
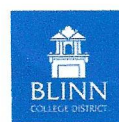


National Center for INFRASTRUCTURE TRANSFORMATION

Led by: Prairie View A&M University

- **Federal Agency and Organization Element to Which Report is Submitted** – US Department of Transportation, Office of the Assistant Secretary for Research and Technology (OST-R), University Transportation Center Program (UTC)
- **Federal Grant or Other Identifying Number Assigned by Agency** - National University Transportation Center (UTC) headquartered at Prairie View A&M University and focused on Improving the Durability and Extending the Life of Transportation Infrastructure
- **Project Title** – National Center for Infrastructure Transformation
- **Center Director Name, Title, and Contact Information (e-mail address and phone number)** – Judy A. Perkins, Ph.D., PE, Director, juperkins@pvamu.edu, 936-261-1655
- **Name of Submitting Official** – Same as Center Director
- **Submission Date** – October 30, 2023
- **DUNS Number** (138170220) and **EIN Number** (74-6001078)
- **Recipient Organization (Name and Address)** – Prairie View A&M University, 700 University Drive, Prairie View, Texas 77446
- **Recipient Identifying Number or Account Number** - No. 69A3552344813 and No. 69A3552348318
- **Project/Grant Period (Start Date, End Date)** – June 1, 2023 – May 31, 2029
- **Reporting Period End Date** – June 1, 2023 – September 30, 2023
- **Report Term or Frequency (annual, semi-annual, quarterly, other)** – Semi-Annual
- **Signature of Submitting Official** - 



1. ACCOMPLISHMENTS

a. *What are the major goals of the program?*

The National Center for Infrastructure Transformation (NCIT) led by Prairie View A&M University (PVAMU), a Historically Black College and University (HBCU) founded in 1876. The following consortium partners supports PVAMU - Arizona State University (ASU), Blinn College District (BCD). Michigan State University (MSU), Rutgers University (RU), Texas A&M Transportation Institute (TTI) and Texas A&M University (TAMU).

Transformation of American infrastructure from both a physical and policy perspective is the goal of the center. This goal supports the United States Department of Transportation's (US DOT's) research priority of improving the durability and extending the life of transportation infrastructure and achieved through leadership, research, education, and workforce development (EWD), and technology transfer and collaboration (T2C) programs/projects.

b. *What was accomplished under these goals?*

Leadership/Management Important Activities

- The NCIT Leadership met monthly from June 2023 to August 2023 and then transitioned to meeting biweekly starting in September 2023. The NCIT Leadership consist of the following:
 - Judy Perkins - Director
 - Melissa Tooley - Deputy Director/Research Coordinator
 - Claudia Zapata – ASU - Associate Director & Diversity, Equity, Inclusion, and Belonging (DEIB) Coordinator
 - Karla Flanagan – BCD - Associate Director & EWD Coordinator
 - Bora Cetin – MSU – Associate Director
 - Md Jobair Bin Alam – PVAMU- Associate Director
 - Yonggao Yang – PVAMU- Associate Director & EWD Coordinator
 - Patrick Szary – RU – Associate Director
 - Anand Puppala – TAMU – Associate Director
 - Charles Gurganus – TTI – Associate Director & EWD Coordinator
 - Lealon Martin – PVAMU- T2C Coordinator
 - Kevin Womack – TTI - T2C Coordinator
- The NCIT Executive Leadership consisting of the Director and Deputy Director met with all Associate Directors, the DEIB Coordinators, EWD Coordinators, and T2C Coordinators to discuss the approved proposal, their roles and responsibilities, and initial policies and standing operating procedures (SOPs) that will guide NCIT's business practices.
- The Director and Deputy Director met virtually and in person on a regular basis to develop NCIT's Year-1 implementation plan and calendar of events.
- The Associate Directors met periodically with the research faculty at their respective institutions to share Center information and respond to questions and/or comments.
- The Director attended the White House Advanced Research Projects Agency for Infrastructure (ARPA-I) Summit held in Washington, DC, in June 2023.
- The Director, Deputy Director, RU Associate Director, and three other NCIT staff members attended the Council of University Transportation Center (CUTC) meeting in Miami, FL in June 2023.



