

UNIVERSITY
TRANSPORTATION CENTERS
PROGRAM

***FY 2022 NOTICE OF
FUNDING OPPORTUNITY***

Opening Date: May 25, 2022
Requested Date for Letter of Intent: July 1, 2022
Required Application Due: August 25, 2022

www.grants.gov Opportunity No. UTCOPENCOMP2022

Assistance Listing (CFDA) 20.701

**Office of the Assistant Secretary for Research and Technology
U.S. Department of Transportation
Washington, D.C. 20590-0001**

<https://www.transportation.gov/content/university-transportation-centers>

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SECTION A PROGRAM DESCRIPTION

A.1 Introduction

The Infrastructure Investment and Jobs Act (IIJA; P. L. 117-58, November 15, 2021) (commonly known as the “Bipartisan Infrastructure Law,” or “BIL”) authorizes the Secretary of Transportation to make grants to eligible non-profit institutions of higher education¹ to establish and operate University Transportation Centers (UTCs or Centers). Non-profit institutions of higher education may include qualifying two-year institutions (20 U.S.C. § 1001(a))². The Office of the Assistant Secretary for Research and Technology (OST-R) of the U.S. Department of Transportation (US DOT or DOT) will manage the UTC Program (**Assistance Listing, formerly Catalog of Federal Domestic Assistance number, 20.701**).

Through this Notice of Funding Opportunity, the US DOT seeks competitive grant applications for National UTCs, Regional UTCs, and Tier 1 UTCs as set forth in the IIJA (detailed descriptions of the three types of UTCs are provided in **SECTION B FEDERAL AWARD INFORMATION**). UTCs will be selected by the Secretary, in consultation with the heads of the operating administrations of the US DOT, as appropriate (49 U.S.C. § 5505(b)(4)(B) as amended by the IIJA, Sec. 25017).

UTCs shall support surface transportation through the following US DOT statutory research priorities (49 U.S.C. § 6503(c)(1) as amended by the IIJA, Sec. 25014):

- A. Improving Mobility of People and Goods;**
- B. Reducing Congestion;**
- C. Promoting Safety;**
- D. Improving the Durability and Extending the Life of Transportation Infrastructure;**
- E. Preserving the Environment;**
- F. Preserving the Existing Transportation System; and**
- G. Reducing Transportation Cybersecurity Risks.**

A UTC and its consortium members must be established and located physically in the United States or its territories or on Tribal lands. It must be a consortium of two or more nonprofit

¹ The *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Grants*, Title 2 of the Code of Federal Regulations, Part 200 defines “institution of higher education” as that term is established in 20 U.S.C. § 1001(a).

² Qualifying two-year institutions may include junior or community colleges if they meet the requirements of 20 U.S.C. § 1001(a).

institutions of higher education. Each Center is required to obtain matching funds from non-Federal sources. National and Regional UTCs must obtain matching funds in an amount equal to the US DOT award amount. The match for Tier 1 UTCs is 50 percent of the US DOT award amount. The US DOT grant funds may be expended up to November 30, 2028, and Centers will have until that date to meet the full match requirement by obtaining and expending those funds.

Specific instructions on how to apply for UTC grant funding under this Notice of Funding Opportunity are provided in **SECTION D APPLICATION AND SUBMISSION INFORMATION**.

A.2 UTC Program Purpose and Center Objectives

As stated in 49 U.S.C. § 5505, the purpose of the UTC Program is for eligible nonprofit institutions of higher education to establish and operate University Transportation Centers.

The objectives of each of these Centers are to:

- Advance transportation expertise and technology in the varied disciplines that comprise the field of transportation through education, research, and technology transfer activities;
- Provide for a critical multimodal transportation knowledge base outside of the US DOT; and
- Address critical workforce needs and educate the next generation of transportation leaders with respect to the statutory research priorities.

Although every Center has the same broad objectives, the US DOT encourages diversity among the program participants and in the approaches individual Centers take to achieve the program objectives. The US DOT encourages unique approaches to research, education, workforce development and technology transfer, building on or reflecting institutional expertise, facilities, and partnerships. In order to achieve its transformative vision of a fully connected, integrated, accessible, and interoperative multimodal system of systems that is centered on the seamless movement of people and goods, the US DOT desires UTCs to engage in breakthrough, advanced, and transformative research, education and workforce development, and technology transfer activities that cut across disciplines and span multiple modes of transportation. UTCs have an important role to play in helping to transform the Nation's surface transportation system to achieve this vision, inclusive of rail, maritime, highway, pipelines, transit, and any surface links to aviation.

A.3 UTC Program History

The history of the UTC Program begins with its initial authorization in the Surface Transportation and Uniform Relocation Assistance Act of 1987. After a nationwide competition, in 1988 the US DOT awarded grants to create a UTC in each of the ten standard Federal regions. The primary purpose of the program at that time was conducting research.

The Intermodal Surface Transportation Equity Act (ISTEA) of 1991 reauthorized the UTC Program through Fiscal Year 1997 and expanded its mission to include education and technology transfer, as well as research. In addition to the ten Regional Centers, ISTEA created three “national” Centers and six University Research Institutes at universities that were named in the Act. The program expansion led the US DOT to adopt a strategic planning approach to program management based on a unified mission and goal set for all 13 Centers and six Institutes.

In 1998, the Transportation Equity Act for the 21st Century (TEA-21) reauthorized the UTC Program for an additional six years and increased the total number of Centers to 33. In addition to the ten Regional Centers, which were selected competitively in 1999, TEA-21 created 23 other Centers at institutions named in the Act. TEA-21 established education as one of the primary objectives of a UTC and institutionalized the use of strategic planning in UTC grant management.

The Safe, Accountable, Flexible, Efficient, Transportation Equity Act: A Legacy for Users (SAFETEA-LU), enacted in 2005, provided the most significant expansion of the UTC program to date. SAFETEA-LU increased the number of UTCs from the 33 established in TEA-21 to 60, including the ten Regional UTCs plus a new group of ten competitive centers called Tier 1 Centers; the other 40 UTCs were located at institutions named in the Act. Annual authorized funding for the UTC program also increased from \$32.5 million in TEA-21 to \$85.9 million in SAFETEA-LU.

The Surface Transportation Extension Act of 2010, sec. 411(e)(3), gave the US DOT the discretion to redistribute funds allocated to specified research projects and programs designated in SAFETEA-LU. The Fiscal Year 2011 funds were made available through full and open competition following the framework of the competitive UTC programs under SAFETEA-LU sections 5506(e) and (f). Grants of approximately \$3.5 million each were awarded to ten Tier 1 UTCs, two Tier 1 Transit-Focused UTCs, and ten Regional UTCs. Fiscal Year 2012 funds were added to these grants following additional extension legislation.

In 2012, the Moving Ahead for Progress in the 21st Century Act (MAP-21) continued the UTC program, authorizing the competitive selection of 35 UTCs to receive a total of \$72.5 million in funding for each of Fiscal Years 2013 to 2014, with continued funding from extension acts through Fiscal Year 2015. Following a competition in 2013, grants of approximately \$3 million each were awarded to five National UTCs, \$2.75 million each to ten Regional UTCs, and \$1.5 million each to twenty Tier 1 UTCs.

The Fixing America’s Surface Transportation (FAST) Act was enacted in December 2015, establishing the UTC Program similarly to MAP-21 with 35 UTCs to receive funding from Fiscal Years 2016 to 2020. The FAST Act was later extended through Fiscal Year 2021. Authorized funding increased incrementally from \$72.5 million per year to \$77.5 million per year. Congress provided one-time funding and authorizations for additional grants in 2018 for two additional National UTCs (total authorization \$15 million) and in 2020 for additional Tier 1 UTCs (total authorization \$5 million). These grants were competed and awarded in 2019 and

2020 respectively, and they operate similarly to the FAST Act-authorized UTCs except for a shorter period of performance and smaller award amounts.

The Infrastructure Investment and Jobs Act (IIJA) was enacted in November 2021, establishing the UTC Program as it is described throughout this Notice of Funding Opportunity. The IIJA's reauthorization of the UTC Program both sustains existing and establishes new and vital initiatives in transformational research, education and workforce development, and technology transfer that benefit the U.S. traveling public, freight movement, and the safety and efficiency of the U.S. transportation system, while addressing concerns of climate change and environmental impacts caused by and affecting transportation systems and vulnerable communities, and issues of transportation accessibility and equity.

The most significant changes in the UTC Program between the IIJA and the previous FAST Act are:

- a seventh research priority, Reducing Transportation Cybersecurity Risks, is added (see **Section A.1 Introduction** above);
- all new candidate topic areas under each of the seven research priorities (see **Section D.2.2.3.1.A Criterion One: Research Activities and Capability** below);
- award amounts are expected to be higher throughout the life of the grants (see **Section B FEDERAL AWARD INFORMATION** below); and
- an institution of higher education may receive only one grant as the lead of a consortium (see **Section C.3 Multiple Applications** below).

Additional information about the UTC Program is available on the UTC Program website (<https://www.transportation.gov/content/university-transportation-centers>).

