

REQUEST FOR RESEARCH PROPOSAL SUMMER 2017

Background

The Mineta Transportation Institute (MTI) is a US Department of Transportation Tier I University Transportation Center at San José State University (SJSU). Our mission is to increase mobility for all by improving the safety, efficiency, accessibility, and convenience of our nation's' transportation system. Through research, education, workforce development and technology transfer, we help create a connected world.

General Proposal Information

Who can apply: MTI supports research projects staffed entirely by SJSU faculty or by SJSU faculty collaborating with researchers from outside the university. Commercial organizations and non-profits may not respond to this RFP.

Project Funding: Research projects may be 100% funded by MTI, or institute funds may be combined with funds from other sources, which must be identified in the proposal. The institute prefers proposals with budgets of \$70,000 or less, including indirect expenses (F&A). Institute publication, distribution, and marketing costs of \$2,600, plus a \$3,000 allowance for approved conference presentation and published journal award are to be included in the budget.

Research Team Composition: All teams must include at least one SJSU faculty member and one SJSU student. The SJSU faculty member need not be the PI but must contribute substantially to the project in multiple phases (e.g., research design, data collection, data analysis, and/or report preparation). A reasonable amount of time for SJSU faculty involvement is considered to be 25% to 33% of the time that the other researchers are being written into the proposal budget for. For example, if the total number of hours for the subcontracted researcher is 256, then 64-85 hours (minimum) would be appropriate for the SJSU faculty member. Similarly, a reasonable amount of time for SJSU student involvement is considered to be 25% to 33% of the time budgeted for other students.

MTI requires that all research team members be certified Research Associates (RA) or Consulting Associates (CA) prior to their involvement in any project. Certification requires a completed application, a résumé, and a sample of published research. The Research Associates Policy Oversight Committee (RAPOC), composed of the department heads or representatives of the SJSU academic departments with which MTI works most often, reviews the applications and recommends certification where appropriate. Certification is approved by the executive director and must be renewed every five years.

Submittal Deadline:

July 31, 2017

Research Proposal Form and
Project Budget Spreadsheet:

[http://transweb.sjsu.edu/
MTIportal/research/
RFPForms.html](http://transweb.sjsu.edu/MTIportal/research/RFPForms.html)

MTI CONTACT:

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and Technology Transfer
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Issued: June 1, 2017

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

Individuals who are not currently certified as either an RA or a CA may apply for that status concurrently with submitting a research proposal. Application materials can be obtained online at http://transweb.sjsu.edu/MTIportal/research/ra_forms.html. Student Research Assistants do not require certification.

Exceptions for hiring personnel who are not certified MTI Associates will be made only for individuals with specialized expertise who are hired to consult on the project and who are not named authors of the final report (for example, a team may wish to hire a statistical expert to advise on appropriate modeling techniques for the project.)

The criteria that MTI uses for approving Associate status are as follows.

To be approved as an RA, it is expected that candidates will have:

1. Completed a PhD in a field relevant to transportation policy research.
2. Established a record of publication in the transportation policy field or a field with direct relevance to transportation policy research.
3. Established a record of publications in peer-reviewed academic journals.

To be approved as a CA, it is expected that candidates will have:

1. Completed a graduate degree in a field relevant to transportation policy research.
2. Established a record of professional publication in the transportation policy field or a field with direct relevance to transportation policy research.

Research Emphasis Areas

With the nation's population expected to reach 390 million by 2045 and the volume of transported goods projected to hit 29 billion tons by 2040,¹ incremental improvements in mobility are not enough. "Smart solutions" are needed – innovative approaches to mobility that combine new technologies with non-traditional tools. Research projects should focus on achieving the following goal and objectives:

Goal: Lead the nation in research that identifies safe, reliable transportation solutions that increase mobility of people and goods and strengthen the nation's economy

- **Objective 1:** Leverage new technologies and innovative processes to achieve a seamless, multimodal surface transportation system that integrates with other "smart city" investments.
- **Objective 2:** Create a safer, more reliable, and more resilient surface transportation system that improves equity through increased access to jobs, housing, services, and other opportunities.
- **Objective 3:** Reduce the impact of transportation on climate change by identifying feasible alternative modes and fuels and effective ways to reduce vehicle miles traveled.
- **Objective 4:** Extend surface transportation access to people of all abilities and socioeconomic levels, connecting people to where they live, work, and play.
- **Objective 5:** Optimize passenger and freight movements to improve mobility of people and goods through development of more accurate data models and advanced application of analytical tools.