Research Important Activities

- The Principal Investigators (PIs) of the research projects/ programs met periodically with their Co-Principal Investigator(s) (Co-PIs) and team members to develop their proposals and submit for review by the Associate Director at their respective institutions. Once the Associate Directors complete their critique of the proposals, PVAMU receives them for review and final record keeping.
- Funding to start thirteen NCIT research projects/programs occurred between August 2023 and September 2023. Eight projects/programs involve more than one consortium partner.

Table 1 – NCIT Research Projects (13 Total)

| Project Title | Lead Institution | Collaborators |
|--|-------------------------|----------------------|
| Use of Innovative Geosynthetics to Improve the Resiliency of Highway Embankment Slopes Under Extreme Climatic Conditions | MSU | ASU, PVAMU, and TAMU |
| Asset Management of Bridges Using Uncrewed Aerial Vehicles and Machine Learning Models | MSU | MSU and TAMU |
| Impact of Climate Change on Road Maintenance Budgets and Practices | MSU | ASU |
| Adopting Construction 4.0 Concepts to Enhance Execution and O&M Phases of Transportation Infrastructure Projects | PVAMU | |
| A Smart IoT-Based Detection System for Remote Earth Movement of Highway Embankment | PVAMU | |
| Environmental Impact and Lifecycle Costs of Electricity Charging and Hydrogen Refueling Stations to Support Future Advanced Vehicles | PVAMU | RU |
| Integration of Equity and Justice in Transportation Asset Management | RU | PVAMU and TTI |
| EDC-7 Pilot Evaluation of Strategic Workforce Development for Justice-Challenged Youth | RU | PVAMU |
| Enhancing Durability of Stabilized Soils for Resilient Transportation Infrastructure Under Extreme Weather Conditions | TAMU | MSU |
| Optimizing Asphalt Mixture Performance Testing for Balanced Mix Design | TAMU | RU |
| The Impact of EV Infrastructure on Transportation Revenues | TAMU | |
| Necessary Infrastructure Accommodations for Automated Trucks and Truck Platoons | TAMU | |
| Infrastructure Funding and Policy Considerations for EVs: A Life-Cycle Based Assessment | TAMU | |

- PIs received the Kickoff Research Packet for the thirteen NCIT research projects/programs.



- Initiation of the Institutional Review Board (IRB) application required for any of the thirteen research projects/projects occurred. Once the PI receives the IRB results, PVAMAU and the Grants Manager will receive a copy.

EWD Important Activities

- The PIs of the two EWD projects/programs met periodically with their Co-PIs and team members to develop their proposals and submit them for review by the Associate Director at their respective institutions. Once the Associate Directors completed their critique of the proposals, PVAMU received a proposal for review and final record keeping.
- Funding to launch two NCIT EWD project/programs occurred between July 2023 and September 2023.

Table 2 – NCIT EWD Projects (2 Total)

| Project Title | Lead Institution | Collaborators |
|---|-------------------------|------------------------|
| Smart Transportation Technology Workshop | PVAMU | |
| Highway Construction Workforce Partnership – Creating the Next Generation Heavy Highway Worker | TTI | Blinn College District |

