

2024-2025 C2SMARTER Center Request for Proposals

Program Objectives

C2SMARTER Center is soliciting proposals from its consortium faculty for *transformative* research projects and initiatives in 2024-2025. Proposed projects/initiatives should fit within the Center's overarching theme of **Reducing Congestion**, addressing the Center's and U.S. DOT's strategic goals and focus of implementable research, technology transfer, and educating/retraining the transportation industry workforce. Joint projects between members of consortium institutions are highly encouraged.

Proposed efforts shall identify and address U.S. DOT research strategic goals and performance metrics, as identified in the [U.S. DOT RD&T Strategic Plan](#). In addition to the merit of the proposed topic, projects will be selected based on their proposed outputs (i.e., products, tools), external partners/users of the generated products, real-world implementations that will result, and/or student/workforce training. Meaningful partner participation is critical to the success and measurable outcomes of funded efforts. **Funded projects/efforts are typically required to have a minimum 50% cost-share from non-federal sources, with a strong preference for real cash match or equivalent from non-University sources.**

Received proposals will undergo a multi-step and rigorous peer-review process to evaluate the merit of the proposed research, feasibility, and fit with the center's themes.

Proposal Submission Process

Proposal submissions will follow the outlined 3-step process as follows. Please note the submission deadlines for each step.

Step 1: Submit Proposal Abstract and Parameters in the below online form by or before June 16, 2024.

[Direct Link to Submission Form](#)

Based on the received information, topics, and number of proposals received, Principal Investigators will be contacted by Center administration with next steps to submit full proposals. PIs will be notified soon after submission is received, so earlier submissions in advance of the deadline are encouraged.

Step 2: Full Proposals submitted via the online system by or before July 14, 2024.

[Link to Proposal Submission Form \(Opens on June 16, 2024\)](#)

PIs/teams that are selected for full proposal submission should submit full proposal packages on or before the deadline to be considered. Once received, proposals will be reviewed by Center Administration for completeness and then be entered into the peer-review process.

Step 3: Response to Center and Peer-review comments by or before August 20, 2024.

Based on peer-review comments/feedback, PIs/teams will resubmit proposals through the same submission page incorporating suggested feedback.

Proposal Tracks

Proposals should fall into one of the tracks listed below. **Proposals submitted under Track 1 must have a minimum 50% cost-share from non-federal sources, with a strong preference for real cash match or equivalent from non-University sources.** Proposals submitted under Tracks 2-3 are strongly suggested, but not required, to provide non-federal cost-share as well.

Track 1: Research Projects Aimed at Reducing Congestion

Proposals under Track 1 are for innovative yet practical deployments of congestion reduction technologies to communities that most need them. Researchers will launch collaborative, interdisciplinary, initiatives which enable readily transferrable multimodal technologies and solutions. Proposals should take advantage of infrastructure, testbeds, or large and novel datasets that will break new ground in our understanding of congestion reduction systems. These can be novel approaches using artificial-intelligence/machine-learning (AI/ML)-based methods in combination with complex simulation and modeling approaches. Research under this track shall advance the state of practice while having direct applications to real-world issues facing transportation systems and users.

Proposals may also leverage models and real-world data into the development and deployment of data-driven tools, centered around fairness and equity in long-term decision-making where they are deployed. These can further implementations of responsible AI, smart cities and infrastructure, and adaptable infrastructure under the threat of major external disruptions such as COVID-19.

Research proposals under this track should identify and feature the following components:

- Technology product releases, prototypes, or tools aligned with U.S. DOT Technology Transfer goals. Examples may include mobile applications, field installation of equipment, web-tool to model or analyze data, prototype of a new sensor/device, etc.
- Implementations or pilot demonstrations to meet needs identified by agency or community partner goals. Examples may include new techniques or processes fitting a need that has been previously identified by user groups or project partners.
- Agency or industry partner for the real-world implementation/demonstration of the project output or requesting/driving the need for the policy or analysis. Partner commitment must be gained prior to authorization of the project.
- Performance measures related to equity outcomes or impacts identified as addressing underserved communities or population.

Preferred proposals

- New, innovative, transformative project ideas that aren't continuations of ongoing work, and can even serve as seed projects for larger, national, efforts.
 - Continuation projects will be considered if outstanding agency partner need (and cost share) or significant real-world impact has been demonstrated.
- Interdisciplinary or multi-university partnerships within the consortium or other UTCs designed to expand the scope and impact of C2SMARTER research outcomes.
- Real-world implementations or deployments with partner agency/industry demonstrated need, commitment to participate in a meaningful way in the project, and/or cost-share matching funding.

Track 2: Education or Development Program Filling a Gap in Transportation Workforce Development

Proposals under Track 2 will create programs that will teach transformative technologies/methods that will reduce congestion to one or more diverse student groups, from primary-level students through working professionals. They will (1) equip students with the foundational knowledge they need to begin their careers, as well as instilling soft skills like adaptability and willingness to learn and experiment; or (2) help current industry and agency professionals upskill to master new technologies and keep up with rapid technological change.

Example initiatives:

- *Consortium student-driven research projects or capstones with mentorship*
- *Cross-school and multi-entity learning and collaboration opportunities, including internships and other placement programs*
- *K-12 targeted programs to interest and cultivate a new generation of transportation professionals*
- *Technology/skills development in Rural, Isolated, Tribal, or Indigenous communities*
- *Certificate programs or apprenticeships for new technologies, cybersecurity, or analytics for congestion reduction*
- *Upskilling programs for agency staff and other working professionals*

Proposals under this track should identify and feature the following components:

- School or agency/partner organization commitment to participating in the program.
- Plan to target or improve diversity among participants in identified programs, including attracting those from underrepresented backgrounds.