Within the broad category of *improving mobility of people and goods*, the US Department of Transportation has identified the following priorities:

- Increase access to opportunities that promote equity in connecting regions and communities, including urban and rural communities;
- Smart cities;
- Innovations to improve multi-modal connections, system integration, and security;
- Assistive technologies for those with physical or cognitive disabilities;
- Data modeling and analytical tools to optimize passenger and freight movements;
- Innovations in multi-modal planning and modeling for high-growth regions;
- Novel (non-traditional or alternative) modes of transport and shared use of infrastructure; and

- Regional planning and setting of transportation priorities.

Proposals should clearly state how the research will address these US DOT priorities. In addition, MTI encourages proposals that directly address one of the needs identified by MTI's partners (see Appendix).

Institutional Review Board (IRB)

Many proposals will include tasks requiring interaction with human subjects or utilize data that was derived from such interaction. This would include surveys, focus groups, interviews, structured observations, video taking, recording, as well as secondary data that includes personally identifiable information. Projects with the potential for such interaction must be submitted to the SJSU IRB, or an equivalent office at the Principal Investigator's institution. For SJSU, the submission can only be made by a faculty member who has received a certificate after completing the required training. The IRB website at <http://www.sjsu.edu/research/irb/> provides information on certification, and IRB staff can be contacted at (408) 924-2479 for additional information. The same site provides directions and forms for submittals. Project timelines should provide for IRB clearance. An exempt project will require up to a month. Those that require full committee review should allow more time.

Surveys

Proposals including surveys should identify the projected response rate and outline the steps that will be taken to assure that this level of response is achieved. The proposal should discuss why the resulting data will be sufficient in amount and quality for the level of analysis needed to accomplish the goals of the project.

Research Proposal Form Requirements

In order to be considered, research proposals must be submitted in electronic form using the official Research Proposal Form (.doc) and the Proposal Budget Form (.xls). All forms are available at <http://transweb.sjsu.edu/MTIportal/research/RFPForms.html>.

Proposals should not exceed ten pages, plus required attachments. **All proposals must be electronically submitted by 5:00 p.m. (PDT) on July 31, 2017.**

All proposal and RA and CA certification materials should be sent to: hilary.nixon@sjsu.edu.

Submittal Checklist for Electronic Submission

1. Research Proposal Form (including a two-page résumé for all team members listing peer-reviewed publications relevant to the proposed project)
2. Budget in Excel format
3. Research and Consulting Associate Application for each non-RA/CA, if applicable

Evaluation Criteria

The criteria for evaluating proposals is as follows:

1. Is the project of practical and timely value to transportation decision-makers and professionals?
2. Does the project further the institute's research goals by addressing one or more of the institutes' research emphasis areas?
3. Does the project represent original research and identify how it expands upon previous research on the subject?
4. Does the proposed research team possess the expertise to conduct the research effectively?
5. Does the proposed approach to the project demonstrate sound methodology?

6. Can the project be accomplished within the proposed budget and timeline?
7. Is the content of the final product likely to be of interest to scholarly publications? Similar, do the research team members demonstrate a solid record of scholarly publications?

Miscellaneous Requirements and Information

To comply with federal public access requirements, all original data associated with this research (e.g. surveys, datasets generated from the research, video recordings, image files, etc.) must be made available to the public in an open access data repository. Researchers will be required to comply with [MTI's Data Management Plan](#) (DMP) or provide an acceptable alternative to the current DMP.

