



GREENVILLE COUNTY COUNCIL MINUTES

COMMITTEE OF THE WHOLE

AUGUST 15, 2017

4:39 P.M.

COUNTY SQUARE – CONFERENCE ROOM D

COUNCIL MEMBERS

MR. BUTCH KIRVEN, CHAIRMAN

MR. WILLIS MEADOWS, VICE CHAIRMAN

MRS. XANTHENE NORRIS, CHAIRMAN PRO TEM

MR. JOE DILL

MR. MIKE BARNES

MR. SID CATES

MR. RICK ROBERTS

MR. BOB TAYLOR

MRS. LIZ SEMAN

MR. ENNIS FANT, SR.

MR. LYNN BALLARD

MR. FRED PAYNE LEFT THE MEETING @ 5:30 P.M.

Pursuant to the Freedom of Information Act, notice of the meeting date, time, place and agenda was posted on the bulletin board at the County Square and made available to the newspapers, radio stations, television stations and concerned Citizens.

STAFF PRESENT

Joe Kernell, County Administrator

Mark Tollison, County Attorney

Kimberly Wunder, Assistant County Attorney

John Hansley, Deputy County Administrator

Theresa Kizer, Clerk to Council

Regina McCaskill, Deputy Clerk to Council

Paula Gucker, Assistant County Administrator, Public Works

Shannon Herman, Assistant to the County Administrator

Bob Mihalic, Governmental Relations Officer

OTHERS PRESENT

Beverly James, Executive Director, Greenville County Library System

Sheriff Will Lewis, Sheriff's Office

Captain Damon Hubber, Emergency Preparedness Director

CALL TO ORDER

Chairman Butch Kirven

INVOCATION

Councilor Lynn Ballard

Councilor Payne asked if capacity limits had been set for the scheduled events.

Sheriff Lewis stated 95% of the venues were not charging fees for admission and there was no way to limit the number of people at the events.

Chairman Kirven asked about the extended weather forecast for Monday.

Captain Hubber stated Emergency Operations had a meteorologist on staff and added the forecast for Monday was for sunny skies.

Councilor Roberts asked if solar glasses were available.

Captain Hubber stated the public planned events would have solar glasses available.

Item (5)

MEMORANDUM OF UNDERSTANDING / CA4I

CA4I made a PowerPoint Presentation

**Greenville County Council
Committee of the Whole**

AGENDA

- Carolinas Alliance 4 Innovation:
 - What, Who (PPP), Why
- CA4I's First Innovative Transport Project
 - ACES Mobility and Greenville A-Taxi Shuttles
- Request for County Approval of MOU with CA4I

Who are CA4I Team Leaders?

- Executive Director, CU-ICAR (Ex-Officio)
 - Fred Cartwright
- City Council Member (approved by Mayor)
 - George Fletcher
- County Council Member (approved by GCC Chair)
 - Fred Payne
- IEEE Board/Smart City Initiative (approved by GCC Chair)
 - Lee Stogner
- GRAC Past Chair/CBRE Partner (approved by Mayor)
 - Doug Webster

What is CA4I?

- A **501.c.6 corporation** to promote **innovation for economic development** in Greenville County and across South Carolina
- A non-profit, public benefit entity
 - Model was Upstate SC Alliance
- Building public private partnerships
 - Public entities provide right-of-way access, supportive ecosystem, & regulations
 - Private funding to design, build, finance, operate & maintain innovative projects
 - Involving transportation, infrastructure, engineering and educational solutions
- A “consortium” of public and private partners
 - Voluntary, long-term, involved partners, engaged in planning and proactive project solutions
 - Public: local, state, federal
 - Private: corporate, foundation, non-profit

ACES Mobility and Greenville A-Taxis:

Deploying Proven Automated Electric Shuttles

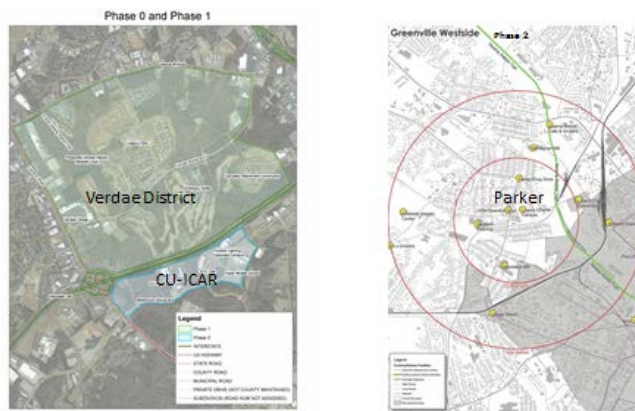
- Robotic Research, LLC (**RR**) is our initial technology partner
 - RR’s goal is to re-deploy proven military technology and show a successful business case in a Greenville commercial setting
 - Phase 0: Re-deploy in August 2017 autonomous electric Cushman 6 passenger vehicles from Fort Bragg, NC to Greenville
 - Greenville could become an R&D center and possibly an assembly location with Local Motors Olli



Two Major CA4I Private Partners

- **Global Autonomous Vehicle Partnership (GAVP)** challenged Greenville to raise an initial \$2M
- Goal: deploy **autonomous vehicles on public streets** in fall 2017 in automated mobility districts (**AMD**)
- GAVP chose Greenville over 3 major competitors
 - as the best mid-size Metro area to accelerate adoption of AV technology
 - to develop a “playbook” for AEV adoption around the world as soon as possible/ before 2040.
- **Robotic Research (RR)** is our first A-Taxi automation partner
- RR has committed vehicles, equipment and technology plus OpEx funding for 4-6 months: over \$1.5M in-kind & cash – Need for local cash funding
- RR supports staff for operations & engineering, automation of additional vehicles; as well as continuing technology operations and maintenance.
- They have chosen Greenville for their investment in 3 phases:
 - CU-ICAR District
 - Verdae District
 - Parker District