- PIs received the Kickoff Research Packet for the two NCIT research projects/programs.
- In July 2023, the Highway Construction Workforce Partnership (HWCP) Program started. The curriculum began with the Occupational Safety and Health Administration (OSHA) 10-Hour Construction module, life skills lectures provided by BCD, and the traffic control training provided by Texas A&M Engineering Extension Service (TEEX). The course then transitioned to a heavy-highway focus with an emphasis on job site mathematics. As this was the inaugural cohort, instructors adapted the curriculum in real-time to meet future cohort needs. Program coordinators actively engaged with the industry to promote the program and connect participants with potential employers. The program's second phase involved firsthand training, including operating paving equipment, shadowing at hot-mix asphalt production plants, and conducting lab testing, with field locations and equipment coordination finalized in July and August.
- In August 2023, teaching the HWCP cohort continued, primarily led by TTI instructors. This phase concentrated on teaching participants plan reading, specification interpretation, and project layout in the field. Curriculum modifications continued to occur based on ongoing feedback. Program Coordinators maintained their industry connections and coordinated the delivery of curriculum by Texas Asphalt Pavement Association (TXAPA) for Hot-Mix Asphalt (HMA) Level 1A, HMA Level 1B, and Soils and Aggregates training. In September 2023 and October 2023, equipment and plant shadowing activities occurred along with laboratory sessions. Depending on the number of participants advancing to the second phase of the course, the cohort would separate into groups to rotate through various firsthand activities. During the September 2023 TXAPA Annual Conference, a presentation highlighting the HWCP Program occurred.



T2C Important Activities

- The PIs of the T2C project/program met periodically with their Co-PI(s) and team members to develop their proposals and submit them for review by the Associate Director at their respective institutions. Once the Associate Directors completed their critique of the proposals, PVAMU received a proposal for review and final record keeping.
- Funding to start one NCIT T2C project/program occurred between August 2023 and September 2023 and the PI received the Kickoff Research Packet for this NCIT project/program.

Table 3 – NCIT T2C Project (1 Total)

| Project Title | Lead Institution |
|---|-------------------------|
| Identification and Elimination of Barriers to Technology Transfer at HBCUs and MSIs | PVAMU |

- Initiation of the IRB application required for this T2C project/project occurred. Once the PI receives the IRB results, PVAMAU and the Grants Manager will receive a copy.
- The two NCIT T2C Coordinators started planning for the T2C/Intellectual Property (IP) Webinar that all PIs, Co-PIs, graduate, and undergraduate students must complete during Year-1 of the grant.

Administrative/Management Important Activities

- PVAMU received the umbrella agreement from US DOT in June 2023. The creation of the sub-award agreements for all six consortium partners occurred and sent to the institution’s Office of Sponsored Programs (OSP) or equivalent. Only one (ASU) sub-agreement did not become fully executed by September 30, 2023. The delay was due to budget adjustments and the replacement of their T2C project proposal. See Section 6 of this document for more information.
- The Director and PVAMU OSP representative met on a regular basis with our University Transportation Center (UTC) Grants Manager to ensure NCIT would successfully meet the UTC reporting requirements.
- PVAMU’s leadership approved the location of NCIT’s office space. NCIT’s official office will be located on the third floor of the S.R. Collins Building.
- Developed and submitted PVAMU’s Human Resource Office job descriptions to hire NCIT’s primary staff personnel – Administrative Associate, Program Coordinator, and Budget Specialist.

c. *How have the results been disseminated?*
Nothing to Report.

d. *What do you plan to do during the next reporting period to accomplish the goals?*

Leadership/Management Important Activities

- The NCIT Leadership will continue to meet biweekly to ensure that the implementation of all Year-1 activities occur.
- NCIT’s Advisory Board meeting for Year-1 will occur.



- The Director, Deputy Director, and TTI Agency Director will do a site visit to the consortium partner's campus to meet with the researchers, students, and tour their facilities.
- Finalize development of NCIT's SOP.
- Prepare for Year-2 implementation of prescribed activities.

Research Important Activities

- Ensure all Year-1 research projects/programs have started.
- Ensure PVAMU and our Grants Manager receive all IRB results for specific research projects/programs.

EWD Important Activities

- Ensure all Year-1 EWD projects/programs have started.

