Semi Annual Report for University Transportation Centers

U.S. Department of Transportation
Office of the Assistant Secretary for Research and Technology (OST-R)
Federal Grant No. 69A3551747104

Project Title: Southeastern Transportation, Research, Innovation, Development & Education Center (STRIDE)

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Submission Date: April 28, 2022

DUNS #:969663814
EIN #: 59-6002052

Recipient Organization: U.S. Department of Transportation
Office of the Assistant Secretary for Research and Technology (OST-R)
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Washington, DC 20590

Project Grant Period: 4/1/2021 to 9/30/2023

Reporting Period End Date: 4/30/2022

Reporting Term or Frequency: Semi Annual

Signature of Submitting Official: _____
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Contents

ACCOMPLISHMENTS

What are the major goals of the program?

- To develop novel strategies for reducing congestion in the southeast and nationally by considering new technologies in vehicles, telecommunications, shared autonomy in transportation, driver/traveler behavior and financial constraints. To do this, we focus on five research thrusts: Technology, Management, Data, Design, and Users.
- To implement the research products developed from these strategies and to make them available to the practitioner community. The STRIDE Center continues to work closely with state DOTs in the region and other stakeholders via the Center's technology transfer, education, and workforce development activities to disseminate the results of our work and facilitate implementation.

What was accomplished under these goals?

- **CUTC Awards STRIDE Center Grant to Create a Careers in Transportation Course:** Under their New Initiatives program, CUTC awarded the STRIDE Center a grant in January 2022 to create a program to increase the transportation workforce. Ondine Wells, K-12/Technology Transfer Coordinator and Ines Aviles-Spadoni, STRIDE Research Coordinator, have been working on the *Exploring Career Paths in Transportation: Engaging with the Grand Challenges of our Era* project which is a semester-long seminar class for undergraduate students that will be piloted at the University of Florida in fall 2022. It will also be made available online to universities nationwide. The proposed campaign, based on the principles of the Social Cognitive Career Theory, is designed to encourage more young adults to choose transportation for their career path. The campaign will introduce students to the transportation sector through 16 seminars focused on career paths and career skills. These seminars will be held online or in-person (and recorded). The program will have an accompanying website (https://stride.ce.ufl.edu/stride-careers/) which will be populated as the project progresses.
- ***Update on Year 1 projects:*** All 10 research projects are now completed. All of these reports, including the technology transfer reports (TRRs)s, the project brief (PBs), and the webinars, are posted to the STRIDE Center's projects webpage and shown as "Completed". All these completed projects have an associated TTR, PB, and a recorded webinar, and their data have been uploaded to the STRIDE Center's community page in the Zenodo data repository. The 10 completed projects for Year 1 are:
  - Project A - *Impact of Smartphone Applications on Trip Routing and Congestion Management*
  - Project B - *Technology Influence on Travel Demand and Behaviors*
  - Project C - *Performance Measurement and Management Using Connected and Automated Vehicle Data*
  - Project D - *Evaluation of Advanced Vehicle and Communication Technologies through Traffic Microsimulation*
  - Project E - *Predicting Congestion: The Challenge of Shifting Travel Behavior on Estimating Trip Generation, Traffic and Other System Impacts*
  - Project F - Integrated Implementation of Innovative Intersection Designs
  - Project G - *Transit in the Era of Shared Mobility*
  - *Project H - Strategies for Mitigating Congestion in Small Urban and Rural Areas*
  - Project I - *Freeway Management for Optimal Reliability*
  - *Project J – Improving Work Zone Mobility through Planning, Design, and Operations*
- ***Update on Year 2 projects:*** Ten out of 17 projects are completed. The final reports (including the TRRs, the PBs, and the webinars) have been posted to the STRIDE Center's project webpage. We have also disseminated the results of these projects via Constant Contact, and we have sent them to TRB for inclusion into their e-newsletter. All these completed projects have an associated TTR, PB, and a recorded webinar. The PIs have uploaded the data for these projects into the Zenodo repository. The 10 completed projects for Year 2 are:

- Project A2 - Changing Access to Public Transportation & the Potential for Increased Travel
- Project B2 - *Evaluation of Work Zone Mobility by Utilizing Naturalistic Driving Study Data*
- Project C2 *–Urban Freight & Planning*
- Project D2 - *UF & UAB's Phase I Demonstration Study: Older Driver Experiences with Autonomous Vehicle Technology*
- Project E2 - *Establishing A Dual Generational Modality Dataset: Comparing the ride-sharing adoption trends and perspectives of consumers from two generational cohorts, Millennials and Gen X'ers*
- Project F2 *–Discovering Potential Market for the Integration of Public Transportation & Emerging Shared-Mobility Services*
- Project H2- *Fly-By Image Processing for Real Time Congestion Mitigation*
- *Project K2 - Assessing and Addressing Deficiencies in the HCM Weaving Segment Analyses (this report has been sent to the TRB Newsletter and accepted for publication)*
- *Project M2 - Comparing and Combining Existing and Emerging Data Collection and Modeling Strategies in Support of Signal Control Optimization and Management*
- Project O2 - *Macroscopic Fundamental Diagram Approach to Traffic Flow with Autonomous /Connected Vehicles*.

One project is currently under peer review and is expected to be finalized by early summer 2022:

- Project G2 – Quantitatively Evaluate Work Zone Driver Behavior Using 2D Imaging, 3D LiDAR, & Artificial Intelligence in Support of Congestion Mitigation Model Calibration & Validation

Six projects are currently ongoing and are expected to be completed by fall 2022:

- Project I2 – Mitigating Network Congestion by Integrating Transportation Network Companies & Urban Transit
- Project J2- Real-Time Data-Based Decision Support System for Arterial Traffic Management
- Project L2 –Understanding Relationships between the Built Environment, Physical Activity, Public Health, Urban Mobility, and Traffic Congestion: Graduate Curriculum Development
- Project N2- Data Fusion for Signalized Arterial Performance Measurement
- Project P2 – Development of Guidance for Scheduling of Freeway Work Zones to Minimize Congestion Impacts
- Project Q2 -Enabling the Shared Transportation Revolution

All ongoing projects in Year 2 are monitored by quarterly reports and by communicating with PIs by phone and email. PIs were contacted on April 8, 2022, as a reminder of their upcoming project end dates. For projects which have delivered a draft final report, these are considered completed, although each project undergoes a peer review. STRIDE Center staff works with the PI on remaining deliverables (the TTR, PB scheduling a webinar, and ensuring their data is uploaded into the Zenodo repository). Center staff are also working on ensuring all final reports are 508- compliant for accessibility and that they are formatted correctly.

Update on Year 3 projects: In Year 3, there are a total of 11 projects. Two of these projects are fully completed:

- *Project B3 – Micro-Mobility as a Solution to Reduce Urban Traffic Congestion (Completed)*
- *Project C3 – Emerging Micromobility Services for the Transportation Disadvantaged (Completed)*

Six of the 11 projects have a draft final report completed. Out of these six, two are undergoing the STRIDE Center's peer review process (Projects J3 and K3), and we are waiting for responses to reviewer comments and a finalized report from four others (Projects A3, E3, G3, and I3). The remaining three projects (D3, F3, and H3) are ongoing

and scheduled to be completed in late summer 2022. PIs were contacted on April 8, 2022, as a reminder of their upcoming project end dates. A list of Year 3 projects is available at https://stride.ce.ufl.edu/stride-research/active-research-projects/. Once completed, final reports (including the TRRs, the PBs, and the webinars) will be posted to the STRIDE Center's project webpage. The results will be disseminated via Constant Contact and final reports will be sent to TRB for inclusion into their e-newsletter. All completed projects will have an associated TTR, PB, and a recorded webinar. The PIs will upload their data into the Zenodo repository.

