosperity. The Economic Competitiveness chapter outlines the steps DOT will take to achieve the greatest contribution of the transportation system to the United States' economy.

## **LIVABLE COMMUNITIES**

Fostering livable communities – places where transportation, housing and commercial development investments have been coordinated so that people have access to adequate, affordable and environmentally sustainable travel options – is a transformational policy shift for DOT. The President has made place-based policies like livable communities a key component of his domestic agenda and has challenged all Federal agencies to coordinate and innovate around this goal in an unprecedented way. To promote well-coordinated and sustainable development, DOT has formed an interagency partnership with the Department of Housing and Urban Development (HUD) and the Environmental Protection Agency (EPA). The Livable Communities chapter describes our strategies for increasing access to adequate, affordable, and environmentally sustainable travel choices.

## **ENVIRONMENTAL SUSTAINABILITY**

The Administration is committed to a comprehensive National energy and environmental policy that emphasizes reducing carbon, other harmful emissions, and the consumption of fossil fuels. This policy also emphasizes protecting and enhancing natural resources. To implement this policy, DOT will advance transportation investments that reduce energy use and associated greenhouse gas emissions for passenger travel and freight movement, and foster the protection of critical watersheds and ecosystems. In addition to the sustainable development patterns associated with livable communities, DOT will also promote the substitution of carbon intensive travel on congested highways and airways for use of more energy efficient transportation systems, including rail, water, and pipelines where feasible. The Environmental Sustainability chapter outlines the steps DOT will take to move toward a more environmentally sustainable U.S. transportation system.

## **UTRC Research Focus Areas:**

UTRC has defined eight research focus areas that combine the diversity of UTRC knowledge to address the articulated problems facing our region and the nation, responding to USDOT's strategic goals and pursuing our Center's theme of "Planning and Managing Regional Transportation Systems in a Changing World".

### ***Focus Area 1: Planning, monitoring, and implementation of communications and other technologies to understand and improve multi-modal transportation safety***

Safety remains the top priority in development and operation of national, regional, and local transportation systems. Accidents result from both human errors and environmental factors. Significant research is still needed to understand contributing variables and to implement solutions through vehicle and infrastructure design improvements or through operational and communications improvements.

### ***Focus Area 2: Infrastructure design, monitoring, inspection, and management to ensure a State of Good Repair***

The United States has invested trillions of dollars in what is arguably one of the finest transportation systems in the world. As the country continues to grow, there will be continued

pressure to expand this system to handle the increase in personal and freight mobility that characterizes economic prosperity. However, perhaps the most significant need and challenge facing the Nation's transportation system is keeping the existing highways, bridges, transit facilities/equipment, ports and airports in a state of good repair.

***Focus Area 3: System modernization through implementation of advanced and information technologies***

Recent technology advances have revolutionized the methods of communications between transportation system operators and users, and between infrastructure and system users. Through implementation of roadside, station, and in-vehicle technologies, and especially with rapid integration of smartphones and other handheld computers, users now have the ability to receive transportation information in real-time. Continued research can result in implementation of significant advancements, particularly through partnerships between private developers, transportation agencies and academic researchers.

***Focus Area 4: Practices, partnerships, and mechanisms for financing transportation systems***

Currently, federal, state, local, and private system operators are struggling to finance transportation infrastructure and operations. Limited funding at both the federal and state level due to an inability to find alternative sources of revenue has led to poor maintenance of transportation infrastructure which in turn, leads to potentially dangerous conditions on many older bridges and road facilities. In considering new financing approaches, a number of fiscal and administrative challenges will need to be addressed.

***Focus Area 5: Promoting livable and sustainable communities through quality of life improvements and diverse transportation development***

In its draft Strategic Plan, USDOT defines livable communities as "places where transportation, housing and commercial development investments have been coordinated so that people have access to adequate, affordable, and environmentally sustainable travel options." Achieving livability requires integration of land-use and transportation planning, as well as economic development, to ensure that residents have access to needed goods and services.

***Focus Area 6: Enhancing understanding of the economic impacts of transportation investment***

Transportation infrastructure investment has a direct impact on economic activity due to direct job creation of a project and the following macroeconomic impact of regional multipliers. Achieving the maximum net economic benefit from our transportation investments is essential in this period of economic hardship and difficult budget choices at the Federal, State, and local levels. DOT is committed to fostering policies and investments, including investment in the transportation workforce of the future that will produce the greatest economic benefit for the broadest number of citizens and businesses and will lay the groundwork for long-term economic growth and prosperity.