T2C Important Activities

- Ensure all Year-1 T2C projects/programs have started.
- Ensure PVAMU and our Grants Manager receive all IRB results for specific research projects/programs.
- Ensure that all PIs, Co-PIs, graduate, and undergraduate students complete the required e T2C/IP Webinar in Year-1.
- PVAMU and TTI will finalize the NCIT website.
- Ensure the Research in Progress (RiP) Database is current regarding all active projects, thus contributing to the dissemination of valuable knowledge and research findings.

Administrative/Management Important Activities

- Finalize hiring NCIT's primary staff personnel – Administrative Associate, Program Coordinator, and Budget Specialist.
- Occupy designated NCIT office space.



2. PARTICIPANTS & COLLABORATING ORGRANIZATIONS

a. *What organizations have been involved as partners?*

As part of every NCIT project proposal, the principal investigator must identify a Project Monitor (i.e., stakeholder(s)). In doing so, they must describe how they will engage the industry stakeholder(s) and what they expect them to add to the project. Engagement of stakeholder(s) from the outset will ensure that all projects work toward improving durability and extending the life of the nation’s infrastructure, with the mindset of adoption and implementation of research findings. Below is a list of organizations that are involved with the current NCIT projects/programs.

Table 4 – MSU Led Projects

| PI’s Name | Organization Name | Organization Location | Partner’s Contribution |
|------------------|---|------------------------------|-------------------------------|
| Bora Cetin | Austin Bridge and Road | Coppell, TX | Collaborative Research |
| Bora Cetin | National Center for Pavement Preservation | East Lansing, MI | Collaborative Research |
| Bora Cetin | Rutgers University | New Brunswick, NJ | Collaborative Research |
| Bora Cetin | Tensor, a Division of CMC | Chandler, AZ | Collaborative Research |
| Surya Congress | Alaska Department of Transportation and Public Facilities | Juneau, AK | Collaborative Research |
| Surya Congress | Michigan Department of Transportation | East Lansing, MI | Collaborative Research |
| Surya Congress | Minnesota Department of Transportation | Minneapolis, MN | Collaborative Research |

Table 5 – PVAMU Led Projects

| PI’s Name | Organization Name | Organization Location | Partner’s Contribution |
|---------------------|--|------------------------------|-------------------------------|
| Md Jobair Bin Alam | Harris County Flood Control District | Houston, Texas | Collaborative Research |
| Md Jobair Bin Alam | Intertek PSI | Houston, Texas | Collaborative Research |
| Vahid Faghihi | Texas Department of Transportation | Austin, TX and Houston, TX | Collaborative Research |
| Raghava Kommalapati | Houston Metro | Houston, TX | Collaborative Research |
| Raghava Kommalapati | New Jersey Transit | Newark, NJ | Collaborative Research |
| Yonggao Yang | Tennessee State University Apple HBCU C2 Program | Nashville, TN | Collaborative Research |



Table 6 – RU Led Projects

| PI's Name | Organization Name | Organization Location | Partner's Contribution |
|---------------------------|--|------------------------------|-------------------------------|
| Vassiliki Demetracopoulou | Econsult Solutions, Inc. | Philadelphia, PA | Collaborative Research |
| Todd Pisani | African American Chamber of Commerce of New Jersey | Trenton, NJ | Collaborative Research |

Table 7 – TAMU Led Projects

| PI's Name | Organization Name | Organization Location | Partner's Contribution |
|------------------|---|------------------------------|-------------------------------|
| Dallas Little | National Center for Pavement Preservation | East Lansing, MI | Collaborative Research |
| Dallas Little | Rutgers University | New Brunswick, NJ | Collaborative Research |
| Amy Epps Martin | New Jersey Department of Transportation | Ewing, NJ | Collaborative Research |
| Amy Epps Martin | Virginia Transportation Research Council | Charlottesville, VA | Collaborative Research |