Track 3: Signature Technology Transfer Activities to Address Congestion Reduction and Transportation System Equity

Proposals under Track 3 will develop and execute outreach focused on equitable outcomes, for targeted and effective technology transfer across partnerships, communities, and diverse student groups. Activities shall rely on the diverse talents, connections, and makeup of the multi-university consortium. They aim to leverage diverse institutional relationships with city and state agencies, and with the local communities who rely on them, enable technology transfer efforts to address even the most complex issues, including land use policy, multimodal deployment, and high transportation costs.

Example initiatives:

- *Symposia with academia, industry, and agencies to explore the ways in which specific C2SMARTER research most impactful towards congestion reduction*
- *Community-based workshops, event or program to study the impact of transportation infrastructure projects and policies on underserved or marginalized communities (including Rural, Isolated, Tribal, or Indigenous [RIT] communities)*
- *Tools to increase knowledge capture and sharing research outcomes, performance measures, tools, benefits, and best practices to diverse audiences*

Proposals under this track should identify and feature the following components:

- Identified need or committed participation in the described programs from industry, agency, or community partner.
- How the effort will address previously-identified congestion reduction or equity issue(s).
- How the effort will build off ongoing diversity & inclusion activities to continue making strides in this area.

Submission Eligibility

Proposals will be accepted for projects/efforts led by full-time faculty or researchers with principal investigator status during the 2024-2025 academic year at any of C2SMARTER's consortium institutions:

- New York University
- North Carolina A&T
- NYC College of Technology
- Rutgers University
- Texas Southern University
- University of Texas-El Paso
- University of Washington

Deadlines and Schedule

- Abstract submissions to this RFP are due via the online form by **June 16, 2024**.
- Full proposals must be submitted via the online system by **July 14, 2024**.
- Review, follow-up, selection, and funding allocations will take place in August 2024, with final revised submissions due by **August 20, 2024**.
- All projects/efforts will be expected to commence by **September 1, 2024** with a scheduled completion date of **August 31, 2025 or earlier**. Please ensure that proposed efforts can be completed within 1 year. If a multi-year effort is envisioned, describe tangible outcomes/outputs within the 1st year of the project, including an interim final report.

Guidelines for Full Proposal Submissions

Note: Do not prepare or submit full proposals until invited to by Center administration.

Full proposal submissions must contain the following (2) elements:

1. Proposal Document

Proposals should be submitted using the provided Research Project Description template (.docx format) covering the following at a minimum:

1. 1-2 page cover in the prescribed USDOT format
2. A complete scope of work covering:
 - a. Background and review of prior research or need, highlighting any previously conducted research or efforts in the area
 - b. Problem statement, objectives, and proposed methodology
 - c. Key project elements and milestones
 - d. Deliverables or outputs that will come about as a result of the effort
 - e. Implementation and dissemination plan, including identified tech transfer and outreach activities
 - f. Data management plan
3. A detailed list of tasks/milestones and their proposed timeline, along with when deliverables or outputs will be produced
4. A description of project personnel involved and commitment levels, including:
 - a. Planned collaboration with consortium members, partners, public agencies, industry, etc.
 - b. Research staff, students, and faculty time committed to the effort

- c. A description of where the minimum 50% non-federal cost-sharing will come from (Tracks 1-3 required; Tracks 4-5 optional)
- d. A detailed breakdown of anticipated charged time and supplies, equipment, or travel associated with the requested effort

In addition, appendices should be included that provide the following:

5. 2-page max CVs of the PI and key personnel highlighting related research outcomes
6. 2-page max budget justification detailing need
7. Cost share commitment and other letters of support from agency or industry partners
8. If the research requires IRB approval for human subjects research, documentation should be included to indicate the plan to seek IRB approval if the proposal is funded

2. **Proposal Budget**

The attached [Proposal Budget Template \(.xlsx format\)](#) should be completed detailing funding request and cost-sharing. There are no minimum or maximum amounts of funding requests for proposals, but as a guide, center funding for proposals has typically been limited to the following maximums:

Proposals under Tracks 1:

- Single institution, single principal investigator (no co-principal investigator): \$50,000
- Single institution, multiple co-principal investigators: \$90,000
- Multi-institution, multiple co-principal investigators: \$130,000

Proposals under Tracks 2-3:

- Single institution, single principal investigator (no co-principal investigator): \$20,000
- Multi-institution, multiple co-principal investigators: \$40,000

These numbers include indirect costs but exclude the minimum 50% non-federal cost share required for each project. **As a reminder, funded projects (Tracks 1) are required to have a minimum of 50% of the project budget matched from another non-federal cost-sharing source.**

Review Criteria

Each proposal will be submitted to a Review Committee to ensure proposals meet the Center's requirements. The Review Committee will seek a minimum of 2 peer reviews from outside of the Center, and will rank proposals in order of acceptance, after which funding will be allocated accordingly. Conditions to the scope of the project may be added in order for a project/initiative to be accepted.

The proposals will be judged along the following criteria:

- 1) Does the proposed topic have strong intellectual merit?
- 2) Does the proposed topic fit with the research tracks in this RFP?
- 3) Does the proposal take advantage of prior C2SMART/C2SMARTER or other research to expand the scope and value of the research without replicating previously answered questions?
- 4) Does the proposal provide implementable outcomes including knowledge transfer to public agencies and professionals?
- 5) Does the proposal take advantage of industry resources and partners?
- 6) Do the principal investigators have a good track record of providing deliverables per requirements and completing projects on-time?