Request for Research Funding for FY 2022-2023			
SPR Subpart B Project: TEO-23-09			
Requesting Office	Traffic Engineering and Operations Office	**Priority High**	9 of 23
Proposed Title	Developing Data Sources and Standards for Supporting Arterial TSM&O Implementation of the Statewide Arterial Management Program (STAMP)		
Justification	FDOT districts are at different phases of data needs and availability. Per the 2021 Statewide Arterial Management Program Action Plan data management focus area, data integration is needed to strive to reach the highest readiness to identify the performance measures of the various needed strategies for mobility effectiveness and safety enhancement. FDOT Central Office has set clear priorities which drive data needs, however, due to local conditions the architecture to achieve this may vary for each district. This research will summarize the existing conditions, program objectives, and then determine gaps to achieving this objective District by District. The results will be summarized for consideration along with their impact on operations.		
Impact	The data platform will help FDOT conduct careful planning and setting priorities for achieving optimum allocation of resources with the most impact. Upon FDOT acceptance of the outcome of this project, the results would be the prelude or basis to the implementation of a statewide or district specific data analytics engine.		
Affected Offices	Traffic Engineering and Operations Central Office TSM&O Engineers at the seven (7) FDOT Districts and FTE		
Existing Work	Many of the TSM&O strategies such as AAM, ICM, ATSPM, ASCT, etc. have been investigated in many states including Florida. UCF has been working with Dist. 5 on ICM and implementation of ATSPM in several applications. UF has conducted an earlier assessment of ASCT. However, none of these studies is comprehensive and identified the data, priorities, needs, and implementation for the various districts.		
Keywords Used In Existing Work Search	SunGuide Data, Data Platform, TSM&O; AAM; ICM; ATSPM; ASCT; LPI; Mobility; Safety; STAMP		
Related Contracts	None		
Funding Request	$135,000	**Anticipated Duration**	18 months
Project Manager	Raj Ponnaluri, PhD, PE, PTOE, PMP	**Contracting Method**	Direct contract with the University of Central Florida (Dr. Aty)
Equipment	Estimated equipment cost (or N/A)	None	
Urgency	1	This project would be the first step and will lay the foundation for efforts to determine implementation of a data analytics platform for all districts. The earlier it could start the earlier Districts would start to implement performance assessment of existing conditions and various TSM&O strategies to improve their arterials' mobility and safety.	
Implementability	5	As stated above, this project is a first step toward resource allocation and implementation, and it is essential for the seven (7) FDOT districts. Data Aspects, availability, performance measures, assessment of each districts data and systems, and the relevance of each strategy to each district will be achieved.	

Project Benefits (Succinct, complete explanation)

The Florida Department of Transportation's (FDOT) have an existing Statewide Arterial Management Program (STAMP) Action Plan in place. STAMP Action Plan is part of the State of Florida's Traffic Engineering and Operations Office (STEOO) and closely collaborates with the Transportation Systems Management and Operations (TSM&O) program, District TSM&O Program Engineers, and arterial management engineers.

STAMP Action Plan provides goals, objectives, and required actions in the following five focus areas for Arterials: Infrastructure Upgrades, Data Management, Performance Assessment, Emerging Technologies, and Operations & Maintenance. The STAMP Action Plan provides outcome-based actions intended to guide the collective arterial management efforts. It documents past progress encouraging the exchange of experiences, collaboration, and coordination. The outcome-based actions in the STAMP Action Plan were developed in support of the FDOT 2017 TSM&O Strategic Plan and 2019 Connected and Automated Vehicles (CAV) Business Plan.

PROJECT OBJECTIVES

- Evaluate the various data sources and systems implemented at each district.
- Establish a platform for data collection and utilization based on best practices at the various districts.
- Learn from the best implementations to generalize and provide value to other districts, e.g., some of the districts have long been leading many efforts for data collection (ICM, ATSPM, etc.) and using it for various performance measures which in turn help in assessment and improvement on arterials.
- Assist districts in evaluating the appropriate strategy that they could consider implementing
- Help FDOT plan accordingly based on priorities and available resources.
- Help achieve uniformity in data collection and utilization among the 7 FDOT Districts, which will help in implementation and efficiency in future projects.

Supporting Tasks and Deliverables:

- Identify and summarize all applicable data sources, TSM&O strategies, and performance measures.
- Prepare detailed survey to Districts, potentially also meetings with TSM&O Districts Engineers.
- Identify the best practices for data and management strategies among districts
- Comprehensive review and summary of surveys

The project involves developing data analytics platform and plan of scaling the state-of-the-art and practice to the various districts to achieve the most benefit, consistency, and efficiency. It will include the characteristics of an arterial management program that would support the successful implementation of considerations of the data needs for implementing arterial strategies. The plan will also include a framework of requirements for how performance assessment reporting for safety and mobility historically and in real-time could be achieved.

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	Data platform	Identify and streamline data needs
○ Materials Savings		
○ Time Savings	Aggregate savings in minutes per hour per intersection	• Reduce delays • Improve mobility • Improve travel time reliability
○ Lives Saved/Injuries Prevented	Lives and injuries	• Improve Safety • Improve Pedestrian's compliance rate
○ Other (Explain)	Efficiency implementation of various technologies, and the future deployment of CV	Implementation of the proven strategies in the most effective ways based on clear needs and priorities. Preparing for the advent of CAV

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