

Request for Research Funding for FY 2021-2022

Requesting Office	State Traffic Engineering and Operations Office	Priority	15 of 15
Proposed Title	Alternative Signal Detection for Underserved Customers		
Justification	Small vehicles (motorcycles), pedestrians and bicycles are rarely detected at signalized intersections. Research an alternative method to trigger the signal presence detector, if a Bluetooth signal is detected for 90 seconds, have the traffic signal cycle through all phases). The research is needed to serve all transportation corridor customers. This topic touches the Vital Few; improve safety, enhance mobility and inspire innovation.		
Impact	If inductor loops are not supplemented; motorcycles, bicycles and pedestrians may be forced to cross on the red signal. This action is unsafe and limits mobility. Another option for underserved users is U-turns and right turn only. Most local Tallahassee signals need adjustment (Blair Stone, Paul Russell, Orange, Old St. Augustine). US 90, 27 & 319 have radar or video detection.		
Affected Offices	State Traffic Engineering and Operations Office, State Safety Office, District Traffic Operations Offices		
Existing Work	Public Roads - Making Signal Systems Work for Cyclists , May/Jun 2008 - FHWA-HRT-08-004 (dot.gov).		
Keywords Used In Existing Work Search (Cannot leave blank)	Motorcycles, signals, bicycles		
Related Contracts (Give contract numbers)			
Funding Request	\$80,000	Anticipated Duration	12 Months
Project Manager	James Landini	Contracting Method	RFI
Urgency	1	Underserved users are crossing on the red phase.	
Implementability	1	If an alternative, low cost detector is found, then all traffic signals could be supplemented. If proven successful could increase safety and the usability of existing infrastructure.	

Project Benefits (Succinct, complete explanation)

If a signal only has inductive loops to trigger the signal, the pedestrians, bicyclists, and motorcyclists are stranded. Those users have to wait until a vehicle will adopt them, or they choose to cross, make u-turns, or an improper righthand turn during the red phase. Most users carry a device with a Bluetooth signal. Hopefully, this research idea can find a simple Bluetooth detection device, which can be devised at a low cost, to supplement the sensor collection data of the inductive loop detectors.

An alternative detection device would improve safety to the Department’s underserved customers by providing a signal phase to promote safe travel. This alternative detection would promote mobility by allowing the users to safely travel in the intended direction. This alternative detection is also an innovative method to detect and protect road users.

If the alternative detector is proven successful, we will have found a low-cost way to improve the functionality of existing inductive loop system - further enhancing the return on the Department’s investment. However, the real benefit will be in providing safe passage to motorcyclists, bicyclists, and pedestrians who are currently crossing at unsafe times because they feel the Department’s existing system does not acknowledge them.

Project Benefits (Select all that apply and explain)	Quantifiable Benefits (units, dollars, etc...if applicable)	Methodology or Data Sources Used to Determine Quantifiable Benefits. If not applicable, please give justification of project benefits
○ Materials Enhancement		
○ Materials Savings		This would be a low cost upgrade to an existing system. Anecdotal, the surface mount Bluetooth detectors would require less materials and labor to install. A road cut and sealant wouldn't be required since the life of the existing system would be extended.
○ Time Savings		Anecdotal, User saves time by receiving a turn at the signal phase. Less vehicle-pedestrian crashes would also result in fewer unplanned delays, secondary crashes, and road closures.
○ Lives Saved/Injuries Prevented		Anecdotal, if user receives a turn at the signal phase, the user would cross on the protected phase.
○ Other (Explain)		

*Comments should explain and support urgency, financial benefit, and implementability scores