Request for Proposals
General Research Grant

http://nitc.trec.pdx.edu/

1 Overview

The **National Institute for Transportation and Communities** (NITC) is a program of the Transportation Research and Education Center (TREC) at Portland State University. NITC is the U.S. Department of Transportation's national center for livable communities and one of the national university transportation centers.

NITC is a Portland State-led partnership with the Oregon Institute of Technology, University of Arizona, University of Oregon, University of Texas at Arlington, and University of Utah.

We will award up to **$1,000,000** to research projects that support NITC's theme. Individual project requests should range from $30,000 to$150,000. Projects must focus on research. All projects submitted for this RFP will undergo external peer review using criteria listed in section 5.1. The proposals will also be scored by NITC staff based on programmatic criteria outlined in section 5.2. The NITC Executive Committee will review the ranked projects and approve awards. All awards require a 1:1.2 non-federal match as outlined in section 7.1. Projects awarded under this RFP may start as soon as August 1, 2019 and completed no later than December 31, 2020, including the final report.

Successful research proposals will fit the NITC theme, linking to articulated U.S. DOT priorities, specifically mobility and safety.

1.1 Key dates

Timeline	Activity
March 29, 2019	**Abstracts due**
April 26, 2019	**Proposals due**
May 2019	**Peer Reviews**
June – Aug 2019	**Project selection, Awards and Task Orders**
August/September 2019	**Projects begin**

1.2 What's new in this RFP

Please carefully review several updates to NITC requirements and process for this RFP. This will apply to all projects awarded in this research cycle.

Advisory Board Priorities. The NITC Advisory Board has provided input into several research priorities that relate to multimodal transportation data and the transportation-land use-housing connection. NITC is prioritizing the funding of proposals that directly addresses research questions relating to these topical areas. More details can be found in section 3 Priorities.

US DOT Requirements. NITC PIs need to be aware of two new US DOT requirements that will impact research grants. Final Reports will need to be 508 (disabled end-user) compliant. These guidelines have been updated and can be found in the PI Handbook. NITC is also required to develop a technology transfer plan for implementing and communicating research results. NITC staff will be working closely with PIs to monitor project progress and identify opportunities and activities for implementing research results.

Institutional Letter of Commitment. PIs should treat NITC similar to other external grants. We require PIs to follow their home university's process for submitting external grants. To prevent delays in awards, we will now require a Letter of Commitment from your home university's research administration office with each proposal. Please be prepared to submit your application package to your institutional research office for review and approval prior to submitting your proposal. PIs will still submit their proposal online. For further details, see section 9 of this RFP.

2 Theme

The NITC theme connects directly with the U.S. DOT goal of **improving the mobility of people and goods to build strong communities.** All proposals must be consistent with this theme, as defined below:

- **Increasing access to opportunities.** Well-connected regions and communities can improve social equity by providing access to jobs, services, recreation, and social opportunities. Research should examine barriers to access, including the connections between transportation, land use, and housing. It should look at how to overcome these barriers and improve accessibility, affordability, and equity in our communities.
- **Improving multi-modal planning and shared use of infrastructure.** Improved mobility requires a range of options for moving people and goods. As concepts of mobility evolve, research is needed to understand how people and firms make mode choices so that we can design better multi-modal systems. Research should examine how different modes can share our infrastructure safely. It should look at how cities and regions can better plan for and prioritize multi-modal transportation, integrated with land use.
- **Advancing innovation and smart cities.** The growth of urban areas of all sizes requires the innovative use of technology and new mobility options. Smart cities research should examine the feasibility of integrating connected and automated technologies in our cities and overcoming the social, political and economic barriers to implementation. This includes ensuring that smart cities improve access for all people and modes.
- **Developing data, models, and tools.** Our complex transportation system demands better data and tools for decision-making. Research is needed to develop tools to collect and analyze multi-modal data from a variety of sources, aimed at optimizing the use of the system. These new models and tools should examine the implications of changes to the system on a range of outcomes including mobility, economic equity, the environment, and health.

3 Priorities

All proposals must contribute to the NITC theme of improving mobility of people and goods to build strong communities as detailed in section 2. Research projects must focus on transportation. Additional consideration will be given to projects that address transportation equity and diversity issues in their research and partnerships.