- **Update on Year 4 projects:** In year 4 there are a total of six projects. The following two are completed with draft final reports submitted and under review:

    - *Project C4 - Establishing A Dual Generational Modality Dataset: Comparing the ride-sharing adoption trends and perspectives of consumers from two generational cohorts, Millennials and Gen X'ers*(waiting for responses to reviewer comments and final report)
    - *Project F4 - Automatic Safety Diagnosis in Connected Vehicle Environment* (we are waiting for two peer reviewers to complete their assessment of the draft final report)

- The rest of the projects are ongoing and are scheduled to be completed in late summer of 2022. PIs were contacted on April 8, 2022, as a reminder of their upcoming project end dates. A list of Year 4 projects is available at https://stride.ce.ufl.edu/stride-research/active-research-projects/. Once completed, final reports (including the TRRs, the PBs, and the webinars) will be posted to the STRIDE Center's project webpage. The results will be disseminated via Constant Contact and final reports will be sent to TRB for inclusion into their e-newsletter. All completed projects will have an associated TTR, PB, and a recorded webinar. The PIs will upload their data into the Zenodo repository. **Update on Year 5 projects:** A total of nine projects have been selected. Eight projects are ongoing:
    - Project A5 – Barriers and Facilitators of People with Disabilities in Accepting and Adopting Autonomous Shared Mobility Services
    - Project D5 - Overcoming Barriers to Freight & Logistics Firm Collaboration with Urban Planning
    - Project E5 – Transportation Workforce Development for State DOTs to Address Equity, Diversity, and Inclusion in the Southeast Region
    - Project F5 - Transportation Workforce Development Related to Traffic Signal Systems – Phase II Project G5 – Engineering Careers from a Unique Summer Bridge Program
    - Project I5 - Evaluation of Advanced Vehicle & Communication Technologies through Traffic Microsimulation; Project J5 – Assessing and Addressing Deficiencies in the HCM Weaving Segment Analyses/Phase II
    - Project J5 - Assessing and Addressing Deficiencies in the HCM Weaving Segment Analyses- Phase II
    - Project K5 - A Better Understanding of Shopping Travel in the U.S.
    - Project H5 (continuation of Project J3) - Funds for the continuation (Phase II) of Project J3 (Identifying and Mitigating Congestion Onset, PI Dr. George List, NCSU) will be derived from Year 5. In our last Semi-Annual Report (October 2021), we indicated that the project had not been funded yet. The project is now underway.

  All Year 5 projects are posted to the Active Research Project page at https://stride.ce.ufl.edu/stride-research/active-research-projects/. These projects are expected to be completed by fall 2022 or spring 2023. PIs were contacted on April 8, 2022, as a reminder of their upcoming project end dates. Once completed, the final reports (including the TRRs, the PBs, and the webinars) will be posted to the STRIDE Center's project webpage. The results will be disseminated via Constant Contact and final reports will be sent to TRB for inclusion into their e-newsletter. All completed projects will have an associated TTR, PB, and a recorded webinar. The PIs will upload their data into the Zenodo repository.

Year 6 Projects: A total of 15 projects have been selected by the STRIDE Center's Internal Steering Committee. Eight of these projects have been subcontracted, and we are waiting on responses to reviewer comments and finalized proposals from four others. Three additional proposals are undergoing the STRIDE Center's peer review process. The titles and status of these projects are as follows:
A6 - Public Microtransit Pilots: System Assessment and Equity Considerations Based on the NC Experience (subcontracted)

- *B6 - Optimal Charging Station Planning to Adapt Mass Adoption of Electric Vehicles under Both Normal and Evacuation Scenarios (subcontracted)*
- *D6 - Centralized Clearinghouse for Transportation Workforce Development Resources for the Southeastern Region (in peer review)*
- *E6 - State DOT Policies Affecting Adaptive Street Use (subcontracted)*
- *F6 - Simulating a Shift to E-Delivery: Impacts on VMT (sent to be subcontracted)*
- *G6 - Phase 2: Evaluating Signal Timing Planning Options in Terms of Coordination between Successive Signals at Continuous Flow Intersections (subcontracted)*
- *H6 - Utilization of Connectivity and Automation in Support of Transportation Agencies' Decision Making – Phase 2 (waiting on finalized proposals from PI)*
- *I6 - Macroscopic Fundamental Diagram Estimation using Loop-Detector Data (subcontracted)*
- *J6 - Implementation Project: Planning for Urban Freight (in peer review)*
- *K6 - A Curriculum for Transportation Equity (subcontracted)*
- *L6 - Locating and Costing Congestion for School Buses and Public Transportation, Phase II (in peer review)*
- *M6 - Analysis of Impacts of Pavement Quality Deterioration on Recurring Traffic Congestion (waiting on finalized proposals from PI)*
- *O6 - Real-time Safety Diagnosis System for Connected Vehicles Using Parallel Computing (waiting on finalized proposals from PI)*
- *P6 - Equitable Artificial Intelligence in Transportation (waiting on finalized proposals from PI)*
- *R6 WKF - STRIDE K-12 Curriculum: Exploring Innovations in Transportation (subcontracted)*

These proposed projects are scheduled to be completed by summer 2023.

- **STRIDE Ongoing and Completed Projects:** A list of all STRIDE projects (ongoing and completed) can be found on the STRIDE website at https://stride.ce.ufl.edu/research-2/active-research-projects/; they are also included at the end of this report. We have created project-specific web pages for each STRIDE-funded project to provide the required Project Information sheets, links to final reports, as well as links to recorded webinars, products, related news, and any other information that relates to the project.
- **Students Supported by STRIDE:** Sixty-two students (undergrad and graduate) and post-docs have been supported in the past six months by STRIDE funding or matching cost-share projects.
- **STRIDE Serves as Sponsor, Advisory Committee for the UTC Conference**: The 7th Annual UTC Conference for the Southeastern Region was held in Boca Raton, FL on March 24-25, 2022. Dr. Lily Elefteriadou and Ines Aviles-Spadoni served on the planning committee and provided direction and assistance in planning this event. The STRIDE Center also sponsored this event. The in-person conference was hosted by Florida Atlantic University. STRIDE-funded research was widely represented during this conference.
- **STRIDE Fall 2021 Newsletter:** The STRIDE Center's Fall 2021 newsletter was released December8, 2021. The fall newsletter focused on a signature event hosted online by the STRIDE Center. The STRIDE Products Showcase featured products from STRIDE/USDOT funded research. Each STRIDE researcher prepared a short video which was played for the online audience. Each session included panelists who commented on the research. Online participants had a chance to ask questions via a chat box. The event page contains the entire program, the video presentations, and links to other useful resources for the products showcased. See event page for more

information:https://www.fau.edu/engineering/research/fmri/education-outreach/7th-utc-conference/agenda/. The entire fall 2021 newsletter can be viewed athttps://conta.cc/352BvKv.

