



July 3, 2024

Avni Argun, Ph.D.  
CTO, Giner Labs  
89 Rumford Avenue  
Newton, MA 02466-1311

Dear Secretary Buttigieg,

I am writing on behalf of Giner, Inc. (Giner) to indicate our enthusiasm and interest in this Strengthening Mobility and Revolutionizing Transportation (SMART) grant application to develop a new dynamic electrochromic display device technology to improve traffic safety.

Giner is a Boston-based research and development firm committed to developing and commercializing cutting-edge electrochemical technologies. We leverage our over 50 years of experience in applied electrochemistry and electrochemical engineering to produce great ideas and exciting products. We commit to working with the City of Madison on this project.

Giner has a successful track record of developing novel prototypes using electrochromic technology. Previously we have been awarded SBIR funding by NASA and the Air Force (AFWERX) to build and test next generation dynamic eyewear and visual electrochromic devices. The program goals required uniquely shaped substrates that rapidly alter their opacity to provide maximum visibility in a wide range of ambient light conditions. The electrochromic laminates developed at Giner are processed at ambient conditions so adapting them for new form factors or scaled applications is straightforward. Additionally, we utilize a fully automated robotic spraying process that insures uniform coverage on the desired surface.

To support the project and its partners, Giner commits to the following:

**Development of a dynamically switching, electrochromic traffic sign prototype that will provide high optical contrast between its clear (see through) and dark (opaque) states.** We will demonstrate the feasibility of a device assembly that can be integrated into existing traffic signs to provide high dark-to-clear optical contrast, continuously variable operation, rapid switching, zero power use at any state (long optical memory), and low power requirements for each switch.

This commitment is new, specific, and measurable with the following operational requirements:

- Clear to dark electrochromic device on a plastic substrate in an outline of 6" x 10". Several clear plastic substrates will be utilized including PET and polycarbonate.
- >55% of transmittance change between on and off states in the visible spectrum to achieve high contrast.

**Giner, Inc.**

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- Full electro-optical characterization of the prototype devices.
- Outdoor operational capability and a wide range of operational temperatures ranging from -20 °C to 45 °C.
- Cycling capability of over 10,000 cycles.
- Rapid switching (<3 seconds).

Giner has extensive experience in designing, fabricating, and testing prototypes:

**Giner will leverage our state-of-the-art prototyping and manufacturing facilities to accomplish the goals outlined above.** Our facilities contain dedicated fabrication and assembly areas as well as a rapid prototyping lab with 3D printers, capable of extrusion and UV curing print processes, and CNC instrumentation. We have developed a custom UV/Vis spectroscopy test station to measure the optical performance, both absorbance and transmission, of our uniquely shaped switchable windows and devices. In addition, Giner's analytical potentiostats are capable of testing the electrochemical function of the devices and record the resulting data. We also have temperature controlled ovens, humidity saturators, and vacuum/pressure chambers to simulate environmental conditions that the traffic signs are eventually expected to encounter.

We are pleased to participate on this application and excited to work together with the proposing team. We are confident that we can utilize our prior experience in electrochromic technologies to explore the feasibility of dynamically switching traffic signs with the specifications detailed above.

Upon funding of this effort, Giner will perform the activities listed above under a contract at a total cost of \$215,000 for 18 months. In addition to this letter of commitment, we are also providing you with budget information and key personnel biographies. Please do not hesitate to contact me if you have any questions.

Sincerely,

Avni Argun, Ph.D.  
CTO

Andrew Belt  
President and CEO

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**College of Engineering**  
UNIVERSITY OF WISCONSIN-MADISON

July 9, 2024  
Pete Buttigieg  
United States Secretary of Transportation  
U.S. Department of Transportation  
1200 New Jersey Ave, SE  
Washington, DC 20590

RE: Letter of Commitment for the 2024 SMART Grant Program: City of Madison

Dear Secretary Buttigieg:

I am writing on behalf of the University of Wisconsin – Madison Traffic Operations and Safety (TOPS) Laboratory which is a key stakeholder in the Park Street corridor project. We commit to working with the City of Madison on their project – Putting People First: Improving Vulnerable Roadway Users Safety through Proactive and Predictive Smart City Technologies.

