

## 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: October 29, 2021

DUNS #: 969663814  
EIN #: 59-6002052

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

Reporting Period End Date: 10/30/2021

Reporting Term or Frequency: Semi Annual



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## 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?*

- **Update on Year 1 projects:** Nine of the 10 research projects are now completed. We are expecting the remaining project (Project H) to be delivered by the end of November 2021. All STRIDE final reports (including the TRRs, the PBs, and the webinars) are posted to the STRIDE Center's [projects webpage](#). They are also disseminated via Constant Contact and sent to TRB for inclusion into their e-newsletter. All these completed projects have an associated TTR, [PB](#), and a [recorded webinar](#). Also, the PIs of completed projects have uploaded their project data into the [Zenodo repository](#). The nine 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 I - *Freeway Management for Optimal Reliability*
- *Project J – Improving Work Zone Mobility through Planning, Design, and Operations*

Although the final report for Project J has been completed, we are still working with the PI (Dr. Rod Turochy, Auburn) on the TTR and the PB. We also expect Dr. Turochy to upload his data into the Zenodo repository by the end of October 2021. We anticipate completing the TTR and PB for Project J by November 2021. As for the TTR and BP for Project H, we anticipate completing those by December 2021. We expect that the PI (Dr. Dimitra Michalaka) will upload her data into Zenodo by the end of December 2021.

- **Update on Year 2 projects:** Nine 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 their data into the [Zenodo repository](#). The nine 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 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.*

Two projects are expected to be completed by the end of January 2022:

- Project E2 –Establishing a Dual Generational Modality Dataset: Comparing the Riding-Sharing Adoption Trends & Perspectives of Consumers of From Two Generational Cohorts, Millennials & Gen X'ers
- 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 late summer 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 (to be completed summer 2022)
- Project Q2 -Enabling the Shared Transportation Revolution (to be completed late summer 2022)

All ongoing projects in Year 2 are monitored by quarterly reports, and by communicating with PIs by phone and email. For projects which have delivered a draft final report, the STRIDE Center staff works with the PI on the 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:** All 11 projects funded in Year 3 are ongoing and are currently scheduled to be completed in spring 2022. 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:** All six projects are currently ongoing and are scheduled to be completed in the summer of 2022. 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 9 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.
- One more project, which is a continuation of [Project J3](#), is planned to be underway soon (Project H5 - Identifying and Mitigating Congestion Onset, led by Dr. George List, NC State Univ.)

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. 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](#).

- **Year 6 Projects:** The STRIDE Internal Steering Committee, comprised of one representative from each of the STRIDE partner universities, is in the process of vetting and selecting projects for Year 6. These projects are related to the following topics currently under consideration:
  - Equity in Transportation
  - AVs and
  - The elderly
  - Workforce Development
  - Implementation for Urban Freight and Traffic Impact Analysis
  - E-Delivery and Impacts on VMT
  - An Update to AASHTO Green Book: Recommended Acceleration/Deceleration Lengths
  - Utilization of Connectivity and Automation in Support of Transportation Agencies' Decision Making – Phase 2
  - Macroscopic Fundamental Diagram Estimation using Loop-Detector Data
  - Role of Transportation in Vaccine Access Patterns
  - Implementation Project: Planning for Urban Freight
  - A Curriculum for Transportation Equity
  - Analysis of Impacts of Pavement Quality
  - Deterioration on Recurring Traffic Congestion
  - Pilot Study on Implementing Automatic Safety Diagnosis System
  - Equitable AI in Transportation
  - Exploring Innovations in Transportation (K-12 Curriculum)
  - Public Microtransit Pilots: System Assessment and Equity Considerations Based on the NC Experience
  - Locating and Costing Congestion for School Buses and Public Transportation, Phase II
  - Evaluating Signal Timing Planning Options in Terms of Coordination between Successive Signals at Continuous Flow Intersections

➤ State DOT Policies Affecting Adaptive Street Use

These proposed projects will be peer-reviewed and scheduled to begin early January 2022 to be completed by summer 2023.

- 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.
- Ninety students (undergrad and graduate) and post-docs have been supported in the last year by STRIDE funding or matching cost-share projects.
- Plans are underway to hold an in-person UTC Conference for the Southeastern Region in spring 2022. STRIDE is serving on the planning committee and is a co-sponsor of the event. The in-person conference is being organized by Florida Atlantic University.
- The STRIDE Center's Spring 2021 newsletter was released June 9, 2021. The newsletter included reviews of research projects and products, engaging with stakeholders, spotlights on researchers and students, a list of webinars, an overview of K12 activities, and more. The Spring 2021 newsletter can be viewed at <https://conta.cc/352BvKy>.
- 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.
- The next STRIDE newsletter (fall 2021) is scheduled to be released early December 2021. STRIDE staff will begin the process of gathering news items, research highlights, student spotlights and other items of interest starting November 2021.
- 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 is in the process of organizing a STRIDE Research Products Showcase, which will take place as a virtual event November 16, 17, & 18 from 12 PM to 2 PM, ET. STRIDE researchers have produced a variety of products which impact and benefit transportation agencies, state DOTs, transportation professionals, transit agencies, planners, low income or marginalized populations, researchers, and students. Project PIs will provide short descriptions of their products and answer audience questions. Each day, from 12 PM to 2 PM, ET, will focus on one of three themes: Transit and Mobility; Advance Strategies and Technologies for Congestion Mitigation; and Equity. Each of the themes will have a moderator and panelists comprised of transportation professionals from academia and the public sector. The link to the event's webpage is <https://stride.ce.ufl.edu/2021/09/2021-stride-products-showcase/>.
- Ondine Wells, K-12/Technology Transfer Coordinator and Ines Aviles-Spadoni, STRIDE Research Coordinator, submitted a proposal to the CUTC New Initiatives Program titled "Exploring Career Paths in Transportation: Engaging with the Grand Challenges of our Era". The proposed project is a semester-long seminar class for undergraduate students that will be piloted at the University of Florida and 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 held online or in-person (and recorded) focused on career paths and career skills.