- **STRIDE Training for Implementation of Advanced Technologies through I-STREET:** STRIDE is planning an I-STREET-related training program, funded by FDOT through a match project, which will include lessons learned on the implementation of advanced technologies. The program will provide course offerings on topics related to autonomous and connected vehicles, data analytics, and sensors for transportation applications.
- **Work in Progress for STRIDE Spring 2022 Newsletter:** The next STRIDE newsletter (spring 2021) is schedule to be released late May 2022. STRIDE staff is in the process of gathering news items, research highlights, student spotlights and other items of interest.
- **Research Project Briefs:** STRIDE continues to produce 2-page Project Briefs for each completed project, which summarize the project products and findings. STRIDE also continues to create final report "packages" which contain the final report, the project brief, the technology transfer report, and links to associated webinars. This final report package is sent via Constant Contact to transportation professionals, students, alumni, and other stakeholders. For a complete list of the Project Briefs, visit https://stride.ce.ufl.edu/technology-transfer/products/.
- **STRIDE Hosted Online Research Products Showcase:** STRIDE organized and hosted an online Research Products Showcase on November 16, 17, and 18, 2021. Each day of the showcase focused on a specific theme: Transit and Mobility, Advanced Strategies and Technologies for Congestion Mitigation, and Equity. Each session was moderated by a STRIDE researcher, with invited panelists from the transportation sector. STRIDE researchers presented their products and then panelists and participants engaged in discussion regarding the research and its applications. The products presented impact and benefit transportation agencies, state DOTs, transportation professionals, transit agencies, planners, low income or marginalized populations, researchers, and students. The link to the event's webpage and the recordings of the three sessions is https://stride.ce.ufl.edu/2021/09/2021-stride-products-showcase/.

List of Awards and Recognitions

Dr. Dimitra Michalaka, PE, received the 2022 Excellence in Transportation Engineering Award, District 5, Institute of Transportation Engineers

K-12 Outreach Activities

- STRIDE (at UF) was awarded a grant from the CUTC New Initiative Projects to develop a new 1-credit undergraduate course on Careers in Transportation to be piloted Fall 2022 (described in previous section.) The University of Florida and The Citadel are developing three lessons on transportation for middle and high school students that will feature unique topics not currently covered in other transportation curricula. The curriculum will be piloted in summer 2022 and then revised for distribution via the STRIDE website.
- Ondine Wells, STRIDE K-12 Coordinator at UF, provided weekly mentorship during the school year to a middle school Future City Engineering Club as part of the national Future City competition program. The team won 1st place in the Tampa Bay regional competition as well as awards for the Most Resilient City (sponsored by Jacobs), the Most Holistic City (sponsored by PGA), and Outstanding Use of Circular Economy Principles (sponsored by ASABE). They competed at the national Future City competition that was held virtually and won the Most Advanced Smart Grid Award sponsored by IEEE-USA (Institute of Electrical and Electronic Engineers). UF Engineering professor Dr. Sara Behdad provided additional mentorship to the team.
- Dr. Kejun Wen, assistant professor at the Department of Civil and Environmental Engineering at Jackson State University serves as the Program Director for the Mississippi Summer Transportation Institute (MSTI) for high school students. She is currently preparing for the summer 2022 session where students

will learn about transportation career opportunities and participate in college preparatory academic activities.

How have the results been disseminated?

(Note: Dissemination activities in this section remain the same and have not changed as these activities are part of the STRIDE Center's strategy for disseminating its research results and products.)

- The STRIDE Center continues to send final reports to TRB for inclusion in their weekly E-Newsletter to disseminate research results and products to the transportation community.
- Project Briefs that summarize research and any associated products are created for each completed project. They are incorporated into a Constant Contact email for wider dissemination. The Briefs are created to promote the various products developed from STRIDE- funded projects and can be found at https://stride.ce.ufl.edu/technology-transfer/products/.
- Twenty-four briefs have been completed to-date. All briefs are available on the STRIDE website on the Products page (https://stride.ce.ufl.edu/technology-transfer/products/).
- The STRIDE Center uses Facebook, Twitter, LinkedIn, and Constant Contact to disseminate the results of research, to raise awareness about ongoing research projects, to promote opportunities for students (conferences, symposia, poster sessions), to advertise upcoming webinars and distinguished speakers, and to provide information on the various K-12 outreach activities taking place at the Center.
- Final (are posted on the STRIDE website and can be found on each project-specific page. Visit the Active Research Project page at https://stride.ce.ufl.edu/stride-research/final-reports/. (Note: Both active and completed projects are posted on this page)
- Project PIs publish the results of their research in refereed journal publications, and they regularly present research in progress in technical conferences. STRIDE organizes webinars for each research project, which are recorded and are available through our YouTube channel.
- Project PIs regularly present their research to various stakeholders. The STRIDE Center tracks interactions between project PIs (and their teams) and stakeholders via progress reports, email communication, and through the Technology Transfer reports due at the completion of each project (in addition to the final/technical report). STRIDE is continuously encouraging researchers to work closely with stakeholders to obtain feedback on their research scope and methodology and to assist with the dissemination of their research findings.
- STRIDE continues to update the project-specific pages on its website. The project-specific pages provide a comprehensive list of all activities and products related to each STRIDE-funded project. These include the following: final reports, webinars, workshops, technology transfer reports, project briefs, presentations, and publications. For an example of such a page visit the Active Research Projects page at https://stride.ce.ufl.edu/stride-research/active-research-projects/ . (Note: Both active and completed projects are posted on this page)

What do you plan to do during the next reporting period to accomplish the goals and objectives?

- Ensure that draft final reports for projects from years 2, 3, and 4 are in the peer review process. This represents a total of 14 projects.
- Ensure that all selected projects from year 6 are subcontracted and in progress. This represents a total of 15 projects.
- Publish the STRIDE Center's Spring 2022 newsletter by May 2022.
- Continue to coordinate all consortium activities with the STRIDE Internal Steering Committee via monthly videoconferences.
- STRIDE will continue to monitor research projects through progress reports on a quarterly basis. Each report is reviewed to ensure adequate progress is made, to collect metrics, and for invoicing purposes.
- Continue to develop 2-page Project Briefs as projects are completed.
- Continue to host webinars related to on-going or completed STRIDE projects. A schedule of the upcoming webinars is provided at https://stride.ce.ufl.edu/technology-transfer/workshops-webinars-conferences/.

SELECTED PARTICIPANTS & COLLABORATING ORGANIZATIONS

Below is a list of selected organizations that the STRIDE Center and its consortium members have collaborated with in the past 6 months (the complete list far exceeds the page limit for this report). Most state DOTs provide cost-sharing, while other entities provide a variety of contributions (in-kind, facilities, collaborative research, personnel exchanges, etc.)

Project #	Name of Organization	Location	Type of Contribution(s)
C, A4	ALDOT		Matching funds for UAB; stakeholder
C2, A4	NCDOT		Collaborative exchange; stakeholder
D3	Alabama Department of Transportation	Birmingham, AL	Data and project information
D3	Regional Planning Commission of Greater Birmingham	Birmingham, AL	Data and project information
D3	City of Birmingham Traffic Engineering	Birmingham, AL	Data and project information
D3	Sain Associates, Inc.	Birmingham, AL	Data and collaboration on analysis
L2	City of Charleston Mayor's Health & Wellness Advisory Committee	Charleston, SC	Committee members were engaged regarding course objectives and agreed to serve as expert panel for evaluation of final student presentations.
L2	City of Charleston Planning Department	Charleston, SC	Eric Pohlman, West Ashley Project Coordinator, provided information regarding redevelopment area where course principles, planning and implementation are under consideration
L2	Medical University of South Carolina	Charleston, SC	Recruiting of Public Health MS and PhD students to enroll in course; Dr. John Vena, Chair, Dept. of Public Health Sciences reviewed course materials, provided feedback, and served as guest lecture on June 25th, 2019
N2	Bluemac Analytics	Oregon	Vendor Partner
N2	City of Raleigh	North Carolina	Data Sharing, stakeholder
N2	FDOT	Florida	Data Sharing, stakeholder
N2	GDOT	Georgia	Data Sharing
N2	NCDOT		Matching funds; stakeholder; Data Sharing
N2	Town of Cary	North Carolina	Data Sharing, stakeholder
Q2	TOMNET University Transportation Center	Atlanta, GA	in-kind contribution of survey data
L2	College of Charleston	Charleston, SC	Dr. Kendra Stewart, Director, Joseph P. Riley, Jr. Center for Livable Communities, provided feedback on course curriculum and suggested additional community collaborators
L2	Clemson University	Charleston, SC	Dr. B.D. Wortham-Galvin, Director, Master of Resilient Urban Design, provided feedback on course curriculum and suggested ways to collaborate across