Table 8 – TTI Led Projects

| PI's Last Name | Organization Name | Organization Location | Partner's Contribution |
|-----------------------|---------------------------------------|------------------------------|---------------------------------------|
| Charles Gurganus | 4H Construction Services, LLC | Porter, TX | In-Kind Support |
| | Big Creek Construction | Bryan, TX | In-Kind Support |
| | Big Creek Construction | Burleson County, TX | Facilities |
| | Brazos Paving Inc. – BPI (Contractor) | Bryan, TX | Facilities |
| | Brazos Paving Inc. – BPI | Bryan, TX | In-Kind Support |
| | Knife River (Contractor) | Bryan, TX | Facilities |
| | Knife River | Bryan, TX | Facilities |
| | Texas A&M Transportation Institute | College Station, TX | In-Kind Support and Financial Support |
| | Texas Asphalt Pavement Association | Bryan, TX | In-Kind Support and Financial Support |
| | Texas Asphalt Pavement Association | San Antonio, TX | In-Kind Support |
| | Texas Department of Transportation | Bryan, TX | Financial Support |

b. *Have other collaborators or contacts been involved?*

Of the sixteen NCIT projects/programs started during this reporting period, nine projects/programs involve more than one consortium partner. Information regarding these



projects is on the NCIT website and accessible via the following link (<https://ncit.pvamu.edu/projects/>).

Table 9 - NCIT Collaborative Projects

| Project Title | Lead Institution | Collaborators | Project Type (Research or EWD) |
|--|-------------------------|------------------------|---------------------------------------|
| Use of Innovative Geosynthetics to Improve the Resiliency of Highway Embankment Slopes Under Extreme Climatic Conditions | MSU | ASU, PVAMU, and TAMU | Research |
| Asset Management of Bridges Using Uncrewed Aerial Vehicles and Machine Learning Models | MSU | MSU and TAMU | Research |
| Impact of Climate Change on Road Maintenance Budgets and Practices | MSU | ASU | Research |
| Environmental Impact and Lifecycle Costs of Electricity Charging and Hydrogen Refueling Stations to Support Future Advanced Vehicles | PVAMU | RU | Research |
| Integration of Equity and Justice in Transportation Asset Management | RU | PVAMU and TTI | Research |
| EDC-7 Pilot Evaluation of Strategic Workforce Development for Justice-Challenged Youth | RU | PVAMU | Research |
| Enhancing Durability of Stabilized Soils for Resilient Transportation Infrastructure Under Extreme Weather Conditions | TAMU | MSU | Research |
| Optimizing Asphalt Mixture Performance Testing for Balanced Mix Design | TAMU | RU | Research |
| Highway Construction Workforce Partnership – Creating the Next Generation Heavy Highway Worker | TTI | Blinn College District | EWD |

Additionally, contacts with others external to NCIT occurred during this reporting period. See Table 10 below.

Table 10 - NCIT External Contacts with Proposed Contributions

| Organization Name | Organization Location | Contact’s Proposed Contribution(s) |
|--|------------------------------|---|
| Austin Transportation and Public Works Department | Austin, TX | Collaborative Research |
| Biomass Energy Systems Inc. | University Park, IL | Facilities, In-Kind Support, and Collaborative Research |
| Shrewsberry & Associates LLC | Denver, CO | Collaborative Research |
| United Airlines | Houston, TX | Collaborative Research |
| US Army Corps of Engineers - Engineering Research Development Laboratory | Vicksburg, MS | Facilities, In-Kind Support and Collaborative Research |



The Director visited the Biomass Energy Systems Inc. facility in June 2023. Participating in the site visit meeting was Ms. Renee Comly (President & Chief Executive Officer), Dr. Alex Mathew (Chief Operating Officer), and Dr. Amir Rehmat (Chief Technology Officer).