#### List of Awards and Recognitions

- A paper led by Dr. Xilei Zhao (University of Florida) won the Travel Behavior and Society (TBS) Outstanding Paper Award 2020. Details at: <https://www.journals.elsevier.com/travel-behaviour-and-society/news/tbs-outstanding-paper-award-2020>.
- Dr. Dimitra Michalaka (Citadel) received the 2021 Service Award by The Citadel Faculty Excellence Committee and The Citadel Provost.
- Dr. Mohammed Hadi (Florida International University) received the Research and Creative Activities Faculty Award, 2021.
- Dr. Mohammed Hadi (Florida International University) received the College of Engineering Mentorship Faculty Award, 2021.
- Ph.D. student (GaTech) Rebecca Kiriazes was appointed Initiative Fellow for the program Revolutionizing Engineering Departments (RED)
- Ph.D. student (GaTech) Rebecca Kiriazes was appointed CEE Future Faculty Fellow.
- Cadet Robert O’Neal (Citadel) received the Harry McCullough Mims Scholarship for exceptional aptitude and outstanding student achievement in transportation engineering.

#### K-12 Outreach Activities

- Due to COVID-19, many K-12 outreach activities have been put on hold until restrictions are lifted both at K-12 schools and at universities where programs take place. In some cases, activities were able to be re-structured to an online or hybrid format.
- STRIDE (at UF) hosted a webinar “Adapting K-12 Programs to a Virtual Environment during COVID-19” on April 14, 2021 featuring virtual programs implemented by Dimitra Michalaka, Ph.D., at The Citadel and Jennifer Meadows, Ph.D., and Carey Wilson, from Tennessee Technical University.
- STRIDE (at UF) hosted a meeting with partners working on K-12 efforts on August 6, 2021 to discuss a proposal to develop a STRIDE K-12 Curriculum for middle and high school students that would feature unique topics not currently covered in other transportation curricula. A proposal for Year 6 funding support from STRIDE is under development.
- STRIDE (at UF) submitted a workforce development proposal to the CUTC New Initiative Projects (described in previous section.)
- STRIDE (at UF) partnered with Julee Breehne at the UF Florida Engineering Experiment Station on September 21, 2021 to provide a virtual presentation on Complete Streets and Transportation Careers to 3 classes (48 students) at Booker Middle School in Sarasota County, FL.
- Ondine Wells, STRIDE K-12 Coordinator at UF, provides weekly mentorship during the school year to a middle school Future City Engineering Club as part of the national Future City competition program.
- Dr. Michalaka (The Citadel), taught two virtual week-long summer camps on July 12-16 and July 19-23, 2021 to thirty-two 8th, 9th, and 10th-grade students in collaboration with the Governor’s School of Science and Mathematics. The camps’ theme was “Engineering Around Town” and covered the basics of several engineering majors through lectures, videos, hands-on activities, and the use of online software. Website link: <https://www.scgssm.org/camps/summer-stem-virtual-camp/summer-stem-courses>
- The Citadel conducted engineering recruitment activities for more than 71 prospective students of high school and technical colleges and their families.
- Dr. Michalaka (The Citadel) joined the Cooper River Center for Advanced Studies (CAS) (<https://www.ccsdschools.com/domain/2971>) as a business partner to provide advice and support for the pre-engineering program.
- Dr. Kejun Wen, assistant professor at the Department of Civil and Environmental Engineering at Jackson State University served as the Program Director for a two-week virtual Mississippi Summer Transportation Institute (MSTI) for 23 high school students. Students learned about transportation career opportunities

and participated in college preparatory academic activities. Participants were provided with an Engineering Box of supplies to complete various STEM activities at home.

- The Oakley STEM Center at Tennessee Tech implemented a hybrid workshop to engage 17 middle school mathematics and science teachers in transportation-related activities and subsequently encourage them to incorporate transportation topics into their classroom lessons. The workshop included 12 hours devoted to completing 7 online modules as well as a 7-hour in-person day of training.

#### *How have the results been disseminated?*

- The STRIDE Center sends final reports to TRB for inclusion in their weekly E-Newsletter.
- Project Briefs that summarize the 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 produced from STRIDE-funded projects and can be found at <https://stride.ce.ufl.edu/technology-transfer/products/>.
- Twenty-two 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/) (<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 (and ongoing) reports 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 currently 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 venues. 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. A Stakeholder Engagement Webinar was held for all STRIDE researchers in August 2020. A [recording](#) of the webinar is available for all researchers to reference for ideas on how to meaningfully engage stakeholders in their research.
- 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 generally 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 currently posted on this page)

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

- Review, select and subcontract Year 6 projects.
- Work with PIs to complete all projects in YR 1, YR2, and YR3.
- Publish the STRIDE Center's Fall 2021 newsletter by early December 2021.
- Continue to coordinate activities with the STRIDE Internal Steering Committee via monthly videoconferences.
- Continue to attend planning meetings for the 7<sup>th</sup> Annual UTC Conference for the Southeastern Region, which is currently planned for spring 2022.
- 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/>.
- Continue to provide guidance and monitor the K-12 projects at The Citadel, Georgia Tech, Jackson State University, Tennessee Tech, University of Alabama at Birmingham, and at the University of Florida. Efforts will be made to expand online programs where possible.