A.4 Relationship to Other US DOT Efforts

The US DOT continues to build on existing efforts to apply research awards and resources in an effective manner, in order to support the DOT mission, "To deliver the world's leading transportation system, serving the American people and economy through the safe, efficient, sustainable, and equitable movement of people and goods." As part of preparing their applications, applicants should familiarize themselves with US DOT's current strategic planning and innovation efforts:

- US DOT has developed a new *FY 2022-2026 DOT Strategic Plan*. This plan is available on the US DOT website at <https://www.transportation.gov/dot-strategic-plan>. Note the Key Performance Indicators under the Transformation strategic goal on page 33 as items especially relevant to UTC Program grants. As noted in **D.2.2. Applications** below, applicants will need to identify which strategic goals and objectives under this plan the proposed UTC supports.
- US DOT is developing a new *Research, Development and Technology (RD&T) Strategic Plan for Fiscal Years 2022-2026* (as required by the IIJA, Sec. 25014), which aligns with the *DOT Strategic Plan* and with the revised goals of the IIJA. Information about *RD&T*

Strategic Plan development is available at <https://www.transportation.gov/utc/current-competition>.

- As a step toward a long-term goal of reaching zero roadway fatalities, US DOT developed its *National Roadway Safety Strategy* outlining a comprehensive approach to significantly reducing serious roadway injuries and deaths. The strategy is on the US DOT website at <https://www.transportation.gov/NRSS>.
- US DOT recently released its new *US Department of Transportation Equity Action Plan* that highlights work the Department will undertake to expand access and opportunity to all communities while focusing on underserved, overburdened, and disadvantaged communities. The plan is on the US DOT website at <https://www.transportation.gov/priorities/equity/actionplan>.
- In addition, the Department of Transportation stresses the critical importance of innovation, a concept that is recognized to be a key component of the work done by the nation's colleges and universities. Information about US DOT's emphasis on innovation is available on the US DOT website at <https://www.transportation.gov/innovation>, along with a set of US DOT Innovation Principles (<https://www.transportation.gov/priorities/innovation/us-dot-innovation-principles>) developed to guide the Department's approach toward this desired innovation.

Programs managed by the US DOT and other Federal agencies are charged with supporting and complying with Presidential Executive Orders and Memoranda. US DOT has specific interest in providing research, education, and technology transfer opportunities for historically underserved communities, including those served by minority institutions. US DOT is also interested in accelerating research and technology transfer that addresses transportation's critical role in climate change and sustainability. Of particular interest for the university community, US DOT is committed to the principles of scientific integrity in research. Applicants should familiarize themselves with the following Executive Orders and Memorandum that will be relevant to applications submitted under any of the seven statutory research priority areas, toward advancing US DOT goals:

- Advancing Racial Equity and Support for Underserved Communities Through the Federal Government (<https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/20/executive-order-advancing-racial-equity-and-support-for-underserved-communities-through-the-federal-government/>)
- Tackling the Climate Crisis at Home and Abroad (<https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/27/executive-order-on-tackling-the-climate-crisis-at-home-and-abroad/>)
- Memorandum on Restoring Trust in Government Through Scientific Integrity and Evidence-Based Policymaking (<https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/27/memorandum-on-restoring-trust-in-government-through-scientific-integrity-and-evidence-based-policymaking/>)

Federal agencies including US DOT are each required to develop a Strategic Plan at the beginning of a new Presidential administration, establishing the agency's overarching goals and

identifying objectives to reach those goals, as well as key performance indicators to measure results. US DOT is required to track and report its progress through the key performance indicators toward achieving the goals. Because activities conducted by UTCs will contribute toward these goals, objectives, and indicators, elements of US DOT's Strategic Plan (<https://www.transportation.gov/dot-strategic-plan>) are incorporated throughout this Notice of Funding Opportunity.

SECTION B FEDERAL AWARD INFORMATION

The US DOT will operate the UTC Program based on the principles of full and open competition. Awards will be in the form of grants to successful applicants. The funding and authorization available to OST-R for this Notice of Funding Opportunity at this time are solely from Federal Fiscal Year 2022 funds.

The Infrastructure Investment and Jobs Act (IIJA, sec. 11101(c)(1)(E)) authorizes \$80 million for Federal Fiscal Year 2022 (FY 2022), \$80.5 million for Fiscal Year 2023 (FY 2023), \$81 million for Fiscal Year 2024 (FY 2024), \$81.5 million for Fiscal Year 2025 (FY 2025), and \$82 million for Fiscal Year 2026 (FY 2026) for 35 competitive grants to UTCs. In addition, the IIJA (Division J, Title VIII) provides \$19.0 million per fiscal year “to remain available until expended for amounts made available for each of fiscal years 2022 through 2026...to carry out the University Transportation Centers Program.”

Authorized FY 2022 through FY 2026 funds are subject to appropriations and to an annual obligation limitation, and 49 U.S.C. § 5505(d)(3) allows US DOT to expend not more than 1.5 percent of the funding amounts made available for the UTC Program to carry out coordination, evaluation, and oversight activities for the program, the combination of which may reduce grant award amounts. The amount of budget authority available in a given year may be, and has been in recent years, less than the amount authorized for that fiscal year, resulting in reductions of award amounts. As of the release date of this Notice of Funding Opportunity, US DOT anticipates being able to award in FY 2022 the full amounts shown for that year in **Section B.1 Number of Awards** below.

Current UTC Program grant recipients are eligible to apply for, and to receive if selected, grant funding through this competition. If a current UTC Program grant recipient is selected to be a new UTC under this Notice of Funding Opportunity, the new grant will be managed as a separate entity from any previous grant(s).

Funds made available under this Notice of Funding Opportunity may be expended from an anticipated start date of November 15, 2022 through November 30, 2028.

B.1 Number of Awards

Three types of Centers will be selected under this Notice of Funding Opportunity:

- Five National UTCs;
- Ten Regional UTCs, one of which will be a Center focusing its efforts in the field of comprehensive transportation safety, congestion, connected vehicles, connected infrastructure, and autonomous vehicles, including the cybersecurity implications of technologies relating to connected vehicles, connected infrastructure, and autonomous vehicles; and
- 20 Tier 1 UTCs.

The expected fiscal year funding amounts for each type of Center, based on the authorized amount of funding before any of the reductions noted in **SECTION B FEDERAL AWARD INFORMATION** above and assuming selection of 20 Tier 1 UTCs, are up to the following amounts:

Nationals	\$4,000,000 each X 5	\$20,000,000
Regionals	\$3,000,000 each X 10	\$30,000,000
Tier 1s	\$2,000,000 each X 20	<u>\$40,000,000</u>
TOTAL FY22		\$90,000,000

Nationals	\$4,000,000 each X 5	\$20,000,000
Regionals	\$3,000,000 each X 10	\$30,000,000
Tier 1s	\$2,000,000 each X 20	<u>\$40,000,000</u>
TOTAL FY23		\$90,000,000

Nationals	\$4,000,000 each X 5	\$20,000,000
Regionals	\$3,000,000 each X 10	\$30,000,000
Tier 1s	\$2,000,000 each X 20	<u>\$40,000,000</u>
TOTAL FY24		\$90,000,000

Nationals	\$4,000,000 each X 5	\$20,000,000
Regionals	\$3,000,000 each X 10	\$30,000,000
Tier 1s	\$2,000,000 each X 20	<u>\$40,000,000</u>
TOTAL FY25		\$90,000,000

Nationals	\$4,000,000 each X 5	\$20,000,000
Regionals	\$3,000,000 each X 10	\$30,000,000
Tier 1s	\$2,000,000 each X 20	<u>\$40,000,000</u>
TOTAL FY26		\$90,000,000

Through this Notice of Funding Opportunity, the US DOT is competing UTC grants in fixed amounts within the ranges enabled by 49 U.S.C. § 5505(c) for each type of UTC (National, Regional and Tier 1) in order that applicants for each type of grant may be evaluated fairly against a fixed level of effort.

B.2 Types of Centers

B.2.1 National Centers

The five National Centers must focus their efforts on national transportation issues as identified by one of the statutory research priority areas (49 U.S.C. § 6503(c)(1) as amended by IIJA sec. 25014): Improving Mobility of People and Goods; Reducing Congestion, Promoting Safety; Improving the Durability and Extending the Life of Transportation Infrastructure; Preserving the Environment; Preserving the Existing Transportation System; and Reducing Transportation Cybersecurity Risks. Although there are seven research priority areas, only five National Centers may be funded; selection within the seven research priority areas will be determined by the relative merits of applications received and in order to achieve a balanced portfolio across all selected Centers as discussed in **SECTION E APPLICATION REVIEW INFORMATION** below.

SECTION D APPLICATION AND SUBMISSION INFORMATION provides additional information on non-exclusive candidate topic areas categorized under each research priority area.

National Centers may be based in any region and may include consortium members that are not in the same Federal region as the lead institution.

B.2.2 Regional Centers

The ten Regional Centers must focus their efforts on national transportation issues as identified by one or more of the seven statutory research priority areas: Improving Mobility of People and Goods; Reducing Congestion; Promoting Safety; Improving the Durability and Extending the Life of Transportation Infrastructure; Preserving the Environment; Preserving the Existing Transportation System; and Reducing Transportation Cybersecurity Risks. **SECTION D APPLICATION AND SUBMISSION INFORMATION** provides additional information on non-exclusive candidate topic areas categorized under each research priority area.

The IIJA (sec. 25017, amending 49 U.S.C. § 5505(c)(3)(E)) also requires that one of the ten Regional UTC awards be given to a Center focusing its efforts in the field of comprehensive transportation safety, congestion, connected vehicles, connected infrastructure, and autonomous vehicles, including the cybersecurity implications of technologies relating to connected vehicles, connected infrastructure, and autonomous vehicles. Other than this specific focus area, this UTC will perform the other functions of a Regional Center.