Project teams will comply with all policies of SJSU with respect to ownership of literary and scientific property, including copyrights and patents.

To ensure that MTI research publications are of high quality, all final reports are peer reviewed by two academics and one practitioner. In addition, each MTI publication is professionally edited and formatted.

MTI and SJSU both value wide dissemination of knowledge produced through research. After MTI publishes the results of the study, the project team is encouraged to publish the material elsewhere, as long as MTI is credited as the sponsoring entity. MTI expects that all projects will result in at least one publication in a peer-reviewed journal, and a journal publication award of \$1,500 is available for the first such publication resulting from an MTI research project.

Research teams are also encouraged to present the results of MTI-sponsored research projects at meetings of professional, academic and trade associations, or other end users. Limited financial assistance is available to support these information transfer activities. MTI must be credited as the sponsoring entity.

Budget Related Information

- SJSU faculty members are paid their university established hourly rates. If you have not identified an SJSU faculty team member, please use \$65.00 per hour as a placeholder.
- Independent contractors may receive a maximum hourly rate of \$100.00.
- If requesting a subcontract, only include staff costs. Other project related expenses will be directly reimbursed by MTI. Indirect costs can only be charged against 50% of the total subcontract amount. For further information about this restriction, contact the Director of Research and Technology Transfer.
- Social security numbers must be collected if paying a respondent an incentive or awarding a gift card.
- Funds budgeted for domestic travel must be explained in the project narrative.
- Under no circumstance is international travel funded.
- MTI will only reimburse for flights taken on American carriers and for hotel expenses that do not exceed the per diem rate. To view the established per diem rates, please go to: <https://www.gsa.gov/portal/content/104877>

Distribution of Funds

The SJSU Research Foundation oversees funds for approved projects. MTI Associates submit invoices and/or timesheets (CSU employees) for payment of services rendered. The paperwork is reviewed and forwarded to the SJSU Research Foundation for processing. The Principal Investigator also submits monthly progress reports to MTI as a condition of payment. Fifteen percent of the MTI Associates' fees will be held pending acceptance of the final edited report and submission of all project data in accordance with the data management plan, unless otherwise instructed by the SJSU Research Foundation.

APPENDIX

MTI PARTNERS - RESEARCH NEEDS

Title	Vehicle Miles Traveled – Multimodal Infrastructure and Other Effective Mitigation Techniques
Problem Statement	Under SB 743, jurisdictions across California are moving away from Level of Service (LOS) and toward Vehicle Miles Traveled (VMT) to understand the transportation impact of projects under the California Environmental Quality Act (CEQA). While five decades of practice informs how one “mitigates” an impact per LOS, relatively little evidence exists to show how to mitigate VMT-based impacts. This is particularly true for multimodal infrastructure investment (new sidewalks, bike facilities, trails, etc.), where the existing research is particularly thin.
Research Objective / Tasks	Objective: Quantify the VMT impact of various mitigation measures – for example, new multimodal infrastructure, transportation demand management and parking policies, and building/project design. Particularly focus on the impact on VMT of new multimodal infrastructure, as research on that is the most thin.
Relationship to MCTM Strategic Goals	This research is needed to advance smart infill development with connected multimodal improvements throughout California. In particular, it advances MTI’s objectives to develop innovative processes to achieve a seamless, multimodal surface transportation system; create a safer, more reliable, and more resilient surface transportation system that improves equity through increased access to jobs, housing, services, and other opportunities; extend surface transportation access to people of all abilities and socioeconomic levels, connecting people to where they live, work, and play; improve mobility of people and goods through development of more accurate data models and advanced application of analytical tools; and reduce the impact of transportation on climate change by identifying feasible alternative modes and effective ways to reduce vehicle miles traveled.
Related Research	<p>The following research is related to the requested research:</p> <ul style="list-style-type: none"> • Holtzclaw, et al. “Location Efficiency: Neighborhood and Socioeconomic Characteristics Determine Auto Ownership and Use – Studies in Chicago, Los Angeles, and San Francisco.” Transportation Planning and Technology, 2002, Vol. 25, pp. 1-27 • CAPCOA. Quantifying Greenhouse Gas Mitigation Measures: A Resource for Local Government to Assess Emission Reductions from Greenhouse Gas Mitigation Measures. (2010) • Boarnet and Handy. Draft Policy Brief on the Impacts of