For this RFP cycle, the NITC Advisory Board is interested in research that will culminate in outcomes that can be put to use in practice such as inform policy, assist in decision-making, or tools. Several areas relating to multimodal transportation data and transportation-land use-housing have been identified as priorities for this RFP. NITC will fund up to **$200,000** in projects that respond directly to the research priorities below:

Developing Data, Models and Tools. Agencies are confronting a plethora of new mobility options along with new data sources to support transportation research, planning, and analysis. Several priority research areas have been identified to increase understanding:

- **Collection of multimodal data.** Are there advanced technologies or methods to capture and count pedestrians? Are there methods to quantify data bias to protect underrepresented populations? What are the barriers to collecting quantitative data related to unserved trips and unmet need demand? How can crowdsourced data be used to understand mobility?
- **Analysis.** How can we ensure that projects (investments in infrastructure) are evaluated in a rigorous way so that we build a solid evidence base to inform decisions about future projects? How can data be used to inform decision-making such as investment and multimodal policies? Are there sources or better metrics to quantify safety, how safe specific types of streets really are, or safety performance measures in urban/multimodal settings in contrast with LOS?
- **Role of Artificial Intelligence and Machine Learning.** How can artificial intelligence or machine learning distill operational data in real time?
- **Standards and Privacy.** Are there frameworks for integrating multiple sources of data for urban mobility research across the modes? What is the right balance between personal data privacy and city-access to mobility data for research, planning, and regulatory purposes? How do or will international privacy regulation, impact new mobility providers? What are the right data? Who owns the data? Are they willing to share it?

Mobility of People: the Transportation, Land Use and Housing Connection. Where people can afford to live can greatly limit their transportation choice and increase their costs. More research is needed to assist agencies in crafting policies or making decisions that can work more effectively to help households with low incomes. Three priority areas have been identified:

- **Transportation-Housing Cost Burden.** How can transportation planning better take into consideration housing, transit, amenities, etc. to reduce overall transportation-housing cost to households with low incomes? What are minimum transportation costs (money and time) for populations with specific job skills to accept and maintain employment? How well does affordable housing align to reduce transportation costs? What are the best locations to subsidize housing in order to minimize total household housing/transportation costs and maximize access to opportunity? What is the best mix of market-rate and affordable/low income for a vibrant downtown?

- **Best practices and policy regarding linking transportation, housing and land use.** How are communities effectively using regulations to address transportation and mobility? What are the institutional issues associated with integrating regional planning, local planning and affordable housing policy?
- **Predicting behavior to drive better transportation planning and initiatives.** How does access to new mobility options such as scooters, transportation network companies, etc. impact land use and housing location choices? Where are low income people likely to be moving 5-10 years plus from now so we can plan now for their transportation needs?

If you have any questions about whether your proposal topic is appropriate, please contact your university's Executive Committee member or NITC staff in advance.

NITC is looking for research proposals that show strong potential to move transportation research into practice, inform other research, shape national and international conversations on transportation research, and respond to the needs of practitioners and policymakers. Research grants typically range between $30,000 to $150,000 per project. Priority is given to projects that are collaborative, multi-disciplinary, multi-campus, include student researchers and support the development of untenured-tenure-track transportation faculty.

4 Eligibility

Faculty members and research faculty must be from Portland State University, Oregon Institute of Technology, University of Arizona, University of Oregon, University of Texas at Arlington, or University of Utah to be eligible to serve as PIs and submit proposals. The lead PI must hold a primary, full-time, paid appointment in a research or teaching position, with exceptions granted for family or medical leave, as determined by the submitting institution.

Proposals may include multiple investigators, and collaborative projects across disciplinary and campus boundaries are encouraged. Proposals including multiple investigators must identify one lead PI contact responsible for reporting and associated administrative tasks. PIs may submit more than one proposal. NITC Executive Committee members are allowed to submit proposals, but are not allowed to be involved during deliberations and decisions related to their proposals and will not be privy to the information discussed.

5 Criteria for Evaluation

All proposals will be peer reviewed externally by at least three peer reviewers, including at least one practitioner from the public or private sector. Proposals are also scored by NITC staff using the programmatic criteria. The external peer review and programmatic numerical scores are then used in the proposal selection process. The Executive Committee selects the final slate of proposals via consensus. Executive Committee members with conflicts of interest around specific projects will excuse themselves from discussions that could influence funding outcomes from which they would benefit.