			institutions for course offering to multiple graduate degree programs
Q2	UC Davis	Davis, CA	Collaborative research with Giovanni Circella to understand how COVID-19 has changed lifestyles
F3	City of Columbia	Columbia, SC	City to provide data access permission for the Blue Bike network in the city of Columbia
J3	NC State	Raleigh, NC	Collaborative Research
J3	GA Tech	Atlanta, GA	Collaborative Research
J3	FIU	Miami, FL	Collaborative Research
F4	Mississippi Department of Transportation	Jackson, MS	Potential product late adopter
F4	Computational and Data-Enabled Science and Engineering (CDS&E) Program at Jackson State University.	Jackson, MS	Late user of the proposed methodologies for class teaching in the CDS&E program
Q2	TU Delft	Delft, Netherlands	Proposed collaborative research related to project goals for IIE-Graduate International Research Experience application
D4	UF - Yu Yang	Gainesville, FL	Collaborative research
D4	Florida Atlantic University - Louis Merlin	Boca Raton, FL	Collaborative research
D4	Wencui Yang		Collaborative research
E4	GDOT	GA	Match support
E4	NCDOT	NC	Match support
E4	ALDOT	AL	Match support
E4	VTTI	VA	Data collection
B4	FL Department of Transportation (FDOT)	Florida	Field data and simulation files
B4	Kittleson and Associates		Simulation files and data
D4	Siva Srinivasan - University of Florida	Gainesville, FL	Collaborative research
x	City of Gainesville	Gainesville, FL	AV shuttle
I2	FDOT	FL	Match support
I2	UAB	AL	Institutional In-Kind match
I2	Alex Khan, Qualtrics	Illinois	Collaborative research
F3	Gotcha Mobility	Charleston, SC	Micro mobility provider with 50 MAAS systems across U.S.
F3	Georgia Institute of Technology	Atlanta, GA	Dr. Kari Watkins, collaboration to construct database, add/build on previous research, engage MAAS providers
F3	College of Charleston	Charleston, SC	Dr. Morgan Hughey, collaboration to construct database, add/build on previous research, assess physical activity, engage MAAS providers

F3	Blue Bikes of South Carolina	Columbia, SC	Micro mobility provider
I2	FDOT (Md. Shahadat Iqbal)	Florida	In-kind
I2	Qualtrics - Jeffrey Becker	Illinois	Collaborative research
D5	Greater Nashville Regional Council		Collaborative research
J5	University of Florida		Collaborative research
x	GDOT	Georgia	Cost share
Q2	Midtown Alliance		In-Kind contribution of curb video data

OUTPUTS

The STRIDE Center uses the following metrics to assess the OUTPUTS related to its technology transfer program. Sixty-one products and thirty technical reports have been completed so far. The table below summarizes those outputs. Researchers have exceeded the targets for products in Year 1 and Year 2 projects thus far.

METRIC	Year 1 Projects Target/**Completed**	Year 2 Projects Target/**Completed**	Year 3 Projects Target/**Completed**	Year 4 Projects Target/**Completed**	**TOTAL COMPLETED (To date; All Projects)**
Product(s): Number of new or improved tools, technologies, products, methods, practices, and processes to reduce congestion	9 / **19*** (1 new this period)	18 / **33*** (2 new this period)	11 / **9*** (2 new this period)	6 / **0** (0 new this period)	**61* Products**
Technical Report: Number of client-based technical reports published about approaches to congestion mitigation	10 / **10*** (1 new this period)	17 / **11*** (2 new this period)	11 / **7** (7 new this period)	6 / **2** (2 new this period)	**30* Technical Reports**

* Totals are calculated from this reporting period as well as all prior reporting periods.

Products

This table summarizes the 5products completed during the reporting period (October 1, 2021-March 31, 2022). The total number of products completed to date is 61.Twenty-four Project Briefs have been completed(some briefs include more than one product). Project Briefs can be found on the STRIDE Product page (https://stride.ce.ufl.edu/technology-transfer/products/).

#	**Product**
E2	**User questionnaire surveys -** The product is a questionnaire survey that can be used to understand changes in transportation travel behavior of different population cohorts. The survey can be modified to use in different regions and for different population cohorts. The survey was implemented in North Carolina and Florida. Project Brief
E2	**Dataset** - The survey has produced a comprehensive mobility dataset for two separate but influential population cohorts. The dataset can be further be analyzed and recreated for different markets.

E3	**Methodology** - A methodology was created to merge three different datasets. Steps included • displaying Edulog data spatially, • displaying General Transit Feed Specification (GTFS) data spatially, • merging above datasets with Regional Integrated Transportation Information System (RITIS) data, and • determining minutes of delay by hour and segment, based on above. This data was combined to create a spatial and temporal map of congestion on routes throughout the site area described in the product below. Project Brief
I3	**Headway Selection Table by Driver Characteristics: LC 2-1 and LC 3-2 and Headway Selection Table by Driver Characteristics: SC 2-2 and SC 3-3** (Tables included in QR 10/2020) Maintenance and construction on national highway systems are essential and necessary, but also result in crashes and excessive delays. Different work zone configurations can reduce delays and improve traffic flow. The research team used Naturalistic Driving Study (NDS) data to understand how different types of drivers (gender, age group, risk perception, etc.) behave in four configurations: lane closure (LC 2-1 and LC 3-2) and shoulder closure (SC 2-2- and SC 3-3). The headway distributions before, during, and after work zone areas (500 ft upstream, advanced warning area, transition area, activity area, termination area, and 500 ft downstream) were developed and compared for each. Two Headway Selection Tables by Driver Characteristics were developed—one for lane closures and one for shoulder closures. These tables can be used to improve work zone capacity by extrapolating the driver characteristics to the local population. In addition, headway selection tables can be used to set up car following models for highly automated vehicles or some advanced driving systems (adaptive cruise control, etc.) at work zone areas. Transportation agencies can apply headway selection tables for different driver composition to provide a more accurate capacity and delay estimation for work zones on freeways. • Headway Selection Table by Driver Characteristics: LC 2-1 and LC 3-2 • Headway Selection Table by Driver Characteristics: SC 2-2 and SC 3-3 The completed tables will be finalized in the report and will be available as the final report published.
J	**Improvements to Traffic Simulation Models of Freeway Work Zones** - Improvements to traffic simulation models of freeway work zones were developed in this research project. The recommended values, in lieu of the default settings in VISSIM, for properties including truck acceleration characteristics, standstill distance, and time headway distribution, more accurately replicate field conditions. These values should be suitable for modeling freeway work zones in rural settings in the region, and the truck acceleration characteristics representative of the U.S. trucking fleet should be generalizable to typical freeway conditions across the nation. Project Brief

Completed Technical Reports

The following projects are completed (all active and completed projects can be found on the STRIDE website at https://stride.ce.ufl.edu/stride-research/active-research-projects/):

