

APPENDIX 2 - SUMMARY BUDGET NARRATIVE

The City of Madison is requesting \$1,980,500 for the Stage 1 SMART Grant project. This funding will be divided between subconsultants and the procurement of equipment for the prototype deployments. An approximate project cost per task is provided below in Table A.2-1.

Task Description	Total
Task 1: Planning and Design	\$78,000
Task 2: Development	\$738,000
Task 3: Field Testing	\$960,500
Task 4: Evaluation and Reporting	\$80,000
Task 5: Workforce Development	\$124,000
Project Total	\$1,980,500

Table 1 Table A.2-1. City of Madison Stage 1 SMART Grant Budget per Task

Based on the relevant context for each location, different technologies will be deployed at different locations along the corridor, as shown in Figure 1 of the project narrative. An estimate of the planned costs for each of the prototypes is included in Table A.2-2.

ID	Name	Personnel	Fringe Benefits	Travel	Equipment	Supplies	Contractual	Construction	Total
1	Real-time conflict prediction and communication at signalized intersections	\$50,000	\$14,000	\$2,000	\$240,000	\$5,000	\$596,000	\$0	\$907,000
2	Real-time presence detection and communication at unsignalized intersections	\$36,000	\$8,000	\$2,000	\$220,000	\$5,000	\$802,500	\$0	\$1,073,500

Table A.2-2. City of Madison Stage 1 SMART Grant Budget by Application and Category

Personnel and Fringe Benefits

All City of Madison personnel and fringe benefit costs are directly proportional to the planned hours needed for each prototype. Eligible project personnel include traffic engineers, traffic signal technicians, and IT staff.

Travel

The City has budgeted for two in-person meetings in Washington, D.C. to aid in information sharing.

Equipment

The equipment for each prototype will initially be procured, assembled, and tested by the UW-TOPS and Giner Inc. teams in lab and test environments. Once a functioning prototype is developed, it will be tested on the Park Street corridor. After the initial field testing is complete in Task 2, the City

will procure equipment to develop additional prototypes along the corridor; the Project team will assemble the prototypes in Task 3.

Tables A.2-3, A.2-4, and A.2-5 demonstrate the City of Madison's equipment costs by intersection type. The Project team has identified numerous potential vendors that could fulfill the functions of PeopleFirst. If awarded, the City will ultimately select vendors following its established [procurement guidelines](#). The Project team has identified potential vendors as follows:

- Three potential vendors for **LiDAR**-based solutions include Seoul Robotics, Transoft Solutions, and Ouster Bluecity. These vendors provide a system designed to provide comprehensive tracking trajectories for VRUs.
- Two potential vendors for **Multimodal**-based solutions include Teledyne FLIR and Image Sensing. These vendors can provide the position, speed, and heading data of multimodal travel.
- Six potential vendors for **Video**-based solutions include IndustrialEnet, Ominbond TrafficVision, Citilog, Remark Holdings, I2vsys, and Miovision.

Traffic Signal	Per Location	Total Cost
Materials & Supplies	\$10,000	\$20,000
Communications	\$5,000	\$10,000
Signage	\$40,000	\$80,000
LiDAR Sensor	\$20,000	\$40,000
Optical Sensor	\$15,000	\$30,000
Thermal Sensor	\$15,000	\$30,000
Computing	\$10,000	\$20,000
Subtotal	\$115,000	\$230,000

Table A.2-3. City of Madison Stage 1 SMART Grant Equipment Costs for Traffic Signals

Rectangular Rapid Flashing Beacon	Per Location	Total Cost
Materials & Supplies	\$5,000	\$10,000
Communications	\$3,000	\$6,000
Signage	\$25,000	\$50,000
Thermal Sensor	\$15,000	\$30,000
Optical Sensor	\$3,000	\$6,000
Radar Sensor	\$6,000	\$12,000
Computing	\$2,000	\$4,000
Subtotal	\$59,000	\$118,000

Table A.2-4. City of Madison Stage 1 SMART Grant Equipment Costs for RRFBs

Non-signalized Intersection	Per Location	Total Cost
Materials & Supplies	\$5,000	\$10,000

Communications	\$3,000	\$6,000
Signage	\$15,000	\$30,000
Thermal Sensor	\$15,000	\$30,000
Optical Sensor	\$3,000	\$6,000
Radar Sensor	\$6,000	\$12,000
Computing	\$2,000	\$4,000
Subtotal	\$49,000	\$98,000

Table A.2-5. City of Madison Stage 1 SMART Grant Equipment Costs for Non-signalized Intersections

Contractual

Contractual costs include equipment and staff for four subconsultants:

- UW TOPS Lab
 - » Development and testing of all prototypes.
 - » Data and performance reporting of all prototypes.
- Giner Inc.
 - » Development and testing of electrochromic film to be used in prototype #2.
- Madison Area Technical College
 - » Workforce development
- Engagement Consultant
 - » Ensure continuous community engagement for all prototypes during the project.
 - » Develop the training needed to support the scaling of prototypes.
 - » Identify the necessary steps to ensure the prototypes can create high-quality jobs.
 - » This consultant has not been selected and these services will be solicited in accordance with Federal regulations if this application is awarded grant funding.
- Signal Vendor/Contractor
 - » Configuration and delivery of traffic signal equipment needed for prototypes #1.
 - » This vendor/contractor has not been selected and these services will be solicited in accordance with Federal regulations if this application is awarded grant funding.