***Focus Area 7: Promoting freight productivity, efficiency, and sustainability through multi-modal policy, planning, and logistics***

Freight transportation is critical to support livable communities and economic competitiveness. At the same time, freight vehicles and facilities are not without impacts on surrounding

communities, infrastructure, and the environment. Mirroring the broader US system, Region 2 is home to a vast, multi-modal freight infrastructure that includes highways, rail, marine ports, airports, and international border crossings. The region is challenged to provide multi-modal freight access to support industry productivity and safe, reliable, and efficient movement of goods between shippers and receivers while at the same time minimizing the impact of freight on infrastructure, traffic conditions, and the environment.

***Focus Area 8: Securing transportation systems and improving planning for and response to extreme events***

Transportation systems are highly vulnerable to extreme events by virtue of several properties associated with their design and use. A key transportation characteristic contributing to both to its attractiveness and vulnerability is the concentration of facilities and users in ways that potentially maximize consequences of extreme events.

**Proposal Requirements:**

Proposals on transportation topics of relevance to USDOT Region 2 are eligible for this program. Each submission must include the following elements:

1. A cover page, following the form in the Template for Technical Proposals on the UTRC website (<http://www.utrc2.org/research/resourcesforpis.php>). A lead institution and Principal Investigator (PI) should be clearly identified. The Principal Investigator must be a faculty member of a member institution of the UTRC consortium. The funding category should be clearly indicated in the cover page. A proposal is limited to one and only one funding category.

Proposals involving well-structured teams from two or more institutions are encouraged. Such proposals should be submitted as a single entry with appropriate budget.

2. An executive summary briefly describing the problem, proposed approach, and work effort in 400 words or fewer.

3. The main proposal narrative, not exceeding 4,000 words, describing in more detail:

- a. The problem being addressed, and its relevance to the region.
- b. The research approach.
- c. How this project relates to other work being done on this topic.
- d. Description of deliverables the research project will produce. This must include a one- to two-page research brief summarizing the methods, findings, and significance of the research project in non-technical language, suitable for distribution to transportation agencies and policymakers.

For the following proposals, this requirement is replaced as follows: Emerging Investigators proposals - a 4-5 pages description of the proposed working paper, including how it will make a contribution to the academic literature, the transportation needs in the region and meet the mission of UTRC.
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Research Cluster Team and Education and Technology Transfer proposals - a 4-5 pages description of the proposed project

4. Proposed tasks and timeline. Each task or subtask should be associated with a timeframe, a specific deliverable, and a percent of effort toward the total budget.

5. Listing of research obligations of key project personnel for the 2012-13 Academic Year, including both UTRC and non-UTRC projects that will be underway during that time.

Note: requirements 4 and 5 are waived for Emerging Investigator, Research Cluster Team, and Education and Technology Transfer proposals.

6. Brief curricula vitae of all principals responsible for the study (not to exceed two pages each).

7. A budget, using the Template for Faculty Initiated Proposals – Budget Tables, on the UTRC website (<http://www.utrc2.org/research/resourcesforpis.php>):

- a. Each proposal must include a detailed estimate of the time and cost to perform the work, including the billing rate for each person.
- b. Proposals are encouraged to include funding for one graduate student researcher; higher levels of student support may be requested but must be justified in the proposal.
- c. Proposals should include funding to present research findings at one academic or professional meeting.
- d. No faculty member can receive funding from UTRC exceeding 30% of his/her academic year's time.
- e. ***A non-Federal match of not less than 100% of the UTRC funds is required to all funding categories except on proposals for the “Emerging Investigators Program” and “Research Cluster Teams”.***

Eligible sources of matching funds include cash or in-kind sources of funds from state or local transportation agencies; foundations, business, or civic organizations; or faculty release time or student stipends provided by the university. Sources of matching funds must be documented on a letterhead of the sponsor agency and subject to reasonable and verifiable valuation.

*\* Proposals that are not able to identify sufficient matching funds may not be eligible for consideration in this program. Priority will given to proposals that demonstrate fully matching from non-Federal sources. Please contact Penny Eickemeyer or Ellen Thorson before you submit your proposal if you need guidance on the proposal and budget preparation or potential sources of a match.*

### **Other Considerations:**

Generally the project schedule should not exceed 15 months, except to indicate the approximate duration of future phases (beyond the proposed phase) of a multi-phase project.

Multi-phase projects are acceptable as long as the proposal only requests funding for one clearly-defined phase and adheres to the funding limit for the appropriate project category as described under “Funding Categories” above. The proposer must accept that any contract awarded to fund one phase of a multi phase project does not in any way obligate UTRC to fund later phases.