The ten Regional Centers are to be located one in each of the ten standard Federal regions listed in Table 1 below. They are distinct from the National and Tier 1 Centers in that they must also address what the Regional UTC identifies as regional needs. While a National or Tier 1 Center may be based in any region and may form a consortium with universities that are not located in its region, a Regional Center, including all consortium members, must be located within the Federal region to be served. Each Regional Center must serve as a focal

point within its respective region to help coordinate UTC transportation research and education programs with regional needs and initiatives. At a minimum, a Regional Center should work with the other UTCs in its region to maximize the effectiveness of the region’s collective services and programs.

Table 1. Standard Federal Regions

Standard Federal Regions	
Region 1	Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont
Region 2	New Jersey, New York, Puerto Rico, U.S. Virgin Islands
Region 3	Delaware, District of Columbia, Maryland, Pennsylvania, Virginia, West Virginia
Region 4	Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee
Region 5	Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin
Region 6	Arkansas, Louisiana, New Mexico, Oklahoma, Texas
Region 7	Iowa, Kansas, Missouri, Nebraska
Region 8	Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming
Region 9	Arizona, California, Guam, Hawaii, Nevada
Region 10	Alaska, Idaho, Oregon, Washington

B.2.3 Tier 1 Centers

The twenty Tier 1 Centers must focus their efforts on national transportation issues as identified by one of the seven statutory research priority areas: Improving Mobility of People and Goods; Reducing Congestion; Promoting Safety; Improving the Durability and Extending the Life of Transportation Infrastructure; Preserving the Environment; Preserving the Existing Transportation System; and Reducing Transportation Cybersecurity Risks. **SECTION D APPLICATION AND SUBMISSION INFORMATION** provides additional information on non-exclusive candidate topic areas categorized under each research priority area.

Tier 1 Centers may be based in any region and may include consortium members that are not in the same Federal region as the grantee university.

SECTION C ELIGIBILITY INFORMATION

C.1 Eligible Applicants

Only U.S. non-profit institutions of higher education as defined under 20 U.S.C. § 1001(a) are eligible to apply. Non-profit institutions of higher education may include qualifying two-year institutions that meet the requirements of 20 U.S.C. § 1001(a). Any application submitted by or including in its consortium an entity other than a U.S. non-profit institution of higher education will not be considered for selection.

As noted in **SECTION B FEDERAL AWARD INFORMATION**, current UTC Program grant

recipients are eligible to apply for grant funding. If a current UTC Program grant recipient is selected to be a new UTC under this Notice of Funding Opportunity, the new grant will be managed as a separate entity from any previous grant(s).

Under 49 U.S.C. § 5505(b)(1), a UTC must be a consortium of two or more non-profit institutions of higher education led by one lead institution, all located in the United States or its territories or on Tribal lands. Typically, a consortium is a meaningful arrangement with all members involved in planning the overall direction of the Center's activities and participating in most aspects of the Center; the consortium is a long-term relationship lasting the full life of the grant. *Any application submitted by a sole non-profit institution of higher education that is not part of a consortium will not be considered for selection.*

Universities may collaborate with State, Tribal, and local Departments of Transportation and Departments of Public Works, metropolitan and regional planning organizations, the private sector, the philanthropic sector, and non-profit organizations; however, organizations that are not defined as U.S. non-profit institutions of higher education will not be considered members of the consortium. Organizations that are not members of a consortium may collaborate with a Center on a particular project or provide a service that assists in accomplishing that Center's activities.

The grantee/recipient institution will be the direct and primary recipient of the US DOT funds and must perform a substantive role in carrying out Center activities; it may not serve solely or primarily as a conduit for awards to another party. Under this Notice of Funding Opportunity, there is no minimum requirement for concentration of funding at the grantee institution or for consortium institutions.

C.2 Cost Sharing or Matching Funds

Total funding for a Center's operation must include the US DOT funding plus non-Federal matching funds. The matching funds may include Federal funds provided to a recipient under 23 U.S.C. § 504(b) or 505 (local technical assistance and State planning and research programs managed by the Federal Highway Administration). No other sources of Federal funds, including from non-US DOT Departments and Agencies, may be counted toward the match requirement.

The non-Federal matching funds may be cash or in-kind, must be used to accomplish program objectives and the purpose of the grant, and must be fully documented in the Center's records. Grantees will have the length of the grant period to obtain and to spend the full amount of required matching funds. Any restrictions under the grant or in Federal grant regulations 2 CFR Part 200 on allowability of costs apply to matching funds as well as the Federal funds.

National and Regional UTCs must obtain matching funds in an amount equal to the US DOT grant award amount. The match for Tier 1 UTCs must be 50 percent of the US DOT grant award amount.

Letters of commitment are neither required nor permitted in the application for space reasons. Instead, applicants wishing to identify such commitments should note in the text of the application if you have received such commitments, keeping any letters of commitment on file for audit purposes. If copies of such letters are included, they will count toward the application's page limit.

C.3 Multiple Applications

Institutions may apply for multiple grants by submitting separate applications for each, and they may choose to submit separate applications for grants under more than one type of UTC category (National, Regional or Tier 1). However, 49 U.S.C. § 5505(b)(2) (as amended by IJJA, Sec. 25017) restricts the number of UTC grants that an institution may receive through this competition as a lead institution of a consortium to **one UTC grant** (*previously a lead institution could receive one grant under each type of center, but now only one UTC grant in total may be received*). In this competition, there are no restrictions on the numbers or types of UTCs of which an institution may be a non-lead consortium member; an institution could be selected as the lead on one UTC and as a non-lead consortium member on another selected UTC.

SECTION D APPLICATION AND SUBMISSION INFORMATION

D.1 Address to Request Application Package

Applicants may view this Notice of Funding Opportunity and other supporting materials on www.grants.gov (the Federal electronic grant identification and application system) and the UTC Program website, <https://www.transportation.gov/content/university-transportation-centers>. For www.grants.gov, applicants should log onto that system and then search for Assistance Listing (Catalog of Federal Domestic Assistance number) 20.701 or **Opportunity No. UTCOPENCOMP2022** in order to find this Notice of Funding Opportunity. Although this Notice will be available for viewing on the UTC Program website, applications themselves must be submitted through Grants.gov.

This Notice of Funding Opportunity and previous UTC grant terms and conditions (including reporting requirements) that are similar to those that will be in effect for the upcoming grants may also be found on the UTC Program website, <https://www.transportation.gov/content/university-transportation-centers>. OST-R will post final versions of the terms and conditions for the new UTC Program grants on that website as soon as they are available.

D.2 Content and Form of Application Submission

D.2.1 Letters of Intent

This Notice of Funding Opportunity requires that each applicant submit a Letter of Intent which

OST-R requests be received by **5:00 PM EDT, FRIDAY, JULY 1, 2022** (late submission of a Letter of Intent will be accepted if received before the deadline for applications); any application not preceded by a Letter of Intent submitted in the manner described here will be rejected. The Letter of Intent must be submitted to OST-R as a PDF attachment in an e-mail, sent to UTCgrants@dot.gov.

The Letter of Intent must identify the following items:

1. the non-profit institution of higher education that will submit the application as the lead of the consortium;
2. the type of UTC for which you are applying as shown in **Section B.2 Types of Centers** above: (1) National Center; (2) Regional Center; or (3) Tier 1 Center;
 - o if you are applying as a Regional Center, please indicate the Federal region in which you are located (as shown on Table 1 previously in this document)
3. the statutory research priority area (see **Section B.2 Types of Centers** above) that will be your primary focus; and
4. contact information for a person at your institution that the US DOT may e-mail or call with questions about the Letter of Intent.

Letters of Intent are required so that the US DOT review panels, comprised of relevant subject matter experts, may be organized in advance of receipt of final applications.

After submitting a Letter of Intent, you may change the type of Center being applied for and describe the change in the final application. However, you may not change the statutory research priority area identified in the Letter of Intent as your primary focus.

If you are intending to apply for more than one UTC grant, either within a category of Centers or across categories of Centers, you must submit a separate Letter of Intent (and a separate application) for each grant. An institution applying for more than one grant may not submit preferences as to which grant it would prefer to receive; the US DOT will make the selections.

D.2.2 Applications

If you are eligible to receive an award under this Notice of Funding Opportunity, your (non-profit institution of higher education's) authorized representative must submit the application through www.grants.gov; any application submitted other than through www.grants.gov will not be considered for funding. You will want to ensure well in advance that your institution is registered with www.grants.gov, as registration is not instantaneous. Eligible entities must have or must secure a Unique Entity Identifier (UEI, formerly DUNS number) for the purposes of formal application; a university's sponsored-programs or research office typically is the entity within a university that submits applications and so should be able to assist with this. The

Unique Entity Identifier is a unique, 12-character alphanumeric value that identifies your organization. Each applicant's Unique Entity Identifier will be maintained as part of the applicant's profile. This number can be obtained through the Federal government's System for Award Management or SAM.gov system <https://sam.gov/content/home>.

You are responsible for the accuracy and validity of all the administrative, fiscal, and technical information in your application. The application must consist of:

Your UTC application must be submitted to www.grants.gov no later than **11:59 PM EDT, THURSDAY, AUGUST 25, 2022**. www.grants.gov will provide you with an acknowledgement of your submission.

Hard copies of the application (see **Section D.6 Other Submission Requirements**) must be received by OST-R no later than **5:00 PM EDT, TUESDAY, AUGUST 30, 2022** (note that this is later than the www.grants.gov deadline).