5.1 Peer Review Criteria

Peer reviews are single-blind and reviewers will remain anonymous. Reviewers are selected from universities, local, regional and national agencies, private sector practitioners, and other university

transportation centers. An established procedure for reviewer conflict of interest is followed. Peer reviewers assess the proposals based on intellectual merit, broader impacts, relevance to NITC's theme and the national transportation research agenda. The specific peer review criteria include:

- **Intellectual merit.** What is the intellectual merit of the proposed activity? How important is the proposed activity to advancing knowledge and understanding within its own field or across different fields? How well qualified is the proposer (individual or team) to conduct the project? To what extent does the proposed activity suggest and explore creative and original concepts? How well conceived and organized is the proposed activity? Is there sufficient access to resources?
- **Broad Impacts.** Does the proposed activity have broad impacts? How well does the activity advance discovery and understanding while promoting teaching, training, and learning? To what extent will it enhance the infrastructure for research, education and technology transfer, such as partnerships or activities beyond the funded project that will live on past the life of the specific project and further NITC's objectives? Will the results be disseminated broadly to enhance scientific and technological understanding?
- **Budget.** Is the project budget reasonable given the tasks proposed?
- **Overall Rating.**
    - Excellent: Outstanding proposal in all respects; deserves highest priority for support
    - Very Good: High quality in nearly all respects; should be supported if at all possible
    - Good: A quality proposal worthy of support
    - Fair: Proposal lacking in one or more critical aspects; key issues need to be addressed
    - Poor: Proposal has serious deficiencies

5.2 Programmatic Criteria

Each proposal is also scored by NITC staff using programmatic criteria. These criteria are:

- **Does the proposal fit the NITC theme?** See Section 2 for a description of the theme.
- **To what extent is transportation the focus?** Priority is given to projects where the primary focus is on transportation.
- **To what extent does the proposal support and mentor students?** Priority will be given to projects that demonstrate meaningful student involvement in the project. Examples include students being research assistants, co-authoring publications, and making presentations.
- **Does the proposal support untenured tenure track (junior) faculty?** Additional priority will be given to core transportation junior faculty. Core faculty refers to faculty members who teach transportation classes and/or whose research agenda focuses on transportation.
- **To what extent does the proposal leverage matching funds?** Priority will be given to external cash match and active in-kind match (e.g., active participation of partners in the research project).
- **To what extent does this project support substantive and meaningful collaboration?** Collaboration may include partners from more than one discipline; external agencies, nonprofits, private industry, or other state/country agencies, etc. Priority will be given to proposals that engage in collaboration. Collaborative proposals should clearly describe the structure of the collaboration, the management and decision-making process, and justify the need for collaboration on the proposed research.
- **To what extent does the project support multi-disciplinary and/or multi-campus collaboration?** Priority is given to projects that demonstrate meaningful collaboration. Examples include Co-PIs from other NITC campuses and disciplines.

- **Is the research relevant nationally?** Priority is given to projects that involve national data sets or multiple sites. PIs need to demonstrate relevance of research at a national level.
- **Does the proposal support equity and diversity?** How well does the proposed activity broaden the participation of underrepresented groups (e.g., gender, ethnicity, disability, geographic, modal, etc.) through research as well as participation of underrepresented groups (e.g., students, stakeholders) in research activities? Priority will be given to projects that demonstrate the potential to increase access to resources and opportunities for historically underserved populations.
- **What is the PIs past performance on other UTC projects (on time reporting, etc.), likelihood of successful completion, potential for technology transfer?** NITC will not accept proposals from PIs or Co-PIs with incomplete projects and outstanding final reports.

6 Project Requirements

PIs will be asked to provide semiannual progress reports and performance metrics related to their funded research needed by NITC to meet federal reporting requirements. Adequate progress and performance on previously funded research is an overriding consideration for the funding of future grants, including this RFP. Those that have not submitted progress reports or final reports will not be considered for funding and risk having funds withheld from current grants. Similar restrictions will apply to any future NITC funding opportunities.