## 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)
A5, J2	City of Gainesville	Gainesville, FL	AV shuttle, Access to data streams from the City's system and discuss applying the methodology by the city
A5	Transdev	Paris, France	Providing safety operator/engineer and route mapping for the AV shuttle;
B4	FL Department of Transportation (FDOT)	FL	Field data and simulation files
B4	Kittleson and Associates	-	Simulation files and data
C, A4	ALDOT	GA	Matching funds for UAB; stakeholder
C, A4, I2, G3, J2, N2	FDOT, Md. Shahadat Iqbal, Qualtrics (Jeffrey Becker and Alex Khan), FDOT District 4	FL	Matching funds for UF and FIU; stakeholder, in-kind, collaborative research, possible implementer, data sharing
C2, A4, E4, G3, N2	NCDOT	NC	Collaborative exchange; stakeholder, match support, data sharing
C3	Alabama Cooperative Extension	Auburn, AL (and counties around the state)	Data, guidance on travel needs, connections to communities
C3	City of Gainesville Department of Mobility	Gainesville FL	Research oversight, strategic direction
C3	Gainesville Regional Transit System (RTS)	Gainesville, FL	Personnel exchange, data
C3	Institute for Transportation Research and Education (ITRE)	Raleigh, NC	Data
C3	Orange County Department for Aging	Orange County, NC	Helped organize stakeholder meeting involving UNC Healthcare, Duke Health, local transit and social service agencies.
D2	Florida State University	Tallahassee, FL	Dissemination
D3	Alabama Department of Transportation	Birmingham, AL	Data and project information
D3	City of Birmingham Traffic Engineering	Birmingham, AL	Data and project information
D3	Regional Planning Commission of Greater Birmingham	Birmingham, AL	Data and project information
D3	Sain Associates, Inc.	Birmingham, AL	Data and collaboration on analysis

D4	Florida Atlantic University - Louis Merlin	Boca Raton, FL	Collaborative research
D4	Siva Srinivasan - University of Florida	Gainesville, FL	Collaborative research
D4	UF - Yu Yang	Gainesville, FL	Collaborative research
E3	Durham, NC Public Schools	Durham, NC	Anonymous school bus route data
E3	Edulog (Education Logistics, Inc.)	-	Data
A4, E4, G2, G3, N2	GDOT	GA	Match support, data sharing
E4, I3	VTTI	VA	Data collection and provider
F3	Blue Bikes of South Carolina	Columbia, SC	Micro mobility provider
F3	City of Columbia	Columbia, SC	City to provide data access permission for the Blue Bike network in the city of Columbia
F3, L2	College of Charleston	Charleston, SC	Dr. Morgan Hughey, collaboration to construct database, add/build on previous research, assess physical activity, engage MAAS providers; Dr. Kendra Stewart, Director, Joseph P. Riley, Jr. Center for Livable Communities, provided feedback on course curriculum and suggested additional community collaborators
F3, J3	Georgia Institute of Technology	Atlanta, GA	Dr. Kari Watkins, collaboration to construct database, add/build on previous research, engage MAAS providers, collaborator
F3	Gotcha Mobility	Charleston, SC	Micro mobility provider with 50 MAAS systems across U.S.
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
F4	Mississippi Department of Transportation	Jackson, MS	Potential product late adopter
I2	Qualtrics - Alex Khan,	IL	Collaborative research
I2	Qualtrics - Jeffrey Becker	IL	Collaborative research
I2	UAB	AL	Institutional In-Kind match
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	Clemson University	Charleston, SC	Dr. BD 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

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	OR	Vendor Partner
N2	City of Raleigh	NC	Data Sharing, stakeholder
N2	Town of Cary	NC	Data Sharing, stakeholder
Q2	TOMNET University Transportation Center	NC	In-kind contribution of survey data
Q2	TU Delft	Delft, Netherlands	Proposed collaborative research related to project goals for IIE-Graduate International Research Experience application
Q2	UC Davis	Davis, CA	Collaborative research with Giovanni Circella to understand how COVID-19 has changed lifestyles

## OUTPUTS

The STRIDE Center uses the following metrics to assess the OUTPUTS related to its technology transfer program. Fifty-six products and eighteen 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/ <b>Completed</b>	Year 2 Projects Target/ <b>Completed</b>	Year 3 Projects Target/ <b>Completed</b>	<b>TOTAL COMPLETED (To date; All Projects)</b>
<b>Product(s):</b> Number of new or improved tools, technologies, products, methods, practices, and processes to reduce congestion	9 / <b>18*</b> (3 new this period)	18 / <b>31*</b> (1 new this period)	11 / <b>7*</b> (1 new this period)	<b>56*</b> Products
<b>Technical Report:</b> Number of client-based technical reports published about approaches to congestion mitigation	9 / <b>9*</b>	18 / <b>9*</b>	11 / <b>0</b>	<b>18*</b> Technical Reports

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

### Products

This table summarizes the 5 products completed during the reporting period (April 1, 2021-September 30, 2021). The total number of products completed to date is 56. Many products are featured in 2-page Project Briefs which can be found on the [STRIDE Product page](https://stride.ce.ufl.edu/technology-transfer/products/) (https://stride.ce.ufl.edu/technology-transfer/products/).

#	Product
E	<b>Structured Interview on TIA</b> A structured interview guide was developed to understand how municipal transportation planners and local governments approach the transportation impact assessment (TIA).
E	<b>Protocol for Content Analysis</b> A protocol was developed for conducting general inductive content analysis of interview transcripts and notes. The program Atlas.ti 8.2 was used to find common themes.

E	<p><b>Strategies for Innovations in TIAs</b></p> <p>Researchers Dr. Noreen McDonald and Dr. Tabitha Combs published a tool in the ITE Journal in September 2020 called Reinventing TIA: Contemporary Approaches to Addressing the Traffic Impacts of Urban Development. The tool describes a number of strategies that can be implemented for making TIAs more innovative. <a href="https://www.nxtbook.com/ygsreprints/ITE/ITE_Sept2020/index.php?startid=46#/p/46">https://www.nxtbook.com/ygsreprints/ITE/ITE_Sept2020/index.php?startid=46#/p/46</a></p>
D2	<p><b>Autonomous Simulation Scenario</b></p> <p>A driving simulation scenario was developed for the Realtime Technologies Inc. (RTI) driving simulator (<a href="https://drivingsim.php.ufl.edu/">https://drivingsim.php.ufl.edu/</a>). This simulation scenario was built to broadly represent geographic features to emulate the route of the autonomous shuttle. A video of the simulation scenario may be found on YouTube at (<a href="https://www.youtube.com/watch?v=kDObiycJUxA">https://www.youtube.com/watch?v=kDObiycJUxA</a>). Face and content validation of the simulation ensured congruence with the real-life scenario. The validation process is described in an open-access publication in Frontiers: <a href="https://www.frontiersin.org/articles/10.3389/ffutr.2020.596620/full">https://www.frontiersin.org/articles/10.3389/ffutr.2020.596620/full</a></p> <p><a href="#">Project Brief</a></p>
E3	<p><b>Web mapping tool to examine time delay and cost of delays for transit and school buses</b></p> <p>Methodologies were created to merge three different datasets: congestion data from Regional Integrated Transportation Information System (RITIS), transit route and frequency data from General Transit Feed Specification (GTFS), and school bus routing data from Edulog. These datasets were combined to create spatial and temporal maps of congestion on routes throughout the site areas. Data were used to create a web mapping tool, which allows the user to examine minutes of delay for transit buses and for school buses at any time of the day, using an expandable map. The map can be accessed via <a href="http://www.transitportal.org/cost_of_congestion.html">www.transitportal.org/cost_of_congestion.html</a>. <a href="#">Project Brief</a></p>