1. A cover sheet;
2. A two-page research abstract;
3. A written response to the evaluation criteria, and identification of the proposed Center Director and key staff (this portion of the application must not exceed 35 pages);
4. Required appendices (minority institution enrollment, CVs, and budget plans);
5. Standard Forms SF-424 "Application for Federal Assistance" and SF-424B "Assurances – Non-Construction Programs;" and
6. A copy of each of your consortium institutions' most recent negotiated overhead and fringe benefit rates.

▶▶▶ PLEASE ENSURE THAT YOUR APPLICATION DOES NOT CONTAIN ANY PERSONALLY IDENTIFIABLE INFORMATION ◀◀◀

(such as Social Security numbers, birth dates, home addresses, etc.)

Information submitted in the application may be subject to the Freedom of Information Act (FOIA).

D.2.2.1 Cover Sheet

The cover sheet of the application must include the following information:

1. The name of the proposed UTC, and names and locations (city, State, and zip code) of the lead/grantee institution and the other members of the Center's consortium. In order for OST-R to comply with Federal agency reporting requirements, state whether any of the participating non-profit institutions of higher education is a Minority Institution as that term is defined in **Section D.2.2.4.1 Enrollment Information for Any Minority Institution(s)**.
2. The type of UTC for which you are applying for grant funding: (1) National Center; (2)

Regional Center; or (3) Tier 1 Center. You may choose to be considered for more than one type of Center, but a separate and unique application must be submitted for each grant for which your institution is applying.

- If you are applying as a Regional Center, please indicate the Federal region in which you are located (as shown on Table 1 previously in this document).
3. The statutory research priority area (49 U.S.C. § 6503(c)(1) as amended by IIJA sec. 25014) that is your primary focus:
- A. Improving Mobility of People and Goods;
 - B. Reducing Congestion;
 - C. Promoting Safety;
 - D. Improving the Durability and Extending the Life of Transportation Infrastructure;
 - E. Preserving the Environment;
 - F. Preserving the Existing Transportation System; or
 - G. Reducing Transportation Cybersecurity Risks.

While your planned activities may span more than one priority area, you must select one priority area as your key focus.

4. The *DOT Strategic Plan* strategic goals (<https://www.transportation.gov/dot-strategic-plan>) that your proposed UTC supports:
- 1. Safety;
 - 2. Economic Strength and Global Competitiveness;
 - 3. Equity;
 - 4. Climate and Sustainability;
 - 5. Transformation; and
 - 6. Organizational Excellence.

Select a primary strategic goal and at least one secondary strategic goal.

Prepare the cover sheet as an 8.5x11 standard-size page using Arial 12 font with one-inch margins. Color may be used if desired. The cover sheet does not count toward the 35-page limit that applies to the Written Response section described below.

D.2.2.2 Research Abstract

The research abstract must not be more than two pages in length. It should contain high-level descriptions of the following:

- The research topics on which the proposed UTC intends to focus;

- The motivations for pursuing the research;
- How the topics align with your chosen statutory research priority area and, if applicable, the non-exclusive candidate topic areas that fall within the selected priority area;
- How the topics align with your identified DOT Strategic Goals; and
- The transformational impacts that the proposed research is expected to have on the transportation system and its users.

Prepare the research abstract as no more than two 8.5x11 standard-size pages using Arial 12 font with one-inch margins. The research abstract does not count toward the Written Response's 35-page limit.

D.2.2.3 Written Response

Page Limits and Formatting:

This section of your application must not exceed a total length of thirty-five (35) 8.5x11 standard-size pages, single-spaced, Arial 12 font*, with one-inch margins. Any application that exceeds the page limit or that uses other than the specified spacing, font, or margins will be rejected. Color may be used if desired.

A table of contents is not required; if you choose to include one, it will count toward the 35-page limit.

The cover sheet, abstract, and required appendices do not count toward the 35-page limit.

There are specific page limits for the required appendices, which are stated in **Section D.2.2.4 Required Appendices** below.

*Arial 12 should be used throughout the document, except for headers/footers and tables/figures within which the font size may be no smaller than 9. Arial Black is acceptable, but Arial Narrow is not. Any size/type of font may be used in the appendices.

NOTE: *Do not include any hyperlinks to external websites that provide supplemental content to the information contained in the application, as reviewers will be instructed not to view them.*

This **Written Response** section must address the following:

1. Response to Evaluation Criteria
2. Center Director and Key Personnel.

D.2.2.3.1 Response to Evaluation Criteria

The UTC Program's authorizing legislation (49 U.S.C. § 5505(b)(4)) specifies general selection criteria to be used in this competition. These statutory criteria are included in this Notice of Funding Opportunity as **Criteria One through Five**, described below. In addition, the US DOT currently requires all Notices of Funding Opportunity to reflect in selection criteria the Presidential Executive Orders cited in **Section A.4 Relationship to Other US DOT Efforts** above; responsiveness to these Executive Orders will be assessed through the applicant's responses to **Criteria One and Three**, described below. **SECTION E APPLICATION REVIEW INFORMATION** describes how these selection criteria will be used in the selection process. The selecting official will also be looking for applications that support the US DOT *FY 2022-2026 Strategic Plan*, which will be assessed through the applicant's responses to **Criteria One through Four**.

The application submitted in response to this Notice of Funding Opportunity will serve as the Strategic Plan for any Center that is selected to receive funding. All the items listed below must be addressed clearly and completely.

If you are applying for a Regional UTC, you must discuss throughout your application how your Center will address regional issues. The discussion must include the following:

- How your Regional Center will serve as a focal point within your region to help coordinate your UTC's transportation research, education, workforce development, and technology transfer programs with regional partners and initiatives.
- How your Regional Center will work with other UTC grant recipients that are located in the region to maximize the effectiveness of those UTCs' collective services and programs.
- Your institution's relevant experience, if any, in leading regional efforts.
- Your ideas for how the Center can use regional efforts to further UTC program objectives.

If you are applying for a National or Tier 1 UTC, there is no expectation of addressing issues on a regional basis. However, you are free to do so if that is in keeping with your vision for your proposed center.

All applicants must respond to the following evaluation criteria, in the order specified below. Insufficient information to allow reviewers to assess any criterion will negatively impact the application's rating.

D.2.2.3.1.A Criterion One: Research Activities and Capability

In this section, describe the key breakthrough, advanced, and transformative research activities that you will undertake, and demonstrate your capability and experience to carry out these activities and achieve the objectives of the UTC Program and the vision of a system of systems, which is defined in the forthcoming US DOT *Research, Development and Technology Strategic*

Plan for Fiscal Years 2022-2026; information about that plan's development is available at <https://www.transportation.gov/utc/current-competition>. You must provide sufficient detail in this Written Response to enable the reviewers to understand what you intend to accomplish with your Center; to see how you plan to select, brief OST-R staff about, and carry out the research projects financed with your grant; and to evaluate the feasibility of your proposed approach as well as your capability to achieve the proposed outcomes within the grant's designated time frame.

The 35-page limit for the Written Response means that you likely will not want to include fully detailed, methodological descriptions of your proposed research projects in the application. OST-R encourages applicants to include relatively high-level overviews of research projects that include enough detail to make clear a project's significance to US DOT's transformative vision for transportation, noting in particular the research project's intended outcomes and desired impacts.

i. Proposed Research Activities

49 U.S.C. § 6503(c)(1), as amended by IIJA sec. 25014, specifies seven research priorities that UTCs selected through this competition must address: Mobility of People and Goods; Reducing Congestion; Promoting Safety; Improving the Durability and Extending the Life of Transportation Infrastructure; Preserving the Environment; Preserving the Existing Transportation System; and Reducing Transportation Cybersecurity Risks.

The IIJA charges the Secretary of Transportation with establishing non-exclusive candidate topic areas within these research priorities. OST-R worked with the US DOT operating administrations to develop the candidate topic areas listed below. Per 49 U.S.C. § 6503(c)(2), research activities may include fundamental research pertaining to the applied physical and natural sciences; applied science and research; technology development research; and social science research.