Residential Density Based on a Review of the Empirical Literature. (2010)

- Ewing and Cervero. "Travel and the Built Environment – A Meta-Analysis." Journal of the American Planning Association. (2010)
- Nelson\Nygaard. Crediting Low-Traffic Developments. (2005)
- Center for Clean Air Policy. Transportation Emission Guidebook. 2005 Literature Conducted by TIAx on behalf of Sacramento Metropolitan Air Quality Management District. (2010)
- Rodriguez and Joo. "The Relationship between Non-motorized Mode Choice and the Local Physical Environment". Transportation Research Board (2004)
- Boarnet and Handy. White Paper: A Framework for Projecting the Potential Statewide VMT Reduction from State-Level Strategies in California. Prepared for the California Strategic Growth Council. (2017)
- Sacramento Metropolitan Air Quality Management District. Recommended Guidance for Land Use Emission Reductions.
- City of Lincoln. A Report to the California Legislature as Required by Assembly Bill 2353, Neighborhood Electric Vehicle Transportation Plan Evaluation. (2008)
- Marshall and Garrick. "Effect of Street Network Design on Walking and Biking." Transportation Research Record. (2010)
- Victoria Transport Policy Institute. Parking Requirement Impacts on Housing Affordability. (2009)

Submitted By

San Jose Department of Transportation

Title	Downtown San Jose Multimodal and Public Life Study
Problem Statement	Downtown San Jose needs a robust plan for improving its multimodal connectivity and public life. The Downtown area is becoming denser by the day and attracting a great many more residents and businesses. To keep these residents and businesses, and increase the potential for them to use non-single-occupancy modes of travel, the downtown area must have a cohesive plan to integrate multimodal use and public life.
Research Objective / Tasks	<p>Objective: Develop a set of strategies that will inform a Downtown Mobility and Public Life plan</p> <p>Task 1: Survey world and US cities for plans and strategies that have brought about high non-SOV mode choice in dense Downtown or other core areas.</p> <p>Task 2: Survey world and US cities for plans and strategies that have developed public life throughout an area in dense Downtown or other core areas.</p> <p>Task 3: Translate the above strategies into the San Jose context. Which ones have potential to impact Downtown San Jose? What supporting actions (improved transit travel times, park activations, decreased auto presence, etc.) are needed to improve the likelihood of the strategies having an impact? Which ones don't fit the San Jose context?</p> <p>Task 4: Model the various strategies and potential combinations of strategies in a micro-simulation system to validate and visualize their potential impact.</p>
Relationship to MCTM Strategic Goals	To be successful the research needs to bring together concepts on accessibility, equity and technology to suggest strategies using technology, land use and transportation improvements to create a more efficient (optimized) transportation system. Success of the strategies should increase the use of lower emission transportation mode use while also creating a more equitable, and robust multimodal system increasing access for all to jobs, entertainment and homes.
Related Research	<p>Currently the City has on the books the following plans and research for the Downtown area:</p> <p><u>Downtown EIR Update Background</u></p> <ul style="list-style-type: none"> The original Downtown Strategy (2000) compiled information

about the transportation environment and major transit and parking projects; it was not a transportation plan per se

- The Strategy had numerous follow up plans and an environmental report:
 - [Parking Management Plan \(2001, 2007 Update\)](#)
 - Downtown Circulation and Access (2002, focused primarily on access to downtown from the region and the couplet network/potential conversion)
 - [Downtown Signage Master Plan](#) (2002)
 - [Downtown Street and Pedestrian Lighting Master Plan](#) (2003)
 - [Streetscape Master Plan](#) (2003)
 - [Downtown Design Guidelines](#) (2004)
 - Downtown Strategy [EIR](#) (2005)
- An update to the Downtown Strategy EIR is underway; this is an “environmental” effort, not a planning one.