- Project A-Impact of Smartphone Applications on Trip Routing & Congestion Management
- Project B -Technology Influence on Travel Demand & Behaviors
- Project C-Performance Measurement & Management Using Connected & Automated Vehicle Data
- Project D-Evaluation of Advanced Vehicle and Communication Technologies through Traffic Microsimulation
- Project E-The Challenges of Predicting Travel Behavior on Estimating Trip Generation: Local Traffic Impact Assessment in Four Southeastern and Mid-Atlantic States
- Project F-Integrated Implementation of Innovative Intersection Designs
- Project G-Transit in the Era of Shared Mobility
- Project H – Strategies for Mitigating Congestion in Small Urban & Rural Areas
- Project I-Freeway Management for Optimal Reliability
- Project J- Improving Work Zone Mobility through Planning, Design, and Operations

- Project A2-Changing Access to Public Transportation & the Potential for Increased Travel
- Project B2-Evaluation of Work Zone Mobility by Utilizing Naturalistic Driving Study Data
- Project C2-Urban Freight & Planning
- Project D2-UF & UAB's Phase I Demonstration Study: Older Driver Experiences with Autonomous Vehicle Technology
- Project E2 – Establishing a Dual Generational Modality Dataset: Comparing the Riding-Sharing Adoption Trends & Perspectives of Consumers from Two Generational Cohorts, Millennials & Gen X'ers
- Project F2-Discovering Potential Market for the Integration of Public Transportation & Emerging Shared-Mobility Services
- Project G2 – Quantitatively Evaluate Work Zone Driver Behavior using 2D Imaging, 3D Lidar, & Artificial Intelligence in Support of Congestion Mitigation Model Calibration & Validation
- Project H2-Fly-By Image Processing for Real Time Congestion Mitigation
- Project K2-Assessing and Addressing Deficiencies in the HCM Weaving Segment Analyses
- Project M2-Comparing and Combining Existing and Emerging Data Collection and Modeling Strategies in Support of Signal Control Optimization and Management
- Project O2- Macroscopic Fundamental Diagram Approach to Traffic Flow with Autonomous/Connected Vehicles
- Project A3 - UF & UAB's Phase 2 Demonstration Study: Developing a Model to Support Transportation System Decisions considering the Experiences of Drivers of all Age Groups with Autonomous Vehicle Technology
- Project B3 - Micro-Mobility as a Solution to Reduce Urban Traffic Congestion
- Project C3 – Emerging Mobility Services for the Transportation Disadvantaged
- Project E3 – Locating and Costing Congestion for School Buses and Public Transportation
- Project G3 – Utilization of Connected and Automated Vehicles in Support of Transportation Agencies' Decision Making
- Project I3 – Evaluation of Work Zone Mobility by Utilizing Naturalistic Driving Study Data, Phase II
- Project J3 – Identifying and Mitigating Congestion Onset
- Project C4 - Transportation Workforce Development for State DOTs to Address Congestion for the Southeast Region
- Project F4 – Automatic Safety Diagnosis in Connected Vehicle Environment

Publications, Conference Papers, Posters& Presentations

Forty publications, conference papers, posters and presentations were completed during the reporting period and are listed on the table below.

Project	Description	Date	Type
C3	Cochran, Abigail L., Jueyu Wang, Lauren Prunkl, Lindsay Oluyede, Mary Wolfe, and Noreen McDonald. 2021. Access to the COVID-19 Vaccine in Centralized and Dispersed Distribution Scenarios. Findings, May. https://doi.org/10.32866/001c.23555. https://findingspress.org/article/23555-access-to-the-covid-19-vaccine-in-centralized-and-dispersed-distribution-scenarios	10/1/21	Publication
E	Combs, T. and N. McDonald. 2021. Driving Change: Exploring the Adoption of Multimodal Local Traffic Impact Assessment Practices. *Journal of Transport and Land Use* 14(1): 47-64.	2021	Publication
J3	Ishtiak Ahmed, North Carolina State University, presented Detecting and Classifying Congestion Onset on Freeways using Probe Data at the 2021 NCDOT Research & Innovation Summit on October 6, 2021. https://www.hsrc.unc.edu/ncdot-ri-summit/	10/6/21	Presentation

E2	Classroom Presentation – September 13, 2021: Dr. Abhinav Alakshendra, University of Florida, presented the findings in his Urban Economy class.	9/13/21	Presentation
I2	Sultana, T., Sisiopiku, V.P., Khalil, J., and Yan, D. (2022). Potential Benefits of Increased Public Transit Ridership in Medium Sized Cities: A Case Study, Journal of Transportation Technologies, Vol. 12, No. 1, January 2022. Available at https://www.scirp.org/journal/paperinformation.aspx?paperid=114470	1/1/22	Publication
I2	Morshed S.A., Hadi, M., and Sisiopiku, V.P. A Novel Multi-Agent Based Simulation Study on the Extension of Metrorail in Miami Beach Region. 7th Annual Conference for the Southeastern Region, Boca Raton, FL, March 2022.	3/1/22	Presentation
Q2	Perception of Shared Mobility Throughout the COVID-19 Pandemic by Rebecca Kiriazes, for 7th Annual Regional UTC Conference for the Southeastern Region in Boca Raton, FL.	3/1/22	Presentation
H3	Yuqiang Ning, Lili Du. Navigating towards system optimum: A distributed routing scheme under mixed-strategy correlated game, Transportation Research Board 101st Annual Meeting, Washington DC, January 9-13, 2022.	1/11/22	Presentation
H3	Yuqiang Ning, Lili Du. Robust and Resilient Equilibrium Routing Mechanism for Traffic Congestion Mitigation Built upon Mixed Strategy Correlated Game and Distributed Optimization, 7th UTC Conference for the Southeastern Region, Boca Raton, FL, March 24-25, 2022.	3/25/22	Presentation
D4	Xiaojian Zhang gave a talk, entitled Optimizing demand-responsive paratransit operations: A case study of Anson County, North Carolina, at the 2021 Research to Practice Transit Symposium.	2021	Presentation
D4	Xiaojian Zhang presented his work, entitled A clustering-aided ensemble method for predicting ridesourcing demand in Chicago, at the 5th Graduate Research Symposium at the University of Florida.	-	Presentation
E4	Reasonable Alternatives for Grade Separated Intersections was accepted for poster presentation at the TRB 2022 Annual Meeting	TRB 2022	Paper
E4	Movement-Based Intersection Crash Frequency Modeling is pending publication with the Journal for Transportation Safety and Security (JTSS).		Publication
A5	Hwangbo, S. W., Mason, J. R., & Classen, S. Simulator sickness in younger, middle-aged, and older drivers after exposure to an autonomous driving simulator. Abstract submitted to the 35th Annual University of Florida College of Public Health and Health Professions Research Day on February 10th, 2022.	12/14/21	Presentation
A5	Hwangbo, S. W., Mason, J. R., & Classen, S. Age, sex, and cognition to predict simulator sickness provocation in an autonomous driving simulator. To be submitted to Safety	5/28/21	Publication
A5	Sisiopiku, V. P.*, Yang, W., Mason, J., McKinney, B., Hwangbo, S. W., & Classen, S. Users' perceptions and attitudes toward autonomous vehicle technologies after simulation exposure – A study across the lifespan. A full paper submitted to the 8th Road Safety & Simulation International Conference on June 8-10, 2022.	11/26/21	Publication
A5	Mason, J., Classen, S., Hwangbo, S-W., & Sisiopiku, V. P. Effects of Age, Sex, and Technology Readiness of Older Adults' Experience with Autonomous Shuttles. Manuscript submitted on 8/1/2021 to Transportation Research Records.	8/1/21	Publication