Although applicants are encouraged to consider these topic areas, the **US DOT is looking for, and encouraging applicants to propose, new breakthrough ideas, innovations, and transformative research topics that will make significant contributions toward transforming the transportation system into a seamless, connected, and adaptable system of systems that serves the American people and economy through the safe, efficient, sustainable, and equitable movement of people and goods.**

US DOT has identified key challenges and candidate technologies and tools, listed below, for potential research considerations for each of the seven statutory research priorities. Some of these are discussed in the forthcoming US DOT *Research, Development and Technology Strategic Plan for Fiscal Years 2022-2026* noted above. Challenges are presented by each research priority area, along with candidate technologies and tools for use among the seven priority areas:

Challenges:

1. Improving Mobility of People and Goods:

- Freight – logistics, planning, data, workforce, and execution
- Transportation Equity – assessment, investment, enhancement, and coordination
- Multimodal System Planning – seamless system design, planning and execution
- Mobility Innovation – innovative personal mobility services and technologies
- Network Accessibility – mapping and mobility services
- Automated and Connected Vehicles – simulation, testing, systems design
- Positioning, Navigation and Timing and other communication technologies – systems integration, testing and reliability
- Rural Transportation Infrastructure – safety, efficiency, reliability and resiliency

2. Reducing Congestion:

- Demand Management – incentive-based roadway pricing, land use, curb management, mode shift, transportation network gap analysis
- Delivery – first/last mile delivery data, infrastructure, technology, and operations
- Operations – transportation system management and operations

3. Promoting Safety:

- Vulnerable Users – design, data, interventions, usability
- Infrastructure – condition assessment and monitoring, planning and design
- Safety Culture and Behavior – unsafe/distracted driving identification and mitigation, efficacy of traffic-safety enforcement
- Human-Machine Interactions – human factors of transportation technology and design
- Hazardous Material Safety – safety of hazardous materials transportation, impact on communities
- Vehicle and Workforce Safety – safety of drivers, passengers, road users, transportation workers and first responders
- Automated and Connected Vehicles – simulation, testing, systems design
- Positioning, Navigation and Timing and other communication technologies – systems integration, testing and reliability
- Rural Transportation Safety – planning, design, and data

4. Improving the Durability and Extending the Life of Transportation Infrastructure:

- Durability – inspection, maintenance, preservation, sustainability, longevity, and health monitoring
- Construction – materials and structures, construction methods and management
- Finance – innovative revenue and finance

5. Preserving the Environment:

- Noise and Air Quality – measurement and mitigation

- Electrification – transportation operations, infrastructure facilities and other support systems
- Alternative Fuels – energy innovation in high-emissions sectors
- Environmental Analysis and Mitigation – measuring, modeling, and mitigating pollution and preserving ecosystems
- Environmental Justice – assessment and mitigation of harmful environmental effects on vulnerable communities
- Mode Shift – systems design and user experience to reduce environmental impact of transportation
- Resiliency and Climate Adaptation

6. Preserving the Existing Transportation System:

- Asset Management – techniques and cost-effective inspection, preservation, and maintenance practices, vulnerability assessment and risk modeling
- Resilience – resilient, adaptive, and dynamic systems

7. Reducing Transportation Cybersecurity Risks:

- Supply Chain – coordination, testing, mitigation
- Positioning, Navigation and Timing and other communication technologies – systems integration, testing and reliability
- Testing – tools, distributed environments and systems
- Automated and Connected Vehicles – simulation, testing, systems design
- Internet of Things – security and monitoring

Candidate Technologies/Tools for Consideration:

- Knowledge Networks/Knowledge Graphs
- Vehicle-to-Infrastructure, Vehicle-to-Pedestrian, Vehicle-to-Everything
- Cooperative Driving Automation
- Positioning, Navigation and Timing
- Simulation
- Secure Data Sharing Techniques
- Spectrum Utilization
- Advanced Engineering Materials
- Autonomous Systems
- Robotics
- Blockchain Technologies
- Artificial Intelligence and Machine Learning
- Networked Sensors and Sensing
- Quantum Information Technologies
- Electrification
- Communications and Networks Technologies
- Financial Technologies

- Human Machines Interface Technologies
 - Modeling
 - Differential Privacy
 - Computer Vision
 - Renewable Energy Generation, Storage and Distribution
 - Energy Storage and Charging
 - Additive Manufacturing
 - Community Engagement
-
- Describe your Center’s proposed research topic(s) and corresponding relationship to the one of the seven statutory research priority areas (Improving Mobility of People and Goods; Reducing Congestion; Promoting Safety; Improving the Durability and Extending the Life of Transportation Infrastructure; Preserving the Environment; Preserving the Existing Transportation System; or Reducing Transportation Cybersecurity Risks) that you previously identified as your primary focus area. You are encouraged to select from the list of non-exclusive research topic area(s) or introduce your innovative approach to provide more depth to your research focus.

The US DOT welcomes focused Centers that will make dramatic impacts on one or a few closely related topics and is not necessarily looking for Centers trying to demonstrate the ability to span a large number of research topics.

- Discuss how your Center’s proposed research topic(s) advance the *US DOT Strategic Plan* Goals (<https://www.transportation.gov/dot-strategic-plan>) that you identified above (**D.2.2.1 Cover Sheet**) as being supported by your application.
- Within those Strategic Goals, note which of the Key Performance Indicators listed in the *US DOT Strategic Plan* for those goals you expect your UTC to advance.
- Describe how the involvement of any Minority Institution(s) in your UTC’s consortium will contribute particular assets to the research activities of your UTC and/or assist in further developing the conduct of research at the Minority Institution(s).
- Discuss the degree to which your proposed research activities are multimodal (either across modes or involving modes other than highway) and multidisciplinary in scope, and how such an emphasis impacts the quality of the research.
- Describe your commitment to, and your proposed implementation of, peer review principles and other research “best practices” in the selection and management of your research projects.
- Provide three to five relevant performance metrics that you will use to assess your performance in meeting research goals.
 - In addition, state how you will obtain and maintain the information included in those metrics.

ii. Capability and Experience

- Describe the research resources already available to conduct breakthrough, advanced, and transformative research, including those at consortium universities. Among others, these resources may include the following, if relevant to the transportation research to be conducted:
 - Dedicated laboratory space;
 - Specialized computer or other technical equipment; and
 - University support personnel with particular knowledge of transportation research needs such as a librarian, IT/data specialist, or machinist.
- Describe any research resources you anticipate obtaining in order to perform your proposed research activities.
- Provide details on whether your proposed research activities are a continuation of existing research projects and programs within your university and among members of the consortium, or are intended to provide opportunities to create and establish new research projects and programs.
- Describe your ability to address the specific topic areas you described above as proposed research activities. Please include:
 - Examples of significant impacts of past research on the transportation enterprise, including a description of products or patents, or a change in practice, or instances of research results informing policy decisions.
 - Examples of research included in peer-reviewed journals, publications, and conferences.
 - Qualifications of faculty expected to be involved in your proposed research activities.

D.2.2.3.1.B Criterion Two: Leadership

In this section, you must describe your plans for providing and creating leadership to solve immediate and long-range national and/or regional transportation problems and advancing transportation expertise and breakthrough technology. You should provide examples of:

- Your high standing within the national and international arenas of transportation research as evidenced by activities such as publications, committee work, participation in professional transportation organizations and conferences (e.g., presentations, steering committees, session chairs, etc.), awards, and other indicators of leadership excellence.
- Your experience in contributing to the solution of regional and/or national transportation problems.
- Demonstrated leadership in the development and delivery of programs. This includes innovative transportation education, workforce development, technology transfer, and research activities.
- Your plans for the development of future leaders (young faculty and graduate students) including those at any Minority Institution(s) in your UTC's consortium.
- Your expectation for your UTC's contribution in the area of leadership toward the *US DOT Strategic Plan Goals* (<https://www.transportation.gov/dot-strategic-plan>) and their Key Performance Indicators.

- Three to five relevant performance metrics that you will use to measure your Center's leadership, and how you will obtain and maintain the information to track these outcomes.

D.2.2.3.1.C Criterion Three: Education and Workforce Development

Education and workforce development efforts should result in the development of a transportation workforce that is prepared to plan, design, deploy, operate, and maintain the complex transportation systems of the future. As part of these efforts, applications must demonstrate a Center's commitment to broadening participation and attracting new entrants to the transportation field in order to enhance diversity and inclusion. Diversity for this Notice of Funding Opportunity is considered to be the inclusion of the many communities, identities, races, ethnicities, backgrounds, abilities, cultures, and beliefs of the American people, including underserved communities, and any other attributes your Center identifies as needing to be addressed.

In describing your Center's planned education and workforce development activities, you must provide the following information:

- Describe any accredited degree-granting programs with transportation components and/or specializations that will be part of this grant, and provide the number of degrees conferred annually during the past five years (associate, undergraduate, masters, and Ph.D.) across all proposed consortium members, as well as the number of full-time faculty and graduate assistantships in each consortium program. Describe how the grant will be used to support, increase and improve these academic programs. Discuss what you propose to do to facilitate the connections between your students and transportation industry employers.
- Describe any transportation non-degree programs, including credit awarded for on-the-job training, that will be supported by the grant. Include in your description a narrative on how the grant will support, increase, or improve non-degree transportation education programs.
- Describe how the involvement of any Minority Institution(s) in your UTC's consortium will contribute particular assets to the education/workforce activities of your UTC and/or assist in furthering the conduct of education and workforce development at the Minority Institution(s).
- Describe development and deployment of any new certification program(s) to support implementation of new and emerging technologies in communications, infrastructure development, operations, and maintenance.
- If your application supports the **Promoting Safety** research priority area, the US DOT has identified a need for a transportation automation workforce certification/credentialing program. If creating such a certification program is an activity you propose to conduct through your UTC, then describe how you will go about designing, gaining the necessary approval for, and implementing the program.

- If your application supports the **Reducing Transportation Cybersecurity Risks** research priority area, the US DOT has identified a need for the following:
 - Creation of Offensive Security Certified Professional Certification Program or Registered Apprenticeship for Transportation Professionals:
 - Establish training curriculum for transportation cyber professionals with skills in cyber ethical hacking;
 - Program emphasis on cybersecurity for connected and automated transportation systems and architectures;
 - Program with tiered levels of certification and credentialing applicable to trade schools, community college, undergraduate and graduate level courses or part of a registered apprenticeship program;
 - Development of online Learning Management System delivery for cyber training, certification, and credentialing.

If creating such a certification program is an activity you propose to conduct through your UTC, then describe how you will go about designing, gaining the necessary approval for, and implementing the program.