Downtown Plans, Programs & Projects

There is no single “Transportation Plan” for Downtown, but there are many plans, programs, projects that impact how people get around today and in the future.

- Plans/Reports:
 - Downtown Strategy 2000 & [EIR](#) (2000-2005)
 - [Baseball Stadium in the Diridon/Area Area EIR](#) (2007)
 - Bike/Trail Plan & Updated Network for Central San Jose (2009, 2016)
 - [Envision San Jose General Plan](#) (2011)
 - [Diridon Station Area Plan](#) (2014)
 - [Future of Downtown San Jose](#) (SPUR, 2014)
 - [Downtown Streetlife Plan](#) (SJDA, 2014)
 - BART Station Access Recommendations (NN for CSJ, 2015)
 - Complete Streets Design Guidelines (CSJ, 2016)
 - PARK PASEO: Reimagining SJ City Center’s Walkable Corridor (Cities+/CSJ/Knight Foundation, 2017)

Submitted By

San Jose Department of Transportation

Title	Making the Case for Complete Streets: Better Data on the impact of Bikeable, Walkable Streets
Problem Statement	<p>The City of San Jose has ambitious goals for changing how we get around – particularly by growing the percentage of trips made of foot, by bike and on transit to 60% over the life of the Envision San Jose 2040 General Plan.</p> <p>Unfortunately, the City has inadequate data about how people do get around, relying on Census data regarding commute mode split when we know that a richer story exists. San Jose needs better data on who chooses what modes and how patterns vary throughout the City. This is particularly true for data on bicycling, which is very thin, and has major impacts when we go into communities with plans to remake streets into more complete ones.</p>
Research Objective / Tasks	<p>Objective: Provide the City of San Jose with a rich, GIS-compatible multimodal data set and advice on how to maintain the data moving forward; an optional (desired) task is to complement multimodal travel data with other data about what makes the street good – including, potentially:</p> <ul style="list-style-type: none">• Task 1: Review/Summary of Best Practices in Complete Street data collection, analysis, and reporting, including information on the effective use of technology and staffing/cost needs of running a robust program• Task 2: Baseline data by City subarea – Collect and analyze multimodal data by parts of the City to understand where people are using different modes and strategic opportunities for mode shift• Task 3: Recommended data collection and analysis program for San Jose scope and cost (based on Tasks 1 & 2)• Task 4 (optional): Other data about what makes a “good” street, potentially including:<ul style="list-style-type: none">○ The economic impact of complete, people-centered streets (measured by sales tax and/or property values)○ Social and community benefits (connection to place, neighborhood cohesion, social capital)○ Health benefits and associated life expectancy and cost savings○ Other measurements of quality of life and/or placemaking that accrue from high-quality public spaces

**Relationship to
MCTM Strategic
Goals**

This research is needed to advance better multimodal and land use decision-making, specifically within San Jose (the nation’s 10th and California’s 3rd-largest city). It also has relevance for cities throughout the State and Country with similar land use and development patterns to San Jose.

Specifically, the project advances MTI’s objectives to develop innovative processes to achieve a seamless, multimodal surface transportation system; create a safer, more reliable, and more resilient surface transportation system that improves equity through increased access to jobs, housing, services, and other opportunities; extend surface transportation access to people of all abilities and socioeconomic levels, connecting people to where they live, work, and play; improve mobility of people through development of more accurate data models and advanced application of analytical tools; and reduce the impact of transportation on climate change by identifying feasible alternative modes and effective ways to reduce vehicle miles traveled.

Related Research

Numerous jurisdictions have done related research (most notably, New York City), but data and study specific to San Jose does not exist.

Submitted By

San Jose Department of Transportation