To support the project and its partners, the University of Wisconsin – Madison TOPS lab commits to the following:

- Work closely with City of Madison staff and other partners to engage residents along the corridor to improve the outcomes of the project and ensure its efforts are equitable beneficial to all roadway users on the corridor.
- Provide technical assistance to the project team to improve the project's outcomes and the likelihood of successfully scaling the project's applications to other roadways in Madison and Wisconsin.

This commitment is new, specific, and measurable in the following ways:

- UW TOPS Lab has been a partner on the Park Street Smart Corridor since its creation. This project will revitalize the corridor with new technologies and applications that will both showcase emerging connected vehicle technologies and focus on solving an important and timely issue for the University's students and employees and community at large.
- This project engages a cross-discipline collection of faculty and staff to provide complementary solutions to address this complex issue.
- The project team will engage our University partners as key stakeholders on the corridor to aid in the development and testing of the team's applications.

Please give this 2024 SMART Discretionary Grant proposal your full consideration and if I can answer any questions, please do not hesitate to contact me. I may be reached at (608) 265-1882 or [danoyce@wisc.edu](mailto:danoyce@wisc.edu).

Sincerely,

David A. Noyce, Ph.D., P.E., F. ASCE, F.ITE  
Arthur F. Hawann Professor, Department of Civil and Environmental Engineering  
Executive Associate Dean, College of Engineering  
Director, Traffic Operations and Safety Laboratory



**Wisconsin Department of Transportation**  
Office of the Secretary  
4822 Madison Yards Way, S903  
Madison, WI 53705

**Governor Tony Evers**  
**Secretary Craig Thompson**  
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July 2, 2024

The Honorable Pete Buttigieg  
Office of the Secretary of Transportation  
U.S. Department of Transportation (DOT)  
1200 New Jersey Avenue, SE  
Washington, DC 20590

RE: Letter of Commitment for FY 2024 SMART Grant Program: City of Madison

Dear Secretary Buttigieg:

I am writing on behalf of the Wisconsin Department of Transportation (WisDOT), which is responsible for planning, building, and maintaining Wisconsin's highways. Park Street in Madison, which is included in this proposal, is partially part of the US 151 system. The City of Madison and WisDOT have joint jurisdiction over Park Street from Regent Street to US 12. We commit to working with the City of Madison on their project – Putting People First: Improving Vulnerable Roadway Users Safety through Proactive and Predictive Smart City Technologies.

To support the project and its partners, the Wisconsin Department of Transportation commits to the following:

- Providing technical assistance and advice to the project team as a key stakeholder to improve the project's outcomes and the likelihood of successfully scaling the project's applications to other roadways in Madison and Wisconsin.
- Modifying policy, if needed and appropriate, to allow the prototyping of the project's applications on public highways in Wisconsin.
- Provide independent evaluation of the long-term benefits of the project applications.

This commitment is new, specific, and measurable in the following ways:

- As the entity responsible for Wisconsin highways, including US 151, WisDOT has a key stake in ensuring the project's applications are appropriate and successful in reducing the chance of traffic conflicts for vulnerable road users on the State's public roadways.
- WisDOT has been a partner on the Park Street Smart Corridor since its creation in 2018. This project will revitalize the corridor with new technologies and applications that will both showcase emerging connected vehicle technologies and focus on solving a current issue that is at the heart of the Department's mission to develop a safe and efficient transportation system.
- The Department will reduce barriers for experimentation and scaling these technologies to make the most and fastest use of their application in the State.

I support the City of Madison's application for the funding of Putting People First: Improving Vulnerable Roadway Users Safety through Proactive and Predictive Smart City Technologies project and look forward to the infrastructure investment in our region through the Bipartisan Infrastructure Law. Please give this FY 2024 SMART Discretionary Grant proposal your full consideration and if I can answer any questions, please do not hesitate to contact me. I may be reached at 608-266-1114 or [DOTExec@dot.wi.gov](mailto:DOTExec@dot.wi.gov).

Sincerely,



Craig Thompson  
Secretary