- Discuss how you will work to identify and then address equity and barriers to opportunity within the proposed programs of your consortium members.
- Describe the number and types of educational seminars, workshops and/or training courses you will offer with support from the grant and the target audience(s) for those seminars, workshops and/or training courses. Include in your description a narrative on how the grant will support, increase or improve these offerings.
- Describe the outreach and educational activities you propose to undertake with support from the grant to attract new entrants into the transportation field. Discuss any specific plans to reach out to primary and secondary school students and connect your activities with the career technical education system in your State or geographic proximity. Discuss any plans to connect with registered apprenticeship programs in order to offer students more educational and career pathways. Discuss any activities to foster and sustain the interest of primary and/or secondary students in transportation careers beyond the initial exposure. Include in your narrative the target groups by age, grade, ethnicity/race, and/or gender characteristics. Provide details on the annual numbers of students to be involved in the proposed programs, what will be done to promote outreach and educational efforts, and how successes will be documented and shared.
- Describe planned outreach or workforce development activities designed to:
 - increase interest in STEM (science, technology, engineering, and mathematics) disciplines and/or raise awareness of transportation careers among diverse and underrepresented groups;
 - recruit/retain diverse faculty;
 - raise public awareness of transportation's impacts on a diverse population.
- Describe additional education and workforce development programs and activities that are not listed above. Be sure to include in the narrative a description of program purpose, target audience(s), and numbers of events and participants.
- Describe how your UTC's education and workforce development activities will address

the Challenges listed in **Section D.2.2.3.1.A Criterion One: Research Activities and Capability.**

- Describe how your UTC will contribute in the areas of education and workforce development toward the *US DOT Strategic Plan Goals* (<https://www.transportation.gov/dot-strategic-plan>) and their Key Performance Indicators.
- Provide three to five relevant performance metrics that you will use to measure the effectiveness of degree granting programs, other educational efforts, outreach, workforce development, and other educational and workforce activities, and describe how you will obtain and maintain the information to populate these metrics.

D.2.2.3.1.D Criterion Four: Technology Transfer and Collaboration

UTC programs must include an ongoing program of technology transfer to make research results available to potential users in a form that can be implemented, utilized, commercialized or otherwise applied, and Centers are expected to form substantive and effective collaborative relationships with other academic and/or research institutions, commercial or non-profit entities, and State/local/Tribal governments in order to achieve their objectives.

As noted in **Section D.2.2.4.3 Center Budget Plan**, through this Notice of Funding Opportunity US DOT is requiring that UTCs devote a certain level of funding toward technology transfer and commercialization, with each UTC required to spend at least 5% of its total (Federal and non-Federal) budget on such activities. The costs of the activities you describe and mechanisms you discuss in this section would count toward that requirement.

In this section, you must describe the technology transfer and collaboration activities you will undertake to ensure the successful transfer of information and technology results to those who can use them, especially current transportation practitioners, with the ultimate goal of putting your research widely into effective practice. You must also provide examples of your prior experience in outreach, dissemination, technology transfer, deployment, and commercialization related to transportation research and education.

- Describe your planned activities and prior experience in technology transfer activities, such as:
 - What activities you propose to build the technology transfer capacity of your consortium, faculty, staff, and students.
 - For your consortium, describe how the participating universities will draw upon diverse types and/or sizes of institutions, including Minority Institutions; how the members will work together within the proposed consortium, including roles and responsibilities of lead and other organizations; what each university brings to the proposed consortium to support transformation technology transfer and commercialization; and how the presence of multiple parties and funding sources will enhance your ability to reach your goals.

- The composition, or proposed composition, of any existing or planned advisory committee for the Center.
- Partnerships across sectors, with private enterprise, philanthropic entities, non-profit entities, the US DOT, state, Tribal, and local governments (such as State DOTs, Metropolitan Planning Organizations, other public-sector organizations), related state or local agencies (such as state environment agency, local workforce board), and technical/practitioner organizations (such as the American Association of State Highway and Transportation Officials, the American Public Transportation Association, the American Road and Transportation Builders Association, the Institute of Transportation Engineers, the Conference of Minority Transportation Officials, and the Transportation Research Board among others) to move transformative research and technology results into practice;
- Technical assistance to stakeholders in implementing and deploying research results;
- Use of technology transfer mechanisms, such as licensing, patents, field testing and demonstration, commercialization (provide examples), standardization, improvements in practitioner guides, cooperative research and/or user agreements, domestic manufacturing of Federally funded inventions, or the creation of new business entities;
- Use of peer-reviewed journals or academic publications to showcase research results;
- Information exchanges, including new or social media campaigns and activities; and
- Academic and continuing education programs targeted toward transportation professionals, such as Statewide or region-wide continuing education courses and/or distance learning, seminars, webinars, and workshops related to transportation.
- Discuss how projects and programs may benefit people in rural and Tribal communities, including specific opportunities to improve mobility and foster a local economy.
- Describe how your UTC will contribute in the areas of transformational research and collaboration toward meeting the *US DOT Strategic Plan* Goals (<https://www.transportation.gov/dot-strategic-plan>) and their Key Performance Indicators.
- Provide three to five relevant performance metrics that you will use to measure the effectiveness of outreach efforts, as well as the progress in widely implementing research results. Include information on how you will obtain and maintain the information to track these outcomes.

D.2.2.3.1.E Criterion Five: Program Efficacy

In this section, you must describe your program management approach and procedures, and how you will implement planned activities and produce results in an effective and cost-efficient manner. This must include the following:

- A description of the availability of institutional resources to carry out planned activities, including the institutional resources available from all members of your consortium. Institutional resources encompass such things as research and training facilities, human resources, physical facilities, and institutional support capabilities. Discuss the collective

resources of your consortium that will be available to your Center.

NOTE: If there is any pre-existing center of transportation studies or research at the institutions that make up your Center's consortium, describe how the UTC's activities and accomplishments will relate to, and be distinguishable from, those of the existing center(s).

- A discussion of past experience by any of the institutions in your consortium in leading a UTC Program grant, or if none then similar experience on another grant under which the institution conducted activities as a center or institute rather than for a single research project. Please address such managerial issues as:
 - Whether the institution leading the grant conducted grant activities on time and on budget;
 - Whether the institution leading the grant complied with reporting requirements;
 - Whether there were any negative audit findings at the institution related to the grant;
 - Whether the grant met any requirement to provide matching funds.
- Plans for overall management and oversight of fiscal and technical activities, including methods for ensuring cost efficiency, demonstrating the ability to implement the program in a cost-efficient manner.
- Procedures for tracking and coordinating research efforts.

D.2.2.3.2 Center Director and Key Personnel

In this section, name the individual who will lead the UTC as Center Director, and the key staff members who will support the Center Director in accomplishing the grant's goals. For purposes of management and oversight, OST-R requires that a single Center Director be identified who is affiliated with the grantee institution, and not with any of the sub-grant consortium-member institutions.

The Center Director is the person responsible for ensuring compliance with all UTC Program requirements. This role is particularly important in multiparty consortia involving distant partners. The Center Director is expected to represent the Center and/or the UTC Program at external meetings and is required to participate in up to two annual meetings with the directors of all UTCs convened by the US DOT, and to conduct up to two annual briefings for OST-R staff about that Center's research. No minimum percentage of the Center Director's time is required on the grant, but meaningful direct personal involvement by the Center Director in the UTC is expected.

- Describe how your Center Director plans to effectively direct and oversee the Center's funds, personnel, and programs.
- State the titles and describe the duties and responsibilities of any other key personnel that are considered to be critical for Center activities.

- Briefly discuss the qualifications of the Center Director and key personnel. (**NOTE:** The curriculum vitae (CV) for the Center Director and key personnel are to be included in the appendices. See further instructions in **Section D.2.2.4** below.)

D.2.2.4 Required Appendices

The following appendices are required:

1. Enrollment Information for any Minority Institution(s)
2. Curriculum Vitae for Center Director and Key Personnel
3. Center Budget Plan

The required appendices do not count toward the 35-page limit.

NOTE: OST -R asks that applicants only include the three Required Appendices described above. Reviewers will be instructed neither to read nor to reflect in evaluations any additional appendices that an applicant may include in an application.

D.2.2.4.1 Enrollment Information for Any Minority Institution(s)

Minority institutions are encouraged to apply for UTC grants. 49 U.S.C. § 5505(c)(4)(C) states: “In awarding grants under this section, consideration shall be given to minority institutions, as defined by section 365 of the Higher Education Act of 1965 (20 U.S.C. § 1067k), or consortia that include such institutions that have demonstrated an ability in transportation-related research.” Section 365 of the Higher Education Act of 1965 (20 U.S.C. § 1067k) defines a minority institution as an institution of higher education whose enrollment of a single minority or a combination of minorities exceeds 50 percent of the total enrollment – **this is the sole definition that must be used to identify an institution as a minority institution under this Notice of Funding Opportunity.** 49 U.S.C. § 5505(c)(4)(C) directs the US DOT to give consideration to minority institutions; it does not require a UTC to include a minority institution in the consortium.

20 U.S.C. § 1067k defines the term “minority” to mean: “*American Indian, Alaskan Native, Black (not of Hispanic origin), Hispanic (including persons of Mexican, Puerto Rican, Cuban, and Central or South American origin), Pacific Islander or other ethnic group underrepresented in science and engineering.*”

If your proposed UTC consortium includes any minority institution(s) according to the 20 U.S.C. § 1067k definition of a minority institution that the UTC Program’s authorizing statute requires be used for this competition, then for each such institution please provide enrollment numbers, from the most recent semester/term where numbers are available, that show the institution meets the definition stated here.

NOTE: Any format is acceptable for the information in this appendix.