#### Completed Technical Reports

The projects listed below are completed. All projects can be found on the STRIDE website at <https://stride.ce.ufl.edu/stride-research/active-research-projects/>. (Note: Both active and completed projects are currently posted on this page)

- 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 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 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
- 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

*Publications, Conference Papers, Posters & Presentations*

Project #	Description	Date	Type
A3	Classen, S. (2021). Unstoppable Minds: Episode 4: Empowering Older Adults to Keep their Independence <a href="http://www.ufl.edu/unstoppableminds/">http://www.ufl.edu/unstoppableminds/</a> .		podcast
A3	Mason, J., & Classen, S. Automated shuttles and buses for all asers (Session B210): Older drivers and persons with disabilities experiences with automated shuttles. Virtually presented at the TRB: Automated Road Transportation Symposium (ARTS) on July 13, 2021.	7/13/2021	presentation
A3	Hwangbo, S. W., Classen, S., Mason, J., Wersal, J., Rogers, J., Sisiopiku, V. Older drivers' motion sickness and simulator sickness after automated vehicle exposure. Poster presented at the Virtual Occupational Therapy Summit of Scholars on June 24, 2021.	6/24/2021	poster
A3	Classen, S., Mason, J., Hwangbo, S. W., Wersal, J., Rogers, J., & Sisiopiku, V. (2021) Older drivers' experience with automated vehicle technology. Journal of Transport and Health, 22, 101107. <a href="https://doi.org/10.1016/j.jth.2021.101107">https://doi.org/10.1016/j.jth.2021.101107</a> .	6/12/2021	publication
A3	Classen, S., Sisiopiku, V., Mason, J., McKinney, B., Hwangbo, S. W., Yang, W. Users' perceptions and attitudes toward autonomous vehicle technologies after simulation exposure – A study across the lifespan. 8 <sup>th</sup> Road Safety and Simulation – RSS 2022 Conference at Athens, Greece, June 8-10, 2022.	7/15/2021	conference presentation
A3	Mason, J. presented: Transportation survey and FL shuttle deployments. Presented at the Safe Mobility for Life Transitioning from Driving Team Meeting on July 22, 2021.	7/22/2021	presentation
A3	I-MAP Works to Ensure Independence & Mobility for Drivers across the Lifespan at the University of Florida Transportation Institute newsletter.	8/25/2021	other
A3	Kimberly, B. (2021, September 2). Exposing older adults to self-driving technology improves perceptions on safety, usefulness: study. McKnight's Senior Living. <a href="https://www.mcknightsseniorliving.com/home/news/exposing-older-adults-to-self-driving-technology-improves-perceptions-on-safety-usefulness-study/">https://www.mcknightsseniorliving.com/home/news/exposing-older-adults-to-self-driving-technology-improves-perceptions-on-safety-usefulness-study/</a> .	9/2/2021	media/article
A3	Manjunatha, P., Mason, J., Classen, S., Elefteriadou, L., & Srinivasan, S. Public perception and lessons learned from autonomous shuttle demonstration studies. Transportation Research Board (TRB), Washington D.C., January 9-13, 2022.	9/28/2021	conference presentation
A3	Manjunatha, P., Mason, J., Classen, S., Elefteriadou, L., & Srinivasan, S. Public perception and lessons learned from autonomous shuttle demonstration studies. Transportation Research Records.	10/1/2021	publication
A5	Classen, S., Mason, J., Hwangbo, S. W., Wersal, J., Rogers, J., & Sisiopiku, V. P. (2021). Older drivers' experience with automated vehicle technology. Journal of Transport and Health, 22, 101107. <a href="https://doi.org/10.1016/j.jth.2021.101107b">https://doi.org/10.1016/j.jth.2021.101107b</a> .	6/12/2021	publication
A5	Hwangbo, S. W., Classen, S., Mason, J., Wersal, J., Rogers, J., Sisiopiku, V. Older drivers' motion sickness and simulator sickness after automated vehicle exposure. The Virtual Occupational Therapy Summit of Scholars on June 23-25, 2021.	6/24/2021	conference presentation
A5	Mason, J., & Classen, S. <i>Automated Shuttles and Buses for All Users (Session B210)</i> : Older drivers and persons with disabilities experiences with automated shuttles. Virtually presented at the TRB: Automated Road Transportation Symposium (ARTS) on July 13, 2021.	7/13/2021	Conference presentation