In July 2023, Dr. Alex Mathew (Chief Operating Officer), Dr. Amir Rehmat (Chief Technology Officer), and Dr. Anthony Andrews (resident Economist) visited NCIT to discuss collaborative research opportunities. In attendance was Dr. Pamela Obiomon Co-Chair of NCIT Advisory Board and Dean of the Roy G. Perry College of Engineering (RGPCOE) and faculty researchers and students from the (1) Center of Energy and Environmental Sustainability (CEES), (2) College of Agriculture, Food, and Natural Resources, (3) College of Arts and Sciences, (4) College of Business, (5) PVAMU's Algae Center of Excellence for Climate Resilient Food-Energy-Water Systems (PACE-FEWS) and (6) RGPCOE.



3. OUTPUTS

a. *Publications, conference papers, and presentations*

Nothing to Report.

- 1) *Journal publications*: Nothing to Report.
- 2) *Books or other non-periodical, one-time publications*: Nothing to Report.
- 3) *Identify for each one-time publication*: Nothing to Report.
- 4) *Other publications, conference papers and presentations*: Nothing to Report.

b. *Website(s) or other Internet site(s)*.

NCIT will be a national showplace through the Internet and social media platforms such as Facebook, Instagram, Twitter, and YouTube to transfer research results to practitioners and the research community. Currently, the NCIT website is accessible via the following link ncit.pvamu.edu. The site is still under development and will soon provide comprehensive information about NCIT and its programs/projects. Updates to the NCIT website will occur on a continual basis. Currently, there are major tabs covering the NCIT's background, organization, research, education, technology transfer, and events. To directly access NCIT's sixteen active research projects use the following link <https://ncit.pvamu.edu/projects/>.

c. *Technologies or techniques*.

Nothing to Report.

d. *Inventions, patent applications, and/or licenses*.

Nothing to Report.

e. *Other products, such as data or databases, physical collections, audio or video products, application software, analytical models, educational aids, courses or curricula, instruments, equipment, or research material*.

RU

Highlights of the Center for Advanced Infrastructure and Transportation's (CAIT's) Bridge Evaluation and Structural Testing (BEAST) Laboratory by Rutgers University as an example of "Research Excellence" resulted in the development of an educational video product by the university explaining how the lab evaluates bridge performance through accelerated testing. The video provides an overview of the BEAST and features Rutgers faculty Dr. John Braley. Dr. John Braley is the PI for the NCIT project proposal titled, "Increasing the Lifespan and Resiliency of Bridge Concrete through Durability-Based Performance Evaluation." Additionally, this video details the importance of extending the life and preserving bridge infrastructure in the United States through innovative technology and approaches and is published on the "Rutgers Excellence" website via the following link <https://www.rutgers.edu/excellence>.



BCD and TTI

The primary output of the HWCP Program for this reporting period was the training of six participants. By September 30, 2023, the participants completed classroom modules in:

- OSHA 10-Hour Construction
- Life Skills
- Job Site Math
- Reading Plans and Specifications
- HMA Technician Level 1B
- HMA Technician Level 1A
- Flagger Certification
- 16-Hour Work Zone Traffic Control

Participants also completed firsthand training to simulate hot-mix asphalt production testing. As of September 30, 2023, participants had received 2-weeks of firsthand HMA paving training with 2-weeks remaining in the program. The closing ceremony for the first cohort was on October 12, 2023.

The YouTube video that was published to describe this program as well as showcase students in the first cohort can be accessed via the following link <https://youtu.be/cfClrw0LxLk>.