A5	Mason, J. R., Burns, H. C., Joseph, J. L., Hanson, C. S., Fox, E. J., DeMark, L. A., Snyder, H., Horwitz, H. M., & Classen, S. Perceptions of adults with Spinal Cord Injury or disease before and after riding in an autonomous shuttle. Abstract submitted on 11/30/2021 to the 2022 American Occupational Therapy Association Annual Conference & Expo on March 31- April 3, San Antonio, Texas & Virtual.	11/30/21	Presentation
A5	Classen, S., Sisiopiku, V.P., Mason, J. R., Yang, W., Hwangbo, S. W., McKinney, B. & Li, Y. Experience of drivers of all age groups in accepting autonomous vehicle technology. Manuscript submitted on 12/21/2021 to Transportation Research Part C: Emerging Technologies	12/21/21	Publication
A5	Classen, S., Manjunatha, P., Stetten, N., Mason, J., & Elefteriadou, L. Perceptions of Older Road Users Before and After the Exposure to an Autonomous Shuttle. ROAM (Research on Older Adults' Mobility), Invited Presentation, Residence Inn by Marriot, Washington D.C., 09 January 2022.	1/9/22	Presentation
A5	Classen, S., Manjunatha, P., Mason, J. & Elefteriadou, L. Public Perceptions and Lessons Learned from Autonomous Shuttle Demonstration Studies. Association for Unmanned Vehicle Systems International (AUVSI) Exponential All Things Unmanned Conference, Orlando, Florida, 25-28 April 2022.	10/29/21	Presentation
A5	Mason, J., Classen, S., & Sisiopiku, V. Automated Vehicle User Perception Survey: A brief tool to assess intention to use and acceptance of automated vehicles. Association for Unmanned Vehicle Systems International (AUVSI) Exponential All Things Unmanned Conference, Orlando, Florida, 25-28 April 2022.	10/29/21	Presentation
A5	Accepted: Classen, S. Track: Crossroads: Progress through Specialized Workshops. Session Title: Accelerating Innovation Through Diversity of Thought. Presentation Title: Perspectives on Older drivers and Individuals with Spinal Cord Injury using Autonomous Vehicles. Session ID: XPO22-WK07AUVSI XPONENTIAL 2022, Orlando Florida, 28 April 2022,	10/29/21	Presentation
A5	Classen, S., Sisiopiku, V., Yang, W., Mason, J., Hwangbo, S-W., & McKinney, B. Autonomous vehicle revolution and drivers' perceptions of autonomous shuttles. ADED 46th Annual Conference in Charlotte, NC, Monday, October 3, 2022	3/28/22	Presentation
A5	Classen, S., Sisiopiku, V.P., Yang, W., & Mason, J. Experiences of drivers of all age groups in accepting autonomous vehicle technology. Consortium of University Transportation Centers Annual Conference, Boca Raton, FL, March 2022.	3/24/22	Presentation
A5	Hwangbo, S. W., Mason, J., & Classen, S. Predictors of simulator sickness in a driving simulator in autonomous mode. Occupational Therapy Summit of Scholars, Madison, WI, June 16-18, 2022.	3/25/22	Presentation
D5	McDonald, N. The Transport Agenda in the US. Chartered Institute of Highway and Transportation (UK) Young Professionals Conference. December 2021.	12/1/21	Presentation
E5	The PI is invited to be on a panel discussion centering on Equity in Practice at the ITE Virtual Technical Conference in March. She prepared a presentation emphasizing workforce resiliency and community engagement.	3/1/22	Presentation
D4	Zhang, X., & Zhao, X. (2022). Machine learning approach for spatial modeling of ridesourcing demand. Journal of Transport Geography, 100, 103310.	2/1/22	Publication

D4	Yan, X., Zhao, X., Broaddus, A., Johnson, J., & Srinivasan, S. (2022). Exploring the potential of shared e-scooters as a last-mile complement to public transit. The 7th UTC Conference.	3/1/22	Presentation
D4	Su, L., Yan, X., Zhao, X. (2022). Micromobility equity: A comparison of shared e-scooters and station-based bikeshare in Washington DC. The 7th UTC Conference.	3/1/22	Presentation
D4	Zhang, X., Zhou, Z., Yan, X., & Zhao, X. (2022). Examining spatial heterogeneity of ridesourcing demand determinants with explainable machine learning. The 7th UTC Conference.	3/1/22	Presentation
D4	Xu, Y., Yan, X., Sisiopiku, V. P., Merlin, L. A., Xing, F., & Zhao, X. (2022). Micromobility trip origin and destination inference using General Bikeshare Feed Specification (GBFS) data. Transportation Research Record. (Accepted)	3/1/22	Paper
F4	We submitted the abstract of a paper titledEvaluation and Sensitivity Analysis of Unsupervised Driving Anomaly Detectionto vehicles of Multidisciplinary Digital Publishing Institute	10/26/21	Publication
F4	Conference Paper We submitted the abstract of a paper titledConflict Identification Using Speed Distance Profile on Basic Safety Messages to the International Conference on Transportation and Development (ICTD) 2022.	11/9/21	Paper
J3	Our I-5 work was presented at TRB in January 2022.	1/10/22	Presentation
J3	Our I-5 paper was accepted for the TRB meeting in January 2022	1/10/22	Paper
J3	Our I-5 work was presented at the NCDOT Research Summit, October 2022	10/6/21	Presentation
N2	NCDOT's Research and Innovation Summit: Multi-Sensor Data Fusion for Signalized Arterial Travel Time and Delay, Shoaib Samandar	10/1/21	Presentation
J3	Our I-5 work from Phase 1 was presented at the 7th Annual UTC Conference hosted by FAU in Boco Raton.	3/24/22	Presentation

OUTCOMES

The STRIDE Center uses the metrics shown in the table below to assess the OUTCOMES related to its technology transfer program. Eighty-six trainings serving 3,548professionals have been held for STRIDE projects to-date. Researchers have exceeded the targets for both the number of trainings and the number of professionals trained for Year 1, Year 2, and Year 3 projects thus far.

METRIC	Year 1 Projects Target/ **Completed**	Year 2 Projects Target/ **Completed**	Year 3 Projects Target/ **Completed**	Year 4 Projects Target/ **Completed**	Year 5 Projects Target/ **Completed**	Multiple Project/ Other **Completed**	**TOTAL COMPLETED (All Projects)**
Body of Knowledge: Number of technology transfer trainings for transportation professionals on a new or improved congestion mitigation approach (workshops, webinars)	9 / **31*** (6 new this period)	18 / **31*** (7 new this period)	11 /**13*** (2 new this period)	6 /**3*** (0 new this period)	9 /**1*** (1 new this period)	**7** (3 new this period)	**86* Trainings** (19 new this period)

Professionals Trained: Number of transportation professionals participating in technology transfer trainings to improve their understanding and awareness of new or improved congestion mitigation approaches	90 / **972***	180 / **1551*** (59 new this period)	110 /**654***	60/ **70***	90/**30*** (30 new this period)	**301** (91 Product Showcase)	**3,578* Professionals trained** (180 new this period)

* Totals include this and all prior reporting periods.

Trainings & Professionals Trained

Five trainings engaged 180 professionals during the reporting period, as shown in the table below. There were an additional 517 views of YouTube recordings of STRIDE product videos and webinars.