6.1 Progress Reports

Semiannual progress reports are required as long as the project is active. These reports will support NITC's federal reporting responsibilities. Reports will be submitted online and include: accomplishments, dissemination activities, products (e.g. submitted publications, conference presentations, etc.), impact of the project, and changes/problems. As part of each progress report, we will also require information regarding undergraduate and graduate students participating in the research, as well as information relating to publications and presentations presented at academic/professional meetings resulting from the funded research.

6.2 Publications and Presentations

PIs and students who are funded by NITC will be expected to prepare articles based on research findings for publication in refereed journals and make presentations at national conferences. Through these venues, researchers and students will receive additional peer-review feedback on their work and should incorporate this into their projects. Electronic copies of all papers submitted to journals or conferences that are based on the project research should be provided to NITC. NITC support must be acknowledged in all work that results from NITC funding. Student contributions to research should be acknowledged in publications via acknowledgement, footnote, or co-authorship. Travel funds in the amount of $3000 per proposal will be provided to the lead institution by NITC for sharing and presenting results at conferences or similar opportunities. Conference travel funds will be provided in a separate award and must not be included in the project budget. PIs are also expected to present their work in a NITC webinar, or at the Transportation and Communities Summit to ensure that results are shared with a broader audience.

6.3 Final Reports/Products

Research projects will produce a final report. The report will be sent out for external review. Alternatively, a published article based on the work in an academic journal will be accepted in lieu of peer review. For

projects funded by this RFP, PIs should plan to submit a draft report conforming to style and accessibility guidelines (template is available on the NITC website) no later than **one month** prior to the project end date. Final invoices will only be paid once the draft report is submitted. The report should document the research project in total, including a complete description of the problem, objectives, approach, methodology, findings, conclusions, and recommendations. The report should document all data gathered, analyses performed, and results achieved.

Unless the work is already published in a peer-reviewed journal, the draft report will undergo the peer-review process and, as applicable, will also be reviewed by at least one representative of the matching/partner entity. PIs are responsible for incorporating peer review comments into the final report. In addition, an editor will review the report to ensure standard formatting requirements are met.

When a report or other product (handbook, etc.) is produced as part of a joint effort, NITC will work with the matching/sponsoring entity to ensure that one report will meet the requirements of all partners. All final reports will be produced as part of a numbered report series, and will include the US DOT disclaimer and NITC funding attribution. All final reports will be posted online. More details about project requirements can be found in the "*Principal Investigators' Handbook*" posted online.

6.4 Technology Transfer

To comply with federal requirements, NITC will work with PIs to develop a technology transfer plan for each funded research grant. The primary goals for technology transfer of NITC projects are to move research into practice and to use innovative approaches to communicate research results. This plan will include:

- Engaging stakeholders;
- Developing project specific implementation plans;
- Identifying resources; and
- Tracking performance. NITC is particularly focused on outcomes and impacts that will demonstrate the usefulness and application of research results, in particular:
  - **Outcomes**
    - Number of stakeholders who collaborated on implementing research outcomes
    - Number of projects that reach deployment and adoption.
  - **Impacts**
    - Number of stakeholders reporting impact from surveys
    - Number of stakeholders who have adopted, implemented or deployed research findings or technologies

7 Budget

Applicants must use the NITC Budget Form to outline detailed budget items. Proposal budgets should be conservative and cost-effective, and should primarily direct new and original work. Funds should be spent in a manner that provides publishable and/or implementable results. In general, faculty salary (summer or academic year), student support, and tuition/fee reimbursement are allowable expenses. An appropriate amount of funding for travel for data collection purposes and materials and supplies may be included, provided that they are a direct expense related to completing the work. Please provide a narrative in the budget of how these research travel funds are planned to be used.

The project budget should NOT include travel funds to present project results at conferences. Instead, each funded proposal will be awarded a separate travel budget of $3000 to the lead institution. This travel budget will be administered separately by the lead PI's home institution and will be available to PIs and Co-PIs to present project results.

Funding for students is expected in all projects, such as research assistant tuition and salary. Federal indirect costs (overhead) specific to each NITC university and OPE (fringe benefits) should also be included in the budget. *Tuition charges are not subject to indirect costs.*

Equipment purchases (equipment is generally defined as items over $5,000) and international travel are not permitted unless specific justification is provided and *prior* approval is obtained from NITC and the U.S. DOT. Budget for expenses normally considered part of university F&A (phones, facilities, regular office supplies, computers, etc.) should not be included.