4. OUTCOMES

a. *Increased understanding and awareness of transportation issues.*

Nothing to Report.

b. *Passage of new policies, regulation, rulemaking, or legislation.*

Nothing to Report.

c. *Increases in the body of knowledge.*

- Using a training class, RU leveraged an outreach technical tour for forty-five regional transit professional along with Dr. Hao Wang and RU graduate students. Dr. Hao Wang is the PI for the NCIT project proposal titled, “Environmental Impact and Life-Cycle Costs of Transportation Infrastructure to Support Advanced Vehicles.” The purpose of the outreach technical tour was to visit the Camden, New Jersey Transit Electric Bus Depot to see how electric vehicles (EVs) operate. By teaching electric bus best practices, this experience increased the body of knowledge on EV technologies, techniques, implementation, as well as engage New Jersey Transit who is one of the stakeholders associated with this project.
- The Director and Deputy Director created a presentation entitled, “The ABCs of the UTCs.” The idea behind doing this was to provide an understanding of the UTC Program and the opportunities available at NCIT consortium partner institutions. The Director delivered the presentation in person at PVAMU on September 28, 2023. Thirteen (combination of faculty and students) were in attendance. During Spring 2024, the virtual offerings of presentation will occur for faculty and students at NCIT’s partnering institutions.

d. *Improved processes, technologies, techniques, and skills in addressing transportation issues.*

Nothing to Report.

e. *Enlargement of the pool of trained transportation professionals.*

The HWCP Program first cohort began and completed 80% of the planned curriculum during this semi-annual reporting period. The six participants in the first cohort gained knowledge that enlarges the pool of trained transportation professionals. The knowledge and competencies gained by each participant are in the Output Section.

f. *Adoption of new technologies, techniques, or practices.*

Nothing to Report.



5. IMPACTS

a. *What is the impact on the effectiveness of the transportation system?*

Nothing to Report.

b. *What is the impact of technology transfer on industry and government entities, on the adoption of new practices, or on research outcomes which have led to initiating a start-up company?*

Nothing to Report.

c. *What is the impact on the body of scientific knowledge?*

Nothing to Report.

d. *What is the impact on transportation workforce development?*

The six participants in the first cohort of the HWCP Program have gained knowledge and skills to enlarge the pool of transportation professionals. As part of the first cohort, participants became aware of the highway construction industry and potential career opportunities. Because the cohort remains active at the time of this report, the participants do not have full-time employment. The number of participants that accepted full-time employment in the highway industry and remain in the industry will be available in future reports.

However, five of the six participants are in active internships with the Texas Department of Transportation (TxDOT) Bryan District. Two of the participants are working in the materials lab, while the other three are working in the County Maintenance Section. These are paid internships for approximately 20 hours each week. TxDOT worked with the certificate training program to allow the participants to attend training each morning and report for the internship in the afternoon. These internships allow participants to gain additional on-the-job experience, while also applying the knowledge and skills learned in the program.



6. CHANGES/PROBLEMS

a. Changes in approach and reasons for change.

The initial T2 project proposal titled, “Implementation of a New Silica-Based Composite in the Modification of Asphalt Mixtures: Solving Asphalt Pavement Shortcomings Related to Thermal Cracking and Permanent Deformation” is no longer part of NCIT research portfolio. An alternate peer-reviewed project proposal titled, “A Sustainable Approach for Making More Climate Resilient Asphalt Pavements” replaces the initial T2 project. The reason for this change was because the use of UTC funds cannot support the next phase of commercializing a project deliverable when the research that developed the original technology did not occur as part of the UTC program.

b. Actual or anticipated problems or delays and actions or plans to resolve them.

Nothing to Report.

c. Changes that have a significant impact on expenditures.

Nothing to Report.

d. Significant changes in use or care of human subjects, vertebrate animals, and/or biohazards

Of the sixteen project proposals, the PIs of four project proposals initiated their IRB application to their respective institutional committees. While the approval schedule varies per institution, once the final decision is available to PVAMU, our Grants Manager will receive a copy.

e. Change of primary performance site location from that originally proposed.

Nothing to Report.



7. SPECIAL REPORTING REQUIREMENTS

NCIT completed and submitted their Data Management Plan, Exhibit D Form for sixteen projects, entered required information for sixteen projects into the Transportation Research Board's RiP Database (<https://rip.trb.org/>), and established a website (ncit.pvamu.edu).