STRIDE hosted a three-day Product Showcase on November 16, 17, and 18, 2021. Seventeen products were featured during the event. A three- to five-minute video was created for each product to provide an overview of the problem, the product solution, and the stakeholders who can use the product. Each day, a panel of stakeholders was invited to provide feedback on the STRIDE products. The event webpage includes links to project briefs and product videos. The Event Booklet can be found online as well as the YouTube playlist of all product videos and the full videos of Day 1, Day 2, and Day 3 that include stakeholder discussions. Ninety-one professionals participated in the live event and there have been 439 views of the product and event videos on YouTube.

Project#	Training	Date	# Trained	YouTube Views
D5	**Webinar**: Iacobucci, E. and D. Magliola. Reports from the Battle for the Curb: Using social media to Understand Safety Challenges Faced by Urban Delivery Drivers. Collaborative Sciences Center for Road Safety (CSCRS) Research to Practice Bytes Series. March 2022. (https://www.youtube.com/watch?v=VYCkogP9HX4)	3/23/2022	30	35
B, D2, B3, E3, F2	**STRIDE 2021 Product Showcase: Day 1, Transit and Mobility Options** Moderator: Noreen McDonald, UNC Panelists: Malisa Mccreedy, City of Gainesville; Mathew Palmer, Durham, NC Public Schools; Xiang "Jacob" Yan, UF ***5 Product Presentations:*** • Kai Monast, MRP, NCSU/ITRE, Product: Web Mapping Tool for Bus Delays • Xilei Zhao, Ph.D., UF, Product: Machine Learning Methodology for Micromobility Travel Demand Forecasting and SERMO Lab's Micromobility Analytics Platform • Justin Mason, Ph.D., UF, Product: Autonomous Vehicle User Perception Survey (AVUPS) • Lili Du, Ph.D., UF, Product: Data-driven Approach for First/Last Mile Gaps and Hybrid Transit Services • Virginia Sisiopiku, Ph.D., UAB Birmingham, Product: Questionnaire on Transportation User Behavior	11/16/2022	38	439 views of all videos
A, C, D, H2, K2,	**STRIDE 2021 Product Showcase: Day 2, Advanced Strategies and Technologies for Congestion Mitigation**	11/17/2022	33	

cost-share	Moderator: Mike Hunter, GaTech Panelists: Joseph Hummer, North Carolina DOT and Maria Roell, Atlanta Regional Commission ***6 Product Presentations:*** • Nasim Uddin, Ph.D., UAB Birmingham, Product: Real-Time Vehicle Location Model • Nagui Rouphail, Ph.D., NCSU/ITRE, Product 1) Method for Extracting High Resolution Video Data; Product 2:New Capacity Analysis Method for Ramp Weave Segments and Computational Engine to Exercise the Method • Pruthvi Manjunatha, Ph.D., UF, Product: Simulation Extension with CAV Functionality for VISSIM • Angshuman Guin, Ph.D., GaTech, Product: Framework for using Google Location History Data for Route Choice and Network Analysis • Mohammed Hadi, Ph.D., FIU, Product 1) Framework and Methods to use CV Data for Estimating Performance Measurements; Product 2) Methods to use Data to Manage Traffic • Lily Elefteriadou, Ph.D., UF, Product: Guidelines for Modeling Connected and Autonomous Vehicles			
FDOT, A2, A2, F, G, cost-share	**STRIDE 2021 Product Showcase: Day 3, Equity in Transportation** Moderator: Lily Elefteriadou, UF Panelists: Virginia Whittington, MetroPlan Orlando and Alison Stettner, FDOT ***6 Product Presentations:*** • Eleni Bardaka, Ph.D., NCSU/ITRE, Product: Accessibility Methodology • Mohebbi Mehri, Ph.D., UF, Product: Transportation Equity Course • Siva Srinivasan, Ph.D., UF, Product: Community Based Participatory Research (CBPR): Application for Transportation Planning • Ruth Steiner, Ph.D., UF, Product: Transit Accessibility Tool • Noreen McDonald, Ph.D., UNC Chapel Hill, Product: Taxonomy of Shared Mobility Options for Healthcare • Ishtiak Ahmed, Ph.D., NCSU/ITRE, Product: Microsimulation Models of Continuous Flow Intersections for Ped-Bike Crossings	11/18/2022	20	
D2	**STRIDE Webinar**: Pruthvi Manjunatha, Ph.D., Justin Mason, Ph.D., Lily Elefteriadou, Ph.D., and Sherrilene Classen, Ph.D., University of Florida presented Findings from Autonomous Shuttle Demonstrations and Challenges Ahead	10/20/2021	59	43
	TOTAL for Reporting Period		**180**	**517**

IMPACTS

The STRIDE Center uses the list of metrics shown in the table below to assess the IMPACTS related to its technology transfer program. Over 167 meetings with stakeholders have been completed and twelve products have been adopted or implemented to-date. Researchers have exceeded the target number of stakeholders for Years 1, 2 and 3 thus far.

METRIC	Year 1 Projects Target/ **Completed**	Year 2 Projects Target/ **Completed**	Year 3 Projects Target/ **Completed**	Year 4 Projects Target/ **Completed**	**TOTAL COMPLETED (To date; All Projects)**

Stakeholders: Number of stakeholders (agencies, businesses, etc.) you meet with to encourage adoption or implementation of congestion mitigation approaches	9 / **11*** (1 new)	18 / **79*** (1 new)	11 / **49*** (1 new)	6 / **28*** (7 new)	**167* Stakeholder Meetings**
Adoption/Implementation: Number of incidences that congestion mitigation outputs of research have been implemented or adopted (ex. decision making, practices, methods, analytical tool, data/database, software, policy change, behavior analysis, commercialization)	2 / **2***	2 / **10***	2 / **1*** (1 new this period)	2 / **0***	**13* Products Adopted/ Implemented**

* Totals include this and all prior reporting periods.

Stakeholder Meetings

Researchers held 10 meetings with stakeholders during the reporting period. Some researchers meet with their stakeholders on a weekly or regular basis and many meetings include multiple stakeholders.

Proj #	Stakeholder(s)	Date	Description
Q2	Midtown Alliance	3/3/2022	Met with Midtown Alliance to discuss locations with curbside management issues in the Atlanta area. They were willing to share 30+ hours of traffic video footage at four locations. These videos will be processed and used to collect curb activity for VISSIM scenario calibration.
F3	Lucinda Statler, City Planning Administrator, City of Columbia, SC; Yanik Hardy, Customer Service Manager, Bewegen Bikes, Canada; Shane Shaughnessy, Assist. City Planner, City of Columbia, SC	1/14/2022	Meeting agenda was on: I. Establishing relationship and collaboration with Yanik Hardy, Customer Service Manager, Bewegen Bikes, Canada (Venders for Blue Bikes, Columbia, SC) II. Providing data (dashboard) access to Blue Bikes (Columbia, SC) data. Access to detailed trip GPS tracking data and aggregated trip characteristics
D4	Andrea Broaddus, Sr. Research Scientist, Ford Motor Company Josh Johnson, Public Policy Manager, Spin	every two weeks	Drs. Zhao and Yan have been regularly meeting with key stakeholders from Ford/Spin to seek feedback on our work
A5	Derrick Breun, VP of Operations at Transdev, Jesus Gomez, City of Gainesville, I-Street	every two weeks	Justin Mason has been in constant communication with the City of Gainesville, I-Street, and Transdev to plan and organize data collection. Stakeholders have been providing us with updates related to the automated shuttle and their policies reflecting COVID-19.
A5	Derrick Breun, VP of Operations at Transdev, Jason Perez, Michelle, Jack, Transdev		Seung Woo Hwangbo is in communication with Transdev on