A5	Hwangbo, S. W., Classen, S., Mason, J., Wersal, J., Rogers, J., Sisiopiku, V. Older adults' motion sickness and simulator sickness after riding in an on-road automated shuttle and simulated drive-in autonomous mode. Florida Occupational Therapy Association's Virtual Live Conference on November 13-14, 2021.	7/15/2021	conference presentation
A5	I-MAP Works to Ensure Independence & Mobility for Drivers across the Lifespan at the University of Florida Transportation Institute newsletter.	8/25/2021	other
A5	Kimberly, B. (2021, September 2). Exposing older adults to self-driving technology improves perceptions on safety, usefulness: study. McKnight's Senior Living. <a href="https://www.mcknightsseniorliving.com/home/news/exposing-older-adults-to-self-driving-technology-improves-perceptions-on-safety-usefulness-study/">https://www.mcknightsseniorliving.com/home/news/exposing-older-adults-to-self-driving-technology-improves-perceptions-on-safety-usefulness-study/</a> .	9/2/2021	media (article, etc.)
A5	Classen, S., Sisiopiku, V., Mason, J., McKinney, B., Hwangbo, S. W., Yang, W. Users' Perceptions and attitudes toward autonomous vehicle technologies after simulation exposure – A study across the lifespan. 8 <sup>th</sup> Road Safety and Simulation – RSS 2022 Conference at Athens, Greece, June 8-10, 2022.	9/15/2021	conference presentation
A5	Classen, S. Drivers with Parkinson's and autonomous vehicle technologies. Webinar to Parkinson's Association Greater Daytona Beach.	10/5/2021	live webinar with Q&A
B3, D4	<a href="https://www.alligator.org/article/2021/06/electric-scooters-are-coming-to-uf">https://www.alligator.org/article/2021/06/electric-scooters-are-coming-to-uf</a>	6/1/2021	media- article
B3, D4	<a href="https://joyride.city/3-ways-micromobility-services-can-socially-impact-cities/">https://joyride.city/3-ways-micromobility-services-can-socially-impact-cities/</a>	6/1/2021	media-article
C3	Liu, C., and Bardaka, E. (2021). The suburbanization of poverty and changes in access to public transportation in the Triangle Region, NC. Journal of Transport Geography 90. <a href="https://doi.org/10.1016/j.jtrangeo.2020.102930">https://doi.org/10.1016/j.jtrangeo.2020.102930</a> .	Dec 2021	publication
C3	Steiner, R. Panel Discussion on The Future of Share Mobility. Presented at the Annual Conference of the International Association of China Planners (IACP). Virtual presentation.	Oct 2021	presentation
C3	Abigail L. Cochran and Noreen McDonald. 2021. Transportation barriers to health care access during the COVID-19 pandemic among North Carolina residents Presented at 2021 NCDOT Research & Innovation Summit. Virtual presentation.	Oct 2021	presentation
D4	Su, L., Yan, X., Zhao, X. (2022). Micromobility equity: A comparison of shared e-scooters and station-based bikeshare in Washington DC. In Proceedings of Transportation Research Board 101st Annual Meeting. (Accepted).	9/1/2021	conference paper
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. In Proceedings of Transportation Research Board 101st Annual Meeting. (Accepted).	9/1/2021	conference paper
D4	Yan, X., Yang, W., Zhao, X. (2022). Do e-scooters complement or compete with public transit and station-based bikesharing? A case study of Washington DC. In Proceedings of Transportation Research Board 101st Annual Meeting. (Accepted).	9/1/2021	conference paper
D4	Wang, X., Yan, X., Zhao, X., & Cao, Z. (2021). Identifying latent shared mobility preference segments in low-resourced communities: Ride-hailing, fixed-route bus, and mobility-on-demand transit. Travel Behaviour and Society. (In press).	9/1/2021	publication
D4	Xu, Y. (2021). Real-time forecasting of dockless scooter-sharing demand: A spatio-temporal multi-graph convolutional network approach. The UF AI Research Catalyst Fund Seminar Series. (Invited talk).	9/1/2021	educational product
E3	This project was selected to deliver a poster at the NCDOT Research Summit in October 2021.	Oct 2021	presentation
F3	Christian Seidler, Evaluation of transportation network infrastructure, safety, and travel route characteristics of bike share, electric-powered pedal-assist bike share, and electric scooter system operation STRIDE student showcase, Transportation Research Board (TRB) January 29 <sup>th</sup> , 2021.	1/29/2021	presentation

F4	Anomaly detection on driving status using basic safety Messages in Connected Vehicle Environment on the International Conference on Transportation and Development (ICTD) 2021.	6/8/2021	conference presentation
G3	Hadi M, Amine K, Hunsanon T, Arafat M. Evaluating the Benefits of Red-light violation warning system in a connected vehicle Ssmulation environment. Transportation Research Record. July 2021. doi:10.1177/036119812111026662.	7/27/2021	presentation
G3	Arafat M, Hadi M, Hunsanon T, Amine K. Stop sign gap assist application in a connected vehicle simulation environment. Transportation Research Record. April 2021. doi:10.1177/036119812111006111.	4/10/2021	publication
G3	A red-Light violation warning system in a connected vehicle simulation environment, Mohammed Hadi, Ph.D., PE Kamar Amine Thodsapon Hunsanon Mahmoud Arafat (TRB).	2021	publication
H	Dimitra Michalaka to present at the virtual 2021 SDITE Annual Meeting to be held April 11-16, 2021.	4/2021	conference presentation
I2	Sisiopiku, V.P., Morshed S. A., Sarjana, S., and Hadi, M. (2021). Transportation users' attitudes and choices of ride-hailing services in two cities with different attributes. Journal of Transportation Technologies, Vol. 11 (2), April 2021. <a href="https://www.scirp.org/journal/paperinformation.aspx?paperid=108245">https://www.scirp.org/journal/paperinformation.aspx?paperid=108245</a> .	4/22/2021	publication
I3	Xu, D., Chennan, X. & Zhou, H. (2021, September 14). Analysis of headway and speed nased on driver characteristics and work zone configurations using Naturalistic driving study data. Transportation Research Record: Journal of the Transportation Research Board. <a href="https://doi.org/10.1177/03611981211015261">https://doi.org/10.1177/03611981211015261</a> .	9/14/2021	publication
I3	Dr. Hugo Zhou & Dan Xu, STRIDE Webinar, Evaluation of work zone mobility by utilizing naturalistic driving study data, Phase II.	10/6/2021	webinar
N2	NCDOT's Research and Innovation Summit: Multi-Sensor Data Fusion for Signalized Arterial Travel Time and Delay, Shoab Samandar.	10/21	presentation
Q2	Submitted paper Comparison of Online Survey Recruitment Platforms during the COVID-19 pandemic for presentation and publication at 2022 TRB Conference.	TRB 2022	publication

