

2020 C2SMART Center Request for Proposals

Program Objectives

C2SMART is soliciting proposals from its consortium faculty for research projects in 2020. In addition to the merit of the proposed research, projects will be selected based on their proposed outputs (i.e. products, tools), external partners/users of the generated products, and real-world implementations that will result. Received proposals will undergo a rigorous peer-review process to evaluate the merit of the proposed research, feasibility, and fit with the center's themes.

Research Topic Areas

Each proposal should fit into one or more of the topic areas listed below, and should identify in detail how the proposed research will fit into the following themes:

- **Topic Area 1: Big Data and Urban Analytics in Smart Cities.** Big data generated by field implementations and non-traditional sensing technologies can be used to develop secure and interoperable data sharing platforms and system-oriented solutions. There is a need to better take advantage of these sources to address a wide range of mobility needs involving people and goods to achieve efficiency, resiliency, accessibility, and sustainability.
- **Topic Area 2: Connected and Autonomous Mobility.** Connected and autonomous vehicles, rail systems, and other modes will bring revolutionary changes to the way our transportation systems work, but many questions about how these systems will work in a real city remain unanswered. Research is needed to better deploy these systems throughout urban networks and pave the way for widespread real-world implementation.
- **Topic Area 3: Microtransit, Micromobility, and Shared Mobility.** New modes and services are revolutionizing urban transportation and providing increased mobility options. As these new services are introduced, there is a need to ensure they are meeting city residents' mobility needs in an efficient, safe, and equitable way.
- **Topic Area 4: Safety of Pedestrians and Mobility Systems.** New modes and services are revolutionizing urban transportation and providing increased mobility options. As these new services are introduced, there is a need to ensure they are meeting city residents' mobility needs in an efficient, safe, and equitable way.
- **Topic Area 5: Resilient, Secure, and Smart Transportation Infrastructure.** Currently, most repair, maintenance, and replacement decisions for urban infrastructure are made in the absence of reliable data. There is a need to assess the vulnerabilities of urban infrastructure and work towards resilient systems that function when strained by difficult conditions.
- **Topic Area 6: Equity & Accessibility for Under-represented Groups in Transportation.** Despite the growing variety of transportation options available in cities, many face limited choices due to physical accessibility limitations, safety concerns, or other impediments to safe and efficient travel. Research is needed to improve accessibility for groups who are often underrepresented or overlooked in transportation policy development and research.



Guidelines for Submitting a Proposal

Proposal submissions will follow the outlined 2-step process as follows. Please note that submission deadlines for each step.

Step 1: Submit Proposal Abstract and Parameters in the below online form on or before November 22, 2019.

[Direct Link to Online Form](#)

Based on the received information, subjects, and number of proposals received, Principal Investigators will be contacted by Center administration with next steps to submit full proposals.

Step 2: Full Proposals must be submitted via the online submission system on or before December 9, 2019.

[Link to Proposal Submission Form \(Opens on November 23, 2019\)](#)

Full proposal submissions must contain the following (3) elements:

1. Proposal Document

The following key characteristics should be addressed in each proposal:

- Which agency or industry members will serve either as partners in the research or as users of the research output, and how the research will translate into implementable results
- Technology products that will be created as outputs to the research (tools, software, hardware, models, etc.)
- Compliance of the project with the center's [Technology Transfer Plan](#), and how the project will support the stated performance metric goals in the plan
- Datasets that will be generated as a result of the research, and how the data will be managed and made available as outlined in the center's [Data Management Plan](#)
- How the research findings will be disseminated through measurable outreach, education, or workforce development/training efforts
- Where the minimum 50% non-federal cost share comes from and how it will support the proposed research

Proposals should be submitted using the provided [Research Project Description template \(.docx format\)](#) covering the following:

1. A 1-page cover in the prescribed USDOT format
2. A complete scope of work covering:
 - a. Background and review of prior research, highlighting any previously conducted C2SMART Center research in the area
 - b. Problem statement, research objectives, and proposed methodology
 - c. Key project elements and milestones
 - d. Deliverables or outputs that will come about as a result of this research

- e. Discussion of intellectual merit and broader impacts and benefits arising from implementing the proposed research
 - f. How the research will be implemented and disseminated
 - g. Plans for technology transfer and data management
 - h. Outreach activities
 - i. Key functions and modes of the research
3. A detailed list of tasks 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. Anticipated collaboration with consortium members, other partners, public agencies, or industry
 - b. Research staff, students, and faculty time committed to this project
 - c. A description of where the minimum 50% non-federal cost-sharing will come from
 - d. A detailed breakdown of anticipated charged time and supplies, equipment, or travel associated with the project
 5. Brief responses to additional evaluation questions included in the template (max 2 sentences each)

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

6. 2-page max CVs of the PI and all key personnel (NSF style) highlighting relationship with prior C2SMART research and outcomes
7. 2-page max budget justification detailing need
8. Cost share commitment letters and other letters of support from agency or industry partners
9. 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:

- Single institution, single principal investigator initiation proposals for Assistant Professors (no co-principal investigator): \$30,000
- 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: \$150,000

These numbers include indirect costs but exclude the minimum 50% non-federal cost share required for each project. **As a reminder all C2SMART-funded projects are required to have a minimum of 50% of the project budget matched from another non-federal cost-sharing source.**

3. Data Management Plan

The attached Data Management Plan Template (.docx format) should be completed detailing how data will be generated, managed, protected, and disseminated.



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. These reviews are meant to provide additional perspective only; the Review Committee will make the final decisions, which are justifiable to the Center's Advisory Board. The Review Committee 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 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 contribute to the mission and one or more of the thrust areas in C2SMART, including the Special Topic Research Area of this RFP?
- 3) Does the project take advantage of prior C2SMART or other research to expand the scope and value of the research without replicating previously answered questions?
- 4) Does the project provide implementable outcomes including knowledge transfer to public agencies and professionals?
- 5) Does the project provide training or workforce development?
- 6) Does the project take advantage of industry resources including current C2SMART industry partners?
- 7) Does the project scope, budget, data, and schedule appear feasible?
- 8) Do the principal investigators have a good track record of providing deliverables per requirements and completing projects on-time?

Deadlines and Schedule

- Abstract submissions to this RFP are due via the online form by **November 22, 2019**.
- Full proposal responses must be submitted via the online system by **December 9, 2019** with no exceptions.
- Review, follow-up, selection, and funding allocations will take place over December 2019 and January 2020, with notice of award occurring in February 2020.
- All projects will be expected to commence by **March 1, 2020** with a scheduled completion date of **February 28, 2021** (in the case of one-year projects).
- Please note that final report drafts are due to the Center 1-month prior to project completion.