			participants' schedules for data collection and they provided feedback on how the shuttle rides are completed, and managed. Depending on participants' responses, communication methods varied using direct phone calls, text messages, and emails. Stakeholders provide updates.
A5	Bhavana Patel from UF Health Norman Fixel Institute for Neurological Diseases, Gainesville Parkinson's Support group	11/19/2021	Sherrilene Classen was invited, participated, and presented this study in the Gainesville Parkinson's Support group meeting on Friday, November 19th, at 12:30 pm.
A5	Kevin Ahmadi from Oak Hammock at UF, President and CEO	3/31/2022	Justin Mason met with the CEO of the Oak Hammock to discuss shuttle and research findings: Autonomous Vehicles for Older Adults Living with Disabilities on March 31st, 2022.
D5	Jessica Hill, GNRC (Greater Nashville Regional Council)	ongoing	Discussions with Greater Nashville Regional Council about urban freight issues in the community
E5	DOTs in Southeast	10/18/2021 & 11/21/2021	Communication regarding ED&I efforts related to the workforce
K5	Leta Huntsinger, Institute for Transportation Research and Education	3/3/2022	Dr. Bhagat-Conway met with Dr. Huntsinger and discussed the Triangle Regional travel demand model, including how this project could be integrated in the future. Dr. Huntsinger expressed a willingness to have the regional model used for research and provided background on the history of the model and the upcoming Generation 2 model. Integrating the results of this project with the model will be a significant part of the follow-on project proposed to STRIDE for year 6.

Product Adoption

There was 1product adoption during the reporting period. Thirteen products have been adopted or implemented to-date.

E3	Web mapping tool of minutes of transit and school bus delays by mode will be directly used by stakeholders in Durham County in NC and Pinellas County in FL.

CHANGES/PROBLEMS

- Changes in approach and reasons for change – ***NOTHING TO REPORT***
- Actual or anticipated problems or delays and action or plans to resolve them –***NO CHANGE:*** *The COVID 19 pandemic has caused the cancellation or postponement of several events and activities. The STRIDE consortium has modified several K-12 programs to an on-line format. All project meetings and university courses have continued uninterrupted. Reduced traffic and social distancing rules may result in delays in data collection.*
- Changes that have a significant impact on expenditures - ***NOTHING TO REPORT***
- Significant changes in use or care of human subjects, vertebrate animals and/or biohazards - ***NOTHING TO REPORT***
- Change of primary performance site location from that originally proposed - ***NOTHING TO REPORT***

SPECIAL REPORTING REQUIREMENTS

- ***NONE***

STRIDE Year 1, Year 2, Year 3, Year 4, Year 5, and Year 6 List of Projects

The complete list of projects can be found at: https://stride.ce.ufl.edu/stride-research/active-research-projects/)

Cost Share Projects

Complete List of Cost Share Projects at the University of Florida

FDOT #	Title	PI	Start Date	End Date	Project Status
BDV32-977-05	Before and After Implementation Studies of Advance Signal Technologies in Florida	Elefteriadou	5/7/2014	8/31/2019	completed
BDV31-977-44	Evaluation of Arterial Corridor Improvements and Traffic Management Plans in Florida	Elefteriadou	6/11/2015	9/30/2019	completed
BDV31-977-45	Development and Testing of Optimized Autonomous and Connected Vehicle Trajectories at Signalized Intersections	Elefteriadou	6/15/2015	11/15/2017	completed
BDV33-945-002	Transportation Safety Center	Cahill	11/6/2015	12/31/2017	completed
BDV32-934-01	Improvements to the FDOT Travel Time Reliability Model for Freeway Analysis	Elefteriadou	2/1/2016	7/31/2017	completed
BDV33-977-04	Local Technical Assistance Program for Transportation Agencies 2016-2017	Cahill	9/29/2016	10/15/2017	completed
BDV33-977-05	Local Technical Assistance Program for Transportation Agencies 2017-2018	Muller	10/23/2017	8/31/2018	completed
BDV31-977-99	University of Florida (UF) Testbed Initiative- Alternative Transportation Safety Systems	Agarwal	5/7/2018	10/31/2020	completed
BDV31-977-109	Extended Development and Testing of Optimized Signal Control with Autonomous and Connected Vehicles	Elefteriadou	3/26/2019	7/31/2021	completed

BDV31-977-115	Transportation Mobility Assessment and Recommendations for Smart City Planning	Elefteriadou	6/10/2019	10/31/2021	ongoing
BDV31-977-120	Before and After Study of Gainesville Pedestrian-Bicyclists Connected Vehicle Pilot	Elefteriadou			
BDV31-977-133	Florida ATMA Pilot Demonstration and Evaluation	Agarwal	6/1/2020	3/31/2021	completed
BDV31-977-135	Characterizing Curve Crashes in Florida	Bejleri	6/18/2020	8/31/2022	ongoing
BDV31-977-128	Develop, Refine, and Validate a Survey to Assess Adult's Perspectives of Autonomous Ride-Sharing Services	Classen	11/21/2019	6/30/2021	completed
BDV31-977-127	Evaluation of East Gainesville's Microtransit Mobility Project	Steiner	11/5/2019	8/31/2021	completed
BDV31-977-97	Traffic-event Unification System Highlighting Arterial Roads	Ranka	3/19/2018	6/15/2020	completed
BDV31-977-77	Data Management and Analytics for UF Smart Testbed	Ranka	6/7/2017	11/15/2020	completed
BDV31-977-140	Evaluating the Operations and Safety Benefits of AI-driven Driver Information-focused Countermeasures for CAV Technologies	Srinivasan	4/2/2021	8/31/2022	ongoing
BDV31-977-126	Development of Florida Traffic Characteristics for Service Volume Calculations Based on the Latest HCM	Washburn	11/4/2019	9/30/2022	ongoing
BDV31-977-142	Road Ranger Program for Arterials	Srinivasan	4/8/2021	11/30/2021	ongoing
BDV31-977-116	Bigdata Analytics and Artificial Intelligence for Smart Intersections	Ranka	6/14/2019	6/30/2022	ongoing
BDV31-977-117	Data Analytics and Evaluation of the Gainesville Trapezium Connected Vehicle Signal Phasing and Timing (SPaT) Deployment Project	Ranka	6/11/2019	10/15/2021	ongoing
BDV31-977-113	University of Florida Testbed Initiative - Transit Components (Smart Bus Bike Rack System)	Yoon	5/20/2019	10/31/2020	completed
BDV31-977-123	Evaluating the Connection Between Transit and TNCs (Transportation Network Companies) in Pinellas County for Statewide Application	Peng	11/4/2019	8/31/2021	ongoing

BDV31-977-139	Evaluation of CARMA for I-STREET Testbed Implementation	Manjunatha	12/27/2021	11/30/2022	Ongoing

List of Cost Share Projects from STRIDE Partner Universities

Strategy Analysis and Evaluation for Emergency Vehicle Preemption and Transit Signal Priority with Connected Vehicles using Software in the Loop Simulation
PI: Dr. Angshuman Guin, GaTech
Sponsor: Georgia Department of Transportation (RP 22-03)

Post-Installation Evaluation of the Effects of Ramp Metering in North Carolina (2018-19)
PI: Dr. Joy Davis, NCSU
Sponsor: North Carolina Department of Transportation

Planning Ahead for the Future Urban Transportation Challenges: A Data Science Solution
PI: Dr. Da Yan and Dr. Virginia Sisiopiku, UAB
Sponsor: UAB CAS Interdisciplinary Team Award (3122578.000.213122578.480004000.0000)

Blazer Scholarship Award
PI: Dr. Virginia Sisiopiku, UAB
Sponsor: UAB Graduate School (333370.02.09.2023862)