## OUTCOMES

The STRIDE Center uses the metrics shown in the table below to assess the OUTCOMES related to its technology transfer program. Sixty-seven trainings serving 3,398 professionals 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 both 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	Multiple Project/ Other	TOTAL COMPLETED (All Projects)
<b>Body of Knowledge:</b> Number of technology transfer trainings for transportation professionals on a new or improved congestion mitigation approach (workshops, webinars)	9 / 25*  (1 new this period)	18 / 24*  (3 new this period)	11 / 11*  (7 new this period)	6 / 3*  (2 new this period)	4  (1 new this period)	67* Trainings  (14 new this period)
<b>Professionals Trained:</b> Number of transportation professionals participating	90 / 972*	180 / 1492*	110 / 654*	60 / 70*	210	3,398*

in technology transfer trainings to improve their understanding and awareness of new or improved congestion mitigation approaches	(48 new this period)	(135 new this period)	(254 new this period)	(40 new this period)	(18 new this period)	<b>Professionals trained</b>  (495 new this period)
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\* Totals include this and all prior reporting periods.

### *Trainings & Professionals Trained*

Fourteen trainings engaged 495 professionals during the reporting period, as shown in the table below. There were an additional 474 views of YouTube recordings of STRIDE webinars.

Proj #	Training	Date	# Trained	YouTube Views
J	STRIDE Webinar: Rod Turochy, Ph.D., Auburn University and Virginia P. Sisiopiku, Ph.D., University of Alabama at Birmingham (UAB) presented "Traffic Simulation Parameters, Merge Configurations, and Capacity Modeling for Freeway Work Zones"	4/21/2021	48	43
D2	STRIDE Webinar: Sherrilene Classen, Ph.D., University of Florida; Justin Mason, Ph.D., University of Florida; and Virginia P. Sisiopiku, Ph.D., University of Alabama at Birmingham (UAB) presented "Older Driver Experiences with Autonomous Vehicles: A Demonstration Study"	5/26/2021	51	91
G2	STRIDE Webinar: Yichang (James) Tsai, Ph.D., P.E., Georgia Institute of Technology and Rod Turochy, Ph.D., Auburn University presented "Work Zone Driver Behavior Extraction and Modelling using AI-system and Vissim"	5/12/2021	40	39
M2	STRIDE webinar -- Mohammed Hadi, Ph.D., PE, Florida International University and Virginia P. Sisiopiku, Ph.D., University of Alabama at Birmingham (UAB) presented "Combining Emerging Data Collection and Modeling Strategies in Support of Signal Control Optimization" on May 19, 2021. Participants in the webinar represented universities, state DOTs, and consulting companies.	5/19/2021	44	34
A3	Results from Phase I and updates for this project were presented at the TRB ARTS 2021 Conference on July 13, 2021	7/13/2021	57	
B3	Dr. Xilei Zhao gave an invited talk, entitled "Planning innovative mobility systems with machine learning," at the Transportation Data Science Seminar Series, hosted by Texas A&M University. <a href="https://tamids.tamu.edu/2021/07/12/transportation-data-science-seminar-series-xilei-zhao-planning-innovative-mobility-systems-with-machine-learning/">https://tamids.tamu.edu/2021/07/12/transportation-data-science-seminar-series-xilei-zhao-planning-innovative-mobility-systems-with-machine-learning/</a>	7/15/2021	50	N/A
B3, D4	Yiming Xu gave an invited talk, entitled "Real-time forecasting of dockless scooter-sharing demand: A spatio-temporal multi-graph convolutional network approach," in the UF AI Research Catalyst Fund Seminar Series. <a href="https://informatics.research.ufl.edu/event/ai-advances-and-applications-virtual-seminar-series-ai-research-catalyst-fund-awardees/">https://informatics.research.ufl.edu/event/ai-advances-and-applications-virtual-seminar-series-ai-research-catalyst-fund-awardees/</a>	9/1/2021	40	N/A
C3	STRIDE webinar: Abigail Cochran, Ph.D., Noreen McDonald, Ph.D., and Mary Wolfe, Ph.D. at the University of North Carolina at Chapel Hill; Kai Monast, MRP, North Carolina State University; and Ryan Brumfield, PE, North Carolina Department of Transportation presented "Transportation's Critical Role in the COVID-19 Vaccine Rollout"	6/30/2021	21	33
C3	STRIDE Webinar: Abigail Cochran, Ph.D., Lindsay Oluyede, MURP, Doctoral Candidate, and Olivia Jueyu Wang, Ph.D., from the University of North Carolina at Chapel Hill, Edward Fishman, Principal, Via Transportation, Inc.; and Herb Mullen, Director, Inter-County Public Transportation Authority (ICPTA) presented "Transportation to Health Care and COVID-19: Exploring Pandemic-Era Travel Trends and Post-Pandemic Challenges and Opportunities"	6/16/2021	21	47

E3	STRIDE Webinar: Kai Monast, Ruth Steiner, and Jeremy Scott presented research results to a national audience consisting of practitioners and researchers on August 4, 2021. The presentation covered the project scope, data, methodology, and results, culminating in a demonstration of the web-mapping application. The audience was engaged and had many follow-up questions as well as requests for more information.	8/4/2021	35	56
I3	STRIDE Webinar: On 10/6/2021, Dr. Hugo Zhou and Dan Xu presented "Evaluation of Work Zone Mobility by Utilizing Naturalistic Driving Study Data, Phase II" at the STRIDE Webinar.	10/16/2021	30	25
D4	Dr. Xilei Zhao gave an invited talk, entitled "Identifying key factors associated with ridesplitting adoption rate and modeling their nonlinear relationships," in the TRB AMS50 webinar series – Exploring Shared Mobility with Machine Learning. <a href="https://youtu.be/xMpmJ_beyZc">https://youtu.be/xMpmJ_beyZc</a>	8/12/2021	20	N/A
D4	Dr. Xilei Zhao gave an invited talk, entitled "Predicting and interpreting ridesourcing travel behavior using machine learning," in the Next Generation Transportation Systems (NGTS) Seminar, hosted by the Department of Civil and Environmental Engineering at the University of Michigan, Ann Arbor.	Sept 2021	20	N/A
K-12	STRIDE Webinar: Dimitra Michalaka, Ph.D., The Citadel; Jennifer Meadows, Ph.D., Tennessee Technical University, and Carey Wilson, Tennessee Technical University presented "Adapting K-12 Programs to a Virtual Environment during COVID-19"	4/14/2021	18	41
<b>TOTAL for Reporting Period</b>			<b>495</b>	<b>474</b>