Non-NITC partners including universities and private consultants may be only included in the proposal if the role is less than 20% of the requested project budget. If PIs anticipate the **sub-consultant role will be 20% or more** of the requested project budget, justification and budget details must be submitted to Hau Hagedorn (hagedorn@pdx.edu) at least two weeks before the proposal deadline for approval by the Executive Committee. Approval is granted when it is determined that success of the project requires significant involvement, 20% or more of the budget from the sub-consultant and that the expertise and effort required of the sub-consultant is not available from within the NITC partner campuses.

Funding for salary that goes beyond normal academic or summer compensation will not be allowed. In the case of joint projects with faculty from other NITC universities, the second university activity should be budgeted as a separate budget for that university. In addition:

- Projects should be budgeted to begin no sooner than August 1, 2019 and completed no later than December 31, 2020, for a duration of no longer than 15 months. Please plan to submit the draft final report no later than one month prior to the project end date.
- New awards to prior investigators will depend on successful completion of previously-funded projects and timeliness of research progress and reporting.
- NITC reserves the right to request reductions or other changes to budgets of submitted proposals. Budgets should be justified and cost-effective, and should follow all budget guidelines for indirect cost rates, allowable expenditures, etc.
- Awards are cost-reimbursable.

7.1 Matching Funds

All awards require 120% non-federal match in the form of cash or in-kind services from project partners—to include universities, transportation and other public agencies, industry, and nonprofit organizations. Match funding is a good indication of local partner commitment to the project and will be considered in the programmatic review.

In general, federal funds are not eligible as match with the following exceptions: specifically funds under U.S.C. Title 23, Sections 503, 504(b), or 505, which refer to technology deployment, local technical assistance, state planning and research (SPR) programs and national cooperative highway research program (NCHRP) managed by the Transportation Research Board.

PIs must indicate match on the Budget Form and it must be supported by an institutional letter of commitment, with the exception of PSU which utilizes the Proposal Internal Approval Form (PIAF). Please see section 9 "Institutional Approval" regarding institutional letters of commitments. *Awards will not be finalized without confirmation of the match commitment*. Sample third party match commitment letters can be found on the NITC website. For more information regarding Match, please refer to the "Match FAQ" document found at https://nitc.trec.pdx.edu/for-researchers.

NITC follows the rules set forth in 2 C.F.R. 200.306, http://www.ecfr.gov/cgi-bin/textidx?tpl=/ecfrbrowse/Title02/2cfr200_main_02.tpl, for the use of in-kind and cash contributions as matching funds. The start date of matching funds is November 30, 2016.

8 How to Apply

Applicants must submit their application package to the online Project Proposal Management System (PPMS). As you are getting ready to apply, please consider the following:

- New to PPMS? Create an account: http://ppms.trec.pdx.edu. User guides for PPMS can be found in the Resource Section of NITC's For-Researchers webpage.
- Don't have an Open Researcher and Contributor ID or ORCID yet? Sign up here: https://orcid.org/. All investigators listed on the proposal form are required to provide an ORCID.

8.1 Project Abstracts

The abstract should consist of 1-2 paragraphs describing the project objectives and proposed methods and briefly explain how the project fits the NITC theme. The abstract is used for two purposes: to verify that the project fits the NITC theme and to aid staff in identifying potential peer reviewers.

To submit your abstract:

- Log into PPMS (http://ppms.trec.pdx.edu/)
- Select the '**NITC 16 Round 3**' grant cycle
- Enter a title and abstract for your project

Abstracts are due **March 29, 2019 at 5:00 PM PDT. PIs may only submit a proposal to if they submitted an abstract by this deadline.** However, PIs are not required to follow up the abstract submission with a proposal if they choose not to do so.