Applications submitted by or including a minority institution will be identified as such to the reviewers, to the recommendation team, and to the selecting official (the Secretary of Transportation) as part of the review and selection process described in **SECTION E APPLICATION REVIEW INFORMATION** below. The presence of a minority institution meaningfully involved in a proposed UTC will be reflected in the reviewers' ratings and will be considered by the recommendation team and the selecting official along with other aspects of the desired balanced portfolio for selected UTCs described in **SECTION E APPLICATION REVIEW INFORMATION** below.

D.2.2.4.2 Curricula Vitae for Center Director and Key Personnel

Each Curriculum Vitae should be prepared to focus on the most relevant qualifications and is limited to two pages per individual. Include CVs only for those individuals noted previously in response to **Section D.2.2.3.2** of this Notice of Funding Opportunity as being key members of the UTC's personnel. Do not include Personally Identifiable Information (PII) such as Social Security numbers, birth dates, or home addresses.

Please include on the curriculum vitae of the proposed Center Director an e-mail address and telephone number suitable for OST-R's official use in communications related to your application.

D.2.2.4.3 Center Budget Plan

Provide a completed overall Center Budget Plan (see **Attachment A** to this Notice of Funding Opportunity) for the first year of the grant, including required matching funds, for your UTC. As of the release date of this Notice of Funding Opportunity, OST-R anticipates awarding the full Fiscal Year 2022 award amounts shown in **Section B FEDERAL AWARD INFORMATION**, so your budget should reflect the full, authorized FY2022 amount for the type of UTC for which you are applying (\$4.0M for National, \$3.0M for Regional, and \$2.0M for Tier 1) and should cover the initial year of the grant (11/15/2022 to 11/14/2023). If there is any reduction in funding, grantees who are selected to receive grants through this Notice of Funding Opportunity will be asked to submit a revised budget reflecting that amount.

In addition to the overall Center Budget Plan, provide individual budget plans for each consortium member and the lead institution. Amounts shown for each budget category in these individual budget plans must roll up to the amount shown for that budget category on the overall Center Budget Plan.

You may provide the budget plan in any format you choose, but it must use only the budget categories specified in **Attachment A** to this Notice of Funding Opportunity. As noted in **Section D.2.2.3.1.D Criterion Four: Technology Transfer and Collaboration** above, under the UTC grants to be awarded through this Notice of Funding Opportunity, each UTC is required to spend at least 5% of its total (Federal and non-Federal) budget for technology transfer and commercialization activities such as those you described in your application. For purposes of

tracking compliance with this requirement, you should include all technology transfer and commercialization costs in that category on your Budget Plans, even if some costs (such as, for example, associated supplies or travel) could have been presented in another category.

UTCs selected to receive grants under this Notice of Funding Opportunity may (subject to availability of funds, the UTC Program's continued statutory authority, and the grantee's compliance with grant terms and conditions) receive four additional increments of funding toward the grant. This additional funding is expected to be awarded annually in approximately August, and OST-R will request a new budget from the UTC for review and approval in advance of making that additional award. As with the first funding increment, grantees will have through November 30, 2028 to expend the additional funds.

D.2.2.5 Standard Forms SF-424 and SF-424B

Prepare and submit Standard Forms SF-424 and SF-424B.

D.2.2.6 Confirmation of Negotiated Overhead and Fringe Benefit Rates

As a separate document from the Written Response, provide a legible copy of your institution's most recent negotiated overhead rates and fringe benefits rates, including the name and telephone number of the Federal audit agency representative. Obtain and provide the same evidence from each of the intended consortium institutions.

D.3 System for Award Management (SAM)

Each applicant is required to:

- Be registered in the System for Award Management (SAM, <http://www.sam.gov>) before submitting your application; and
- Continue to maintain an active SAM registration with current information at all times during which you have an active Federal award or application or plan under consideration by a Federal awarding agency.

Applicants that have Federal contracts, grants, and cooperative agreement awards with a cumulative total value greater than \$10,000,000 must provide information to SAM about certain civil, criminal, and administrative proceedings that reached final disposition within the most recent five-year period, that were connected with the award or performance of a Federal award.

D.4 Submission Dates and Times

D.4.1 Letters of Intent

Letters of Intent should be submitted by **5:00 PM EDT, FRIDAY, JULY 1, 2022** (late Letters will be accepted if submitted before the deadline for applications). A Letter of Intent must be submitted to OST-R as a PDF attachment in an e-mail, sent to UTCgrants@dot.gov.

D.4.2 Applications

Your UTC application must be submitted to www.grants.gov no later than **11:59 PM EDT, THURSDAY, AUGUST 25, 2022**. www.grants.gov will provide you with an acknowledgement of your submission.

Hard copies of the application must be received by OST-R no later than **5:00 PM EDT, TUESDAY, AUGUST 30, 2022** (*note that this is later than the www.grants.gov deadline*). Please refer to **Section D.6 Other Submission Requirements** for details on hard copy submittals.

Your application will be considered complete as initially received by OST-R; if you need to make changes after submission but before the due date, you will need to withdraw and resubmit your application in whole. Any materials submitted after the due date will not be incorporated into the review process unless OST-R specifically requests such material to complete the review of your application.

D.5 Funding Restrictions

The grant funds intended for award under this Notice of Funding Opportunity do not apply to, and may not be used for, construction activities or projects.

Use of grant funds, including funds and in-kind contributions provided by the UTC consortium universities and any external partners as the grant's required matching funds, for the purchase of equipment with a unit value of \$5,000 or more, or for foreign travel, will require advance approval from OST-R after a grant has been awarded, before such expenses may be incurred.

Pre-award costs, incurred from the date the US DOT announces the identities of the selected awardees, are those incurred directly pursuant to the applicant's proposed budget and in anticipation of the Federal award where such costs are necessary for the efficient and timely performance of the scope of work. Such costs are incurred at the recipient's own risk; after award of the grant, the recipient may request in writing from OST-R approval of costs that would have been allowable, if incurred after the date of the Federal award.

Please visit the "Tools for Grantees" tab on the UTC Program website at <https://www.transportation.gov/utc/tools-grantees> to view *General Provisions of Grants for University Transportation Centers* and *Deliverables and Reporting Requirements for University Transportation Centers* in effect for the most recent round of UTC grants. These documents are similar to what requirements are expected to be for the upcoming UTC grant awards being competed now, and they include information regarding certain cost items and the post-award requirements and deliverables pertaining to the grant. OST-R will post final versions of the terms and conditions for the new grants to be selected under this Notice of Funding Opportunity as soon as they are available.

D.6 Other Submission Requirements

In addition to submitting your application electronically through www.grants.gov, you must also submit to the UTC Program office hard copies of the following documents:

- One copy of the Cover sheet, Abstract, and Written Response with all three of the required appendices;
- One copy each of Standard Forms SF-424 and SF-424B (these need not bear original signatures which typically are executed through www.grants.gov); and
- One copy of the negotiated overhead and fringe benefits rates for each member of the consortium.

OST-R asks applicants to use temporary binding that allows easily for photocopying (binder clips, rubber bands, etc.).

These hard copies must contain identical information to what you submitted through www.grants.gov. The hard copies must be received by OST-R no later than **5:00 PM EDT on TUESDAY, AUGUST 30, 2022** (note that this is later than the www.grants.gov deadline). OST-R recommends that you use a delivery or courier service that allows you to track and document delivery and receipt. An application will not be rejected if the hard copies are not received by the deadline, but failure to meet the deadline will be noted as part of the assessment of your application.

Please address your hard copy submittal as follows, using all of the information shown:

Amy Stearns
US DOT/OST-R/mail code RDT-10
Work Station E33-472
1200 New Jersey Avenue, SE
Washington, DC 20590-0001

Contact telephone number only for use in submitting hard copies: (202) 366-4957.

**▶▶▶ PLEASE ENSURE THAT YOUR APPLICATION DOES NOT CONTAIN ANY
PERSONALLY IDENTIFIABLE INFORMATION ◀◀◀**
(such as Social Security numbers, birth dates, home addresses, etc.)
Information submitted in the application may be subject to the
Freedom of Information Act (FOIA).

SECTION E APPLICATION REVIEW INFORMATION

E.1 Criteria

This Notice of Funding Opportunity structures the application so that applicants directly address each of the selection criteria individually. **SECTION D APPLICATION AND SUBMISSION INFORMATION** above states the criteria and provides instructions for responding to them.

The Secretary of Transportation will select five applicants to receive National UTC grants, ten applicants to receive regional UTC grants, and twenty applicants to receive Tier 1 UTC grants. The selections made by the Secretary are final.

The US DOT seeks to select a balanced portfolio across all selected Centers that as a group support the seven statutory research priority areas, include different types and/or sizes of universities including whether the lead or any consortium member is a minority institution (see **Section D.2.2.3.1.C** above), provide geographic diversity, and are collectively multimodal in focus.

- **For National Centers:** The US DOT intends to fund five National Centers. The awards may be made in any combination of the seven statutory research priority areas stated in **Section B.2 Types of Centers** above. The Secretary reserves the right to make multiple awards in some research priority areas and to refrain from making an award in one or more of the other areas, subject to the relative merits of the applications submitted for funding.
- **For Regional Centers:** The US DOT intends to fund ten Regional Centers – one within each region. However, if no meritorious applications are received for one or more regions, a new competition will be held for those regions in order to ensure the selection of a qualified Center.
- **For Tier 1 Centers:** The US DOT intends to fund twenty Tier 1 Centers, made in any combination of the seven statutory research priority areas subject to the relative merits of the applications submitted for funding.