## 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 147 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)
<b>Stakeholders:</b> Number of stakeholders (agencies, businesses, etc.) you meet with to encourage adoption or implementation of congestion mitigation approaches	9 / 10*	18 / 78*	11 / 48* (13 new)	6 / 21* (7 new)	157* Stakeholder Meetings
<b>Adoption/Implementation:</b> 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 new this period)	2 / 0*	2 / 0*	12* Products Adopted/ Implemented

\* Totals include this and all prior reporting periods.

### Stakeholder Meetings

Researchers held 20 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
A3	Derrick Breun, VP of Operations at Transdev, Jesus Gomez, City of Gainesville, I-Street	13 weekly meetings 4/13/2021 & 7/6/2021	Justin Mason has been in constant communication with the City of Gainesville, I-Street, and Transdev to plan and organize data collection. Stakeholders provide updates related to the automated shuttle and their policies reflecting COVID-19.
A3	Elisha Ghosn, Jason Perez, Michelle, Jack from Transdev	4/12/2021-7/2/2021 (bi-weekly meetings)	Seung Woo Hwangbo has been in constant communication with Transdev on participants' schedules for data collection. Michelle or Jack provided feedback on how the shuttle rides are completed and managed all the troubleshooting issues of the shuttle. Stakeholders provide updates related to the automated shuttle and their policies reflecting COVID-19.
A3, A5	Sheri Coven from Cambridge Systematics, Inc.	7/22/2021	Justin Mason participated in the Safe Mobility for Life Transitioning from Driving Team Meeting and presented on the update of the AV/CV survey and the phase II outreach. The agenda was titled, "Transportation survey and FL shuttle deployments."
A3, A5	Cynthia Jones from Ohio Department of Transportation	9/15/2021	Justin Mason was invited, participated, and presented in the Florida/Ohio/Texas Transportation Consortium Meeting on the topic of the Impact of Technology on Disabled, Vulnerable, and Elder Road Users.
D3	Charles Cochran, Jeff Stephenson, Paul Gilliam (Sain Associates)	7/22/2021	Met to discuss additional scope, data, and analysis to be provided by Sain Associates.
E3	Tony Langhorne, Pinellas County School Board (PCS) Autumn Westermann, Pinellas Suncoast Transit Authority (PSTA) Heather Sobush, PSTA Joe Camera, Pinellas County Schools T. Mark Hagewood, Pinellas County Schools Director of Transportation Chelsea Favero, Pinellas County MPO	6/9/2021	Kai Monast, Ruth Steiner, Kevin Hart, Waugh Wright, Jeremy Scott, Terry Karson, Juan Suarez held a virtual demonstration for staff and leaders at Pinellas County Schools, Pinellas Suncoast Transit Authority, and local transportation planners. The project team reviewed the project and presented general results about congestion experienced by school buses and transit buses and estimates of the resultant costs. The web mapping tool for Durham County was demonstrated, showing the audience how they could utilize it to examine congestion at any location at any hour of the day. The audience was very interested and in post-meeting conversations expressed interest in working more with the research team. Si
E3	Mathew Palmer (DPS-Executive Director of Strategic Planning Initiatives), Aaron Cain (Durham Planning Manager), Joe Harris (DPS, Director of Transportation), Brian Fahey (GoTriangle and GoDurham Transit Administrator), Alexander Modestou (DPS, Director of Budget and Data Development), Paul LeSieur (DPS CFO), Julius Monk (DPS COO).	6/9/2021	Kai Monast, Ruth Steiner, Kevin Hart, Waugh Wright, Jeremy Scott, Terry Karson, Juan Suarez held a virtual demonstration for staff and leaders at Durham Public Schools, Durham transportation planners as well as GoDurham and GoTriangle public transportation systems. The project team reviewed the project and presented results about congestion experienced by school buses and transit buses and estimates of the resultant costs. The web mapping tool was demonstrated, showing the audience how they could utilize it to examine congestion at any location in Durham County at any hour of the day. The audience was very interested and in post-meeting conversations expressed interest in working more with the research team.

F3	Lucinda Statler, City Planning Administrator, City of Columbia, SC;	7/14/2021	Meeting agenda included: I. Reestablishing collaboration for project with new planning director of City of Columbia, SC II. Update and review of data sharing agreement
J3	Kelly Wells, State Traveler Information Engineer, NCDOT	7/12/2021	Presentation about findings from work to date, especially the algorithms for detecting DIC and IIC. Kelly provided suggestions about people to contact, at INRIX, the CATT Lab, DriveWyze, and WayCare, to see if they might be interested in incorporating our algorithms into their work / products.
J3	Jerry Jensen, Tom Riley, David Spencer	7/30/2021	Presentation about findings from work to date, especially the algorithms for detecting DIC and IIC. Presentation was well received. They indicated a willingness to see if they could provide us with data we could use to do similar work for arterials.
J3	Terri Johnson (Inrix)	7/22/2021	Presentation about findings from work to date, especially the algorithms for detecting DIC and IIC. Presentation was well received. Terri saw the value in what we had done. She indicated a willingness to connect us with people at Inrix who are working on similar ideas.
J3	Jim Pond and Tom Pollack, Monroe County, NY	7/30/2021	Presentation about findings from work to date, especially the algorithms for detecting DIC and IIC. Jim and Tom expressed a willingness to provide what data they have and to connect us with additional people at NYSDOT Region 4 who might have probe data we could use.
J3	Michael Pack, CATT Lab, UMD	10/1/2021	Presentation about findings from work to date, especially the algorithms for detecting DIC and IIC. Presentation was well received. Michael said he would help us see if we can obtain data from some of his supporters, especially municipalities in Massachusetts, who have been receiving probe trajectory data for a while.
A4	Chris Hilyer (State TSMO Administrator, ALDOT) and Brett Sellers (State TSMO Group, ALDOT)	6/3/2021	Met with ALDOT TSMO group to discuss current programs they have underway to address congestion and areas of interest they would have for the STRIDE project. We discussed the ASAP vehicle assistance program in great detail, as this is an area of interest for them right now.
A4	Jennifer Portanova, State Systems Operations Engineer, NCDOT	2/4/2021	The NCSU team again met with NCDOT on an IMAP project where the issue of debris removal and other secondary benefits of IMAP activities were discussed as a needed follow-on research effort.
A4	Tim Nye (Traffic Safety Project Engineer, NCDOT)	8/30/2021 and 9/8/2021	The team met with NCDOT Traffic Safety Unit twice. The first meeting the team presented the case study scope and requested safety data. The TSU provided a crash dataset and GIS shapefile. The second meeting was held to review these datasets and the proposed analysis methodology.
C4	Gabriela Juarez & Robert McHaney, APA TPD (Transportation Planning Division)	4/5/2021, 5/27/2021	We met to provide the final survey and graphics to be distributed through their social media (Facebook) and listserv on a bi-weekly basis.
C4	Colleen Agan (ITE) and ITE Leadership	5/13/2021, 5/27/2021, 6/9/2021	We communicated with ITE to have the survey promoted through their network. The related materials (survey and graphics) were provided.