Teaming arrangements are strongly encouraged, where appropriate, to enhance the likelihood of project success. Proposal teams may include commercial firms, industry associations or research organizations, universities, government agencies, end-users, and other stakeholders. Letters of interest or commitment from each identified team member should be included in an appendix to the proposal. The lack of such letters, especially in cases where co-funding is indicated, is viewed as a very serious proposal deficiency and will be judged accordingly in the evaluation process.

### **Evaluation Criteria:**

Proposals will be reviewed by UTRC staff, an ad hoc committee of researchers at other transportation centers, or by practicing professionals at agencies/industries within USDOT Region 2, depending of the submission category. Reviewers will score proposals according to the following criteria:

- a. Originality and timeliness of topic.
- b. Quality, clarity, and feasibility of the proposal plan.
- c. Validity of data and research methods.
- d. Likelihood of producing useful information and insights.
- e. Qualifications of Principal Investigator(s)
- f. Relevance to needs and problems in Region 2 and UTRC’s theme of “Planning and Managing Regional Transportation Systems in a Changing World” and to the USDOT strategic goals.

The UTRC Director and Executive Committee will consider the reviewer’s scores in making the final selection of proposals. In addition to the considerations listed above, special consideration will be given to activities/projects that:

- a. Utilize UTRC’s limited resources efficiently
- b. Involve graduate or undergraduate students
- c. Involve collaboration with other institutions

### **General Conditions:**

#### **Contract Award:**

UTRC anticipates making multiple awards under this solicitation. UTRC may request additional data or material to support applications. UTRC will use the RFCUNY Sample Agreement to contract successful proposals. UTRC reserves the right to limit any negotiations to exceptions to standard terms and conditions in the Sample Agreement to those specifically identified in the

submitted proposal. Proposals will be reviewed as soon as they are received and funding decisions are to be made ***no later than 60 days after the date of submission***. UTRC staff will review all budgets for compliance with UTRC rules and will inform all PIs of the status of their proposals after submission.

UTRC expects to notify proposers within 60 days from the proposal submission date whether or not their proposals have been selected to receive an award.

**Limitation:**

This solicitation does not commit UTRC to award a contract, pay any costs incurred in preparing a proposal, or to procure or contract for services or supplies. UTRC reserves the right to accept or reject any or all proposals received, to negotiate with all qualified sources, or to cancel in part or in its entirety the solicitation when it is in UTRC's best interest. UTRC reserves the right to reject proposals based on the nature and number of any exceptions taken to the standard terms and conditions of the Sample Agreement.

**Reporting Requirements:**

Quarterly Progress Report:

The Principal Investigator is required to submit quarterly project status reports to the UTRC Project Manager using the template included in resources for PIs on the UTRC website. These reports should be submitted on or about March 10, June 10, September 10 and December 10 and should reflect activity undertaken within the quarter, description of any issues or problems that may lead to requests for extensions or budget revisions, and suggestions for implementation of the research.

Final Report:

The Principal Investigator is required to submit a draft final report at the conclusion of the project (within one month of project completion or if this deadline can not be met, at a mutually agreeable date between the PI and UTRC). This draft should include a disclaimer page and a completed USDOT Form 1700, which are available at <http://www.utrc2.org/research/resourcesforpis.php>. The draft will be submitted by UTRC for peer review, but this requirement may be waived if previously reviewed and accepted for publication prior to submission to UTRC. The comments of peer reviewers should either be addressed and included in the final report or the PI should explain to the UTRC project manager why the issue should not be included.

The Principal Investigator is required to submit all project deliverables, first, in draft formats for review and comment by the UTRC Project Manager. The Principal Investigator is required to address the reviewer's comments, as needed, and re-submit to the UTRC Project Manager for review. Upon acceptance by the UTRC Project Manager, the Principal Investigator is required to submit the deliverables to the UTRC Project Manager in final formats.

### Research Brief:

A one-page non-technical summary of the project is due when the final report is submitted. A template will be provided by the project manager close to project completion. The brief should describe the study's work and findings and may include graphics, photos, information on implementation, publications, and any other information that the PI chooses to include to inform the public about the research.

### Special Notes:

Recipients of the UTRC grant are expected to acknowledge the support provided by the UTRC in all presentations and publications resulting from the research or program. UTRC will not knowingly support projects that are being funded or proposed for funding in whole or in part by other agencies or organizations without a specific agreement for joint funding. Failure to disclose other proposed or in-hand research funding for a project substantially similar to a UTRC project is grounds for termination of a UTRC grant.

Graduate student contributions to research projects must be acknowledged in any publication resulting from research using UTRC funds. Acknowledgment may be by footnote or by co-authorship of reports and articles, depending upon the nature and extent of student contributions.