8.2 Project Proposals, Data Management Plan (DMP), and Budgets

Forms for the proposal and budget as well as a DMP guide that includes a DMP template can be found on the NITC website (http://nitc.trec.pdx.edu/for-researchers). **Do not use prior year forms.** Proposals are typically 10 to 12 pages long. The DMP is limited to two pages. Please adhere closely to the template when creating your DMP. To finalize and submit your application:

- Save the proposal form and DMP as a PDF (as separate documents) and the budget form as an Excel spreadsheet
- Log into PPMS, select the project, and enter the remaining project information (Co-PIs, Budget information, Match, etc.)
- Upload your Proposal, DMP, and Budget

Proposals, budgets, and DMPs are due April 26, 2019 at 5:00 PM PDT to qualify for funding. Incomplete or late application packages will not be considered.

9 Institutional Approval

NITC grants should be treated similar to other external grants. Accordingly, at each institution, proposals should be reviewed and approved by their home institution's research administration office. A specific Letter of Commitment from the PIs home institution will acknowledge this approval. The letter must indicate the institution's amount requested and the amount of match (including 3rd party) they will document. The letter must be signed by an institution's official authorized to obligate cost share. If applicable, 3rd party letters of intent or other documentation of match commitment should also be included with the Proposal Form. For Portland State University only, a Proposal Internal Approval Form (PIAF) will be submitted in lieu of an Institutional Letter of Commitment. Proposals and budgets must be approved by the PI's home university research office prior to submission and will not be considered without their approval

Further questions regarding university approval should be directed to the home university research administration office or the home university Executive Committee member:

- **Oregon Tech:** Sponsored Projects and Grant Administration: http://www.oit.edu/faculty-staff/sponsored-projects-grants-administration
  Preliminary approval form: http://www.oit.edu/docs/default-source/spa/proposal-approval-form.pdf?sfvrsn=4
- **PSU:** Proposal Internal Approval Form (PIAF): https://nitc.trec.pdx.edu/for-researchers
- **UO:** Apply through Electronic Proposal Clearance System (E-PCS) and Sponsored Projects Services: http://orsa.uoregon.edu/
- **UA:** Engineering Research Administration Services (ERAS) or Sponsored Projects & Contracting Services (SPCS): https://rgw.arizona.edu/administration/getting-started
- **UTA:** Office of Grants and Contract Services: http://www.uta.edu/research/administration/departments/gcs/university-process/index.php
- **UU:** UU Office of Sponsored Project: http://www.osp.utah.edu/

10 Contact Information

For questions about research proposals, please contact Hau Hagedorn, Associate Director, 503-725-2833, hagedorn@pdx.edu. Each campus has a representative on NITC's Executive Committee who can discuss the process:

- Marc Schlossberg, University of Oregon, 541-346-2046, schlossb@uoregon.edu
- Keith Bartholomew, University of Utah, 801-585-8944, bartholomew@arch.utah.edu
- Roger Lindgren, Oregon Institute of Technology, 541-885-1947, roger.lindgren@oit.edu
- Avinash Unnikrishnan, Portland State University, 503-725-2872, uavinash@pdx.edu
- Arlie Adkins, University of Arizona, 503-880-3110, arlieadkins@email.arizona.edu
- Stephen Mattingly, University of Texas, Arlington, 817-272-2859, mattingly@uta.edu

11 Proposal Checklist

- ☐ **Proposal document** (PDF). *Did you include the ORCID of all investigators? Are the preparation of your data package and its documentation included in your tasks?*
  Does the proposal include the following documents?
  - ☐ Institutional Letter of Commitment – except PSU
  - ☐ Proposal Internal Approval Form (PIAF) – PSU only
  - ☐ If applicable, 3rd party match documentation

  Proposals without university approval will not be considered.
- ☐ **Budget** (Excel file; current year form – old forms will not be accepted).
  Be sure to review all the instructions listed on the worksheets of the budget template. Work with your university research office to ensure the budget is correct. The submitted budget must also include partner's budget.
- ☐ **Data Management Plan** (PDF). *Did you follow closely the guidance provided in the template?*

Please contact the following regarding Institutional Letter of Commitment for your institution:

- **Oregon Tech:** Sponsored Projects and Grant Administration
- **UO:** Sponsored Projects Services (SPS)
- **UTA:** Office of Grants & Contract Services
- **UA:** Engineering Research Administration Services (ERAS) or Sponsored Projects & Contracting Services (SPCS)
- **UU:** Office of Sponsored Projects (OSP)