E.2 Review and Selection Process

E.2.1 Compliance Review

After the closing date, OST-R staff will conduct an initial review of applications to identify any that are incomplete, non-responsive to this Notice of Funding Opportunity, or ineligible to receive a UTC grant. *Any such application will be rejected and the applicant notified.*

E.2.2 Merit Review

OST-R will utilize knowledgeable and experienced subject matter experts drawn from the U.S. transportation research community and the US DOT to evaluate all complete and responsive applications. Submitted applications will be sorted according to the statutory research priority areas. The applications will be provided to review panels consisting of the appropriate subject matter experts.

Reviewers will base their evaluations of National, Regional, and Tier 1 Centers on the criteria identified in **Section D.2.2.3.1 Response to Evaluation Criteria** of this Notice of Funding Opportunity. The review panels will rate each application as Highly Recommended, Recommended, or Not Recommended for funding. In accordance with the US DOT's best-practice guidance for grant competitions, numerical values such as differing weights for various criteria are not being used in this competition; applications will be evaluated as a whole.

Based on experience with prior UTC Program competitions, OST-R anticipates that enough applications will be rated as Highly Recommended that selections will be made from among the applications rated at that level, though situations may arise (for example, for one or more Regional UTCs where a small number of applications are typically submitted) where applications rated as Recommended may be selected. No application rated as Not Recommended will be selected.

The reviewers' ratings will be forwarded to a team comprised of the heads of the US DOT operating administrations and equivalent Secretarial offices as appropriate. This team will recommend recipients for all available UTC grants, taking into consideration the statutory restrictions on receiving grants, and striving to achieve the desired balanced portfolio across the full group of grants (see **Section E.1 Criteria** above for a description of this desired balance). The final selection of grant recipients will be made by the Secretary of Transportation.

OST-R anticipates that there will be instances where multiple applications under consideration for the same grant are rated as Highly Recommended. In such cases, the recommendation team and the selecting official will prioritize selection of applications that:

- reviewers' comments noted most favorably under **Criterion One: Research Activities and Capability** regarding climate change and sustainability; and/or
- reviewers' comments noted most favorably under **Criterion One: Research Activities and Capability** and **Criterion Three: Education and Workforce Development** regarding equity and barriers to opportunity; and/or
- propose a consortium that includes a minority institution as defined in 20 U.S.C. § 1067k (with supporting documentation included in **Section D.2.2.4 Required Appendices**) that reviewers' comments noted to be actively involved and beneficial to the fulfillment of the grant's purpose.

OST-R reserves the right to request from any or all applicants such additional information as it may deem necessary to complete its review of applications. In conformance with the transparency requirements of 49 U.S.C. § 6503(b)(5), and in order to provide feedback for applicants' use on future applications, applicants may (upon request) receive copies of materials used in the evaluation of their applications after the conclusion of this competition.

E.3 Risk Assessment

Federal awarding agencies must report information to the [Federal Awardee Performance and](#)

[Integrity Information System \(FAPIS, http://www.fapiis.gov\)](http://www.fapiis.gov) about agreements with a non-Federal entity that involved material failure to comply with the award terms and conditions, suspension or debarment proceedings, or similar integrity or prior-performance issues. A non-Federal entity may submit comments in the record in [FAPIS](#) about any information that Federal awarding agencies had reported to the system about that non-Federal entity, for consideration by the Federal awarding agency in making future Federal awards to the non-Federal entity.

Prior to making an award to a non-Federal entity, Federal agencies must determine whether that non-Federal entity is qualified to receive that particular award. In making a determination about any potential risk posed by an applicant being considered for a UTC grant, the UTC Program will review and take into consideration any information about the applicant that is in the [System for Award Management \(SAM\)](#) and the [Federal Awardee Performance and Integrity Information System \(FAPIS\)](#).

SECTION F FEDERAL AWARD ADMINISTRATION INFORMATION

F.1 Federal Award Notices

Only Federal Fiscal Year 2022 funding and authorization are available at this time for new UTC Program grants. Following an initial award of the FY2022 funds, OST-R expects to award four additional increments of funding from Federal Fiscal Years 2023 through 2026 funds at approximately one-year intervals, subject to availability of funds, the UTC Program's continued statutory authority, and the grantee's compliance with terms of the grant. All funding awarded under these UTC grants may be expended over an approximately six-year period, from the award date until November 30, 2028.

Under no circumstances may a public announcement of grant funding or awards (such as a press release) serve as an authorization to begin performance. The receipt of written documentation of a grant award bearing the signature of the Assistant Secretary of Research and Technology or delegate shall provide sole authorization to begin performance. See **Section D.5 Funding Restrictions** above regarding pre-award costs.

F.2 Administrative and National Policy Requirements

All grants to UTCs will be administered in accordance with the UTC Program's statutory language in 49 U.S.C. § 5505; Federal grant regulations in 2 CFR Part 200; and other applicable Federal laws. For more information about this, please refer to documents related to the previous round of UTC grants that will be updated for use on the upcoming grant awards resulting from this competition: *General Provisions of Grants for University Transportation Centers* and *Grant Deliverables and Reporting Requirements for University Transportation Centers*, available at <https://www.transportation.gov/utc/tools-grantees>. OST-R will post the final versions for the new grants as soon as they are available.

Following are examples of two requirements that will be addressed in grant agreements issued to institutions selected to receive grants through this Notice of Funding Opportunity.

Data Management Plans (DMPs)

In accordance with the *US DOT Plan to Increase Public Access to the Results of Federally Funded Scientific Research* (US DOT Public Access Plan), available at <https://doi.org/10.21949/1520559>, and the US DOT Departmental Data Release Policy ((DOT Order 1351.34, adopted March 28, 2011; available at <https://www.transportation.gov/digitalstrategy/policyarchive/Departmental-Data-Release-Policy>), each UTC grant recipient is required to create a **Data Management Plan (DMP)**. In the DMP, a UTC must propose program-level strategies to deposit Digital Data Sets resulting from US DOT-funded scientific research in a repository that enables and allows for public access and sharing. The DMP will be reviewed and must be approved by the Office of the Assistant Secretary for Research and Technology following the award of a grant.

Civil Rights Act Compliance

Each UTC grant recipient must document that it has a plan for compliance with civil rights obligations and nondiscrimination laws, including Title VI of the Civil Rights Act of 1964 and accompanying regulations, Title VII of the Civil Rights Act of 1964, the Americans with Disabilities Act, and Section 504 of the Rehabilitation Act.

F.3 Reporting

For grant deliverables and reporting requirements, please refer to a document related to the previous round of UTC grants that will be updated for use on the upcoming grant awards resulting from this competition: *Deliverables and Reporting Requirements for University Transportation Centers* available at <https://www.transportation.gov/utc/tools-grantees>. OST-R will post a final version for the new grants as soon as it is available. Applicants should integrate these deliverables and reports into their internal management plans and schedules.

SECTION G FEDERAL AWARDING AGENCY CONTACT

Until **4:00 PM EDT on MONDAY, AUGUST 22, 2022**, questions about this Notice of Funding Opportunity or the UTC Program in general may be directed to the following email address: UTCgrants@dot.gov. Questions posed by applicants will be posted along with OST-R's responses on the Grant Competition tab of the UTC Program website (available at <https://www.transportation.gov/utc/current-competition>), in order that all potential applicants may benefit equally from any additional information provided in the responses.

NOTE: Until a formal notice of award is issued, no communication by the government, either written or oral, shall be interpreted as a promise that an award will be made.

SECTION H OTHER INFORMATION

Under the Infrastructure Improvement and Jobs Act, the UTC Program and the grants to be awarded through this competition are authorized through Federal Fiscal Year 2026. Aside from the current competition referenced in this Notice of Funding Opportunity, no information is available at this time about the possibility of, or timeline for, any future UTC Program competitions.

ATTACHMENT A

Center Budget Plan
11/15/2022 – 11/14/2023

CATEGORY	Budgeted Amount from Federal Share	Budgeted Amount from Matching Funds	Explanatory Notes
Center Director Salary			
Faculty Salaries			
Administrative Staff Salaries			
Other Staff Salaries			
Student Salaries			
Staff Benefits			
Total Salaries and Benefits			
Student Tuition			
Technology Transfer ¹			
Permanent Equipment ²			
Expendable Property, Supplies, and Services ³			
Domestic Travel			
Foreign Travel ⁴			
Other Direct Costs (specify) ⁵			
Total Direct Costs			
F&A (Indirect) Costs			
TOTAL COSTS			

1 The UTC grant requires that each UTC spend at least 5% of its total (Federal and non-Federal) budget on technology transfer and commercialization. Please report all costs related to technology transfer and commercialization (including associated supplies, travel, etc.) on this line rather than in one of the other categories.

2 Permanent Equipment includes any item of equipment having a unit acquisition cost of \$5,000 or more. Per the grant's *General Provisions* document, written permission must be obtained from OST-R prior to the purchase of such equipment.

3 Expendable Property, Supplies, and Services include such tangible items as office and laboratory supplies and such intangible services as telecommunications.

4 Foreign Travel includes travel to or from any destination outside of the United States and its territories. Per the grant's *General Provisions* document, written permission must be obtained from OST-R prior to the initiation of such travel, or such travel may not be funded under the grant.

5 Itemize other anticipated direct costs not mentioned above.