Deployment Phases and Districts



Why Greenville? Differentiating Factors for Innovation: A-Taxis and ACES Technologies

- **A Committed Community:** Greenville has become one of the most desired cities to live in the U.S. Public private partnerships, like CA4I, indicates community's desire to maintain and enhance its "most livable" status.
- **A welcoming business environment:** Many people report that Greenville welcomes innovative companies to do business here, unlike other locations where government red-tape discourages investment.
- **Partnerships:** Both the City and County of Greenville as well as numerous existing and potential corporate and non-profit entities are committed partners with CA4I and seek innovative smart mobility solutions.
- **Critical Assets:** Greenville possesses a unique confluence of physical and intellectual assets, focused on mobility. From BMW, Michelin and the attendant supply chain, to Clemson University, CU-ICAR, Greenville Tech, and an unparalleled K-12 STEM pedagogy, as well as real-life deployment sites at locations such as the International Transportation and Innovation Center (ITIC), the Greenville area is in a unique position to demonstrate breakthrough solutions.
- **Replicable, Scalable Solutions:** In a community like Greenville, solving real-world mobility problems like first/last mile connectivity to nearby daily activities and non-emergency medical transport calls to EMS, will have national impact.
- **Technical Talent:** Automotive engineering graduate students and faculty at CU-ICAR and CMI provide education, research, and development and are a pipeline of new talent for innovation. This includes an extensive array of research projects in ACES technologies at CU-ICAR also extends to the main campus of Clemson University. Private partners also provide automation and technology expertise, plus big data collection and analysis.
- **Workforce Development:** The key to economic, healthcare, and social development is workforce development that inspires and empowers people to get good-paying jobs. This A-Taxi and ACES mobility project models effective education and skill development.
- **Focus:** Innovation is the on-going focus of CA4I and sustainable mobility solutions are the initial focus.

Why does Greenville need a CA4I to create Innovative Public Private Partnerships

- New Mindset Needed – Weak Federal and State funding; Strong Counties and Cities have to provide leadership
- Greenville needs Innovative Public & Private Partnerships
 1. Public Infrastructure on ROW (roads, sewer, water, etc.)
 2. Public Planning regulations can support and accommodate
 - Increased Density awards for mixed income housing options
 - Lower Parking requirements for non-auto transport options
 3. Private investments Design, Finance, Build, & Operate
 - Automated shuttles at CU-ICAR, Verdae, Parker, Downtown
 4. Funds for Capital and Operations & Maintenance
 1. Farebox: People pay for convenient, comfortable, cost-effective solutions
 2. Sponsorships, Advertising
 3. Data has value, and can be monetized

CUMCAR
CLEMSON UNIVERSITY INTERNATIONAL CENTER FOR AUTOMOTIVE RESEARCH


Vehicle Performance and Automation

CLEMSON
AUTOMOTIVE ENGINEERING


Vehicle Dynamics and Control

Autonomous and Semi-Autonomous Vehicle Systems (ADAS)


Vehicle Connectivity (V2V, V2I)




Venkat Krovi




Piyerajal Pisu




Imtiaz Haque




Yanyu Jia




Beshah Ayalew



Andrej Ivancov



Clemson Multi-disciplinary Collaborative Research Team in Connected Vehicles



- Autonomous Vehicle Control:** P. Pisu, AuE, EC, E; Y. Jia, AuE; B. Ayalew, AuE; V. Krovi, AuE
- Roadway-User-Traffic Interaction:** M. Chowdhury, CE, AuE; A. Vahidi, ME; Y. Wang, ECE; J. McGregor, CS
- Data Analytics:** A. Apon, CS; S. Remy, CS; I. Safro, CS; L. Ngo, CCIT
- Networks and Cyber Security:** K. Wang, ECE; R. Brooks, ECE; J. Martin, CS; H. Hu, CS

South East RRIC at CML, Greenville, SC (Clemson-Greenville Tech shared space)



A network for engaging regional firms and startups, enabling shared capabilities, and supporting workforce development.




NEWSSTAND

1. Collaborative Robotics
2. Robot Control: Learning, Adaption and Repurposing
3. Dexterous Manipulation
4. Autonomous Navigation and Mobility
5. Perception and Sensing
6. Testing, Verification, & Validation

Recent National Recognitions:
US DEPARTMENT OF TRANSPORTATION CENTER DESIGNATION(S)


**Tier 1 University Transportation Center
(FY 16 Funding Amount \$1.4M)**

Research Led by Clemson University Could Help Revolutionize Transportation



Beyond Traffic Innovation Center


DOT announces Beyond Traffic Innovation Centers



Center for Connected Multimodal Mobility
Improving Mobility of People and Goods
Lead: Clemson University
Consortium Members: Benedict College, The Citadel, South Carolina State University, University of South Carolina

Serving the Piedmont/Southern Megaregion: Clemson University

South Carolina
A Perfect Laboratory for Transportation Innovations



Fastest growing region in the U.S.!!

Councilor Payne recused himself from discussion and voting on the item due to a potential conflict of interest. (Councilor Payne left the meeting at 5:30 p.m.)

ACTION: Councilor Seman moved to approve the Memorandum of Understanding between Greenville County and Carolinas Alliance 4 Innovation (CA4I).

ACTION: Councilor Taylor called the question. Without objection, the question was called.

Motion carried unanimously with one (Payne) written abstention.

Item (6) ADJOURNMENT

ACTION: Councilor Taylor moved to adjourn.

Motion carried unanimously and the meeting was adjourned at 5:34 p.m.

Respectfully submitted:

Theresa B. Kizer, Clerk to Council