C4	Jarrold Stanley (KYDOT) and Chris Young (TXDOT)		Interviews were conducted with Jarrod Stanley (KYDOT) and Chris Young (TXDOT) on 6/2/2021 and with Kyle Mote on 6/9/21, Leta Huntsinger on 6/16/21, Stephanie Ivey on 6/17/21.
C4	Tamara Mandell, UF Center of Excellence for Regenerative Health Biotechnology	9/8/2021	Ms. Mandell has been working in workforce development for many years. We discussed the trends in workforce development in technical fields and their applicability to this project. Will be sharing the final report with her.

*Product Adoption*

There were 2 product adoptions during the reporting period. We anticipate additional product adoptions from Year 1 and Year 2 projects as they come to completion. Twelve products have been adopted or implemented to-date.

D2	Dr. Classen was a subject matter expert and developed the AARP Smart Driver Course Research and Guidebook. Older drivers that successfully complete this course will receive a reduced rate for their drivers insurance. Smart Driver Course available online at <a href="https://www.aarp.org/auto/driver-safety/">https://www.aarp.org/auto/driver-safety/</a>		
D2	Classen, S., & Alvarez, L. Driver Capabilities in the Resumption of Control (Chapter 10). (2020). In Donald L. Fisher, William J. Horrey, Michael A. Regan, & John D. Lee (Eds.), Handbook of Human Factors and Automated, Connected and Intelligent Vehicles. <a href="#">Link to publisher</a>		

## 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, and Year 5 List of Projects

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

## STRIDE Year 6 List of Projects

Year 6 projects are in the process of being discussed by the STRIDE Internal Steering Committee. They will be peer reviewed and those selected will be scheduled to begin early January 2022.

## 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	Lily Elefteriadou	5/7/2014	8/31/2019	completed
BDV31-977-44	Evaluation of Arterial Corridor Improvements and Traffic Management Plans in Florida	Lily Elefteriadou	6/11/2015	9/30/2019	completed
BDV31-977-45	Development and Testing of Optimized Autonomous and Connected Vehicle Trajectories at Signalized Intersections	Lily Elefteriadou	6/15/2015	11/15/2017	completed
BDV33-945-002	Transportation Safety Center	Maria Cahill	11/6/2015	12/31/2017	completed
BDV32-934-01	Improvements to the FDOT Travel Time Reliability Model for Freeway Analysis	Lily Elefteriadou	2/1/2016	7/31/2017	completed
BDV33-977-04	Local Technical Assistance Program for Transportation Agencies 2016-2017	Maria Cahill	9/29/2016	10/15/2017	completed
BDV33-977-05	Local Technical Assistance Program for Transportation Agencies 2017-2018	Matthew Muller	10/23/2017	8/31/2018	completed

BDV31-977-99	University of Florida (UF) Testbed Initiative- Alternative Transportation Safety Systems	Nithin Agarwal	5/7/2018	10/31/2020	completed
BDV31-977-109	Extended Development and Testing of Optimized Signal Control with Autonomous and Connected Vehicles	Lily Elefteriadou	3/26/2019	7/31/2021	completed
BDV31-977-115	Transportation Mobility Assessment and Recommendations for Smart City Planning	Lily Elefteriadou	6/10/2019	10/31/2021	ongoing
BDV31-977-120	Before and After Study of Gainesville Pedestrian-Bicyclists Connected Vehicle Pilot	Lily 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	Sherrilene 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	Siva 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	Siva 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
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**List of Cost Share Projects from STRIDE Partner Universities**

Microsimulation – Department Assessment and Guidance (BDV29 977-61)

PI: Dr. Mohammed Hadi, FIU

Sponsor: Florida Department of Transportation

Traffic Analysis Tools: Assessment, Comparison and Validation Study (2020-30)

PI: Dr. Nagui Rouphail, North Carolina State University

Sponsor: North Carolina Department of Transportation

Predicting Lane Change Intensity within Urban Interchange Influence Areas (RP 2019-29)

PI: Dr. Nagui Rouphail, North Carolina State University

Sponsor: North Carolina Department of Transportation

University of Alabama at Birmingham (UAB) – University Transportation Centers (ALDOT 930-998)

PI: Dr. Virginia Sisiopiku, UAB

Sponsor: Alabama Department of Transportation

UTC Research Initiatives for Reducing Congestion in Alabama and the Southeast U.S. - Year 3, Tasks 1 & 2 (ALDOT 931-029)

PI: Dr. Virginia Sisiopiku, University of Alabama at Birmingham

Sponsor: Alabama Department of Transportation