Request for Research Funding for FY 2024-2025			
Project Number (Research Center Use Only): SIO-25-01			
Requesting Office	Systems Implementation	**Priority**	#1 of #1
Proposed Title	Developing Guidelines for Implementing Managed Lanes Strategies on Arterials		
Justification	**Background:** "Managed lanes" are defined as highway facilities or a set of lanes where operational strategies are proactively implemented and managed in response to changing conditions[1]. The concept is typically a "freeway-within-a-freeway" and is often applicable to limited-access facilities. Most commonly deployed managed lanes are express lane facilities on freeways (e.g., 95 Express, I-595, etc.). However, arterial corridors could also benefit from the concept of managed lanes such as concurrent flow High Occupancy Vehicle (HOV) lanes, contraflow HOV lanes, dedicated transit-only lanes, dedicated truck-only lanes, etc. While travel along managed lanes on freeways is generally smooth and efficient, the arterials connecting the freeways (i.e., at the on-ramp and off-ramp) are often choked with congestion, both recurring and non-recurring. As such, the overall safety and operational benefits of the managed lanes at the network level are often not realized. Moreover, the 2023 FDOT Managed Lanes Guidebook (MLG) focuses primarily on limited-access facilities, and most of the strategies discussed in this Guidebook do not directly apply to arterials. Research is therefore needed to provide the Department with the necessary guidance and resources to implement managed lanes strategies on arterials. **Goal and Objectives:** This research effort aims to develop and recommend deployable managed lanes strategies on arterials. The specific objectives include: 1. Identify feasible managed lanes strategies on arterials 2. Identify suitable arterial corridors for deploying managed lanes strategies 3. Quantify the performance of managed lanes strategies on arterials **Research Tasks:** The objectives will be achieved through the following tasks: *Task 1 – Conduct State-of-the-practice Review of Managed Lanes Strategies on Arterials:* This task will have two subtasks: (a) the research team will administer a nationwide survey of the state DOTs to collect information about deploying managed lanes strategies on arterials; and (b) the research team will conduct an in-depth literature review on the performance measures and benefits (both quantitative and qualitative) of arterial managed lanes strategies. *Task 2 – Develop Research Approach:* This task will focus on developing a research approach to achieve the study goal and objectives. As a first step, the research team will identify the potential data needs, sources, and performance metrics that could potentially be included in the analysis. The research team will also investigate the feasibility of deploying different managed lanes strategies on arterials in Florida. *Task 3 – Develop Criteria to Select Arterials for Deploying Managed Lanes Strategies:* Not all arterials will be suitable for deploying managed lanes strategies. The suitability will depend on roadway geometry, intersection characteristics, traffic volumes, pedestrian and bicyclist activity, transit accessibility, network connectivity, etc. This task will attempt to develop a selection matrix to assist in selecting the most suitable strategy for the given arterial corridor. *Task 4: Quantify the Benefits of Managed Lanes Strategies:* In this task, the research team will work with the districts and transit agencies to identify sample arterial corridors suitable for deploying managed lanes strategies. Priority will be given to the arterial corridors that connect to the existing managed lanes facilities on freeways. Microsimulation models will be developed to quantify the benefits of these arterial managed lanes strategies.		
Impact	Managed lanes strategies on arterials could alleviate congestion at the network-level. This project will provide the Department with the necessary resources to implement several managed lanes strategies on		

[1] Managed Lanes: A Primer - FHWA Office of Operations (dot.gov)

	arterials. If this research is not conducted, the Department will miss out on the opportunity to improve the operational performance of the transportation network by deploying managed lanes on arterials.		
Affected Offices/ Districts	Systems Implementation Office; State Traffic Engineering and Operations Office; State Safety Office		
Existing Work	None		
Keywords Used In Existing Work Search (Cannot leave blank)	• Managed Lanes Arterials: none • Managed Lanes: 26 records – none are related to arterials • Arterials Strategies: 19 records – none are related to managed lanes strategies on arterials		
Related Contracts (Give contract numbers)	BDV32-977-01: This project was completed in 2015. It discussed the deployment strategies of managed lanes on arterials. The proposed research extends this work by focusing on the implementation plan for selecting and deploying managed lanes strategies on arterials.		
Funding Request	$165,000	**Anticipated Duration**	24 months
Project Manager	Jenna Bowman FDOT Systems Implementation Office	**Contracting Method**	Direct contract with Florida International University
Equipment	Estimated equipment cost	N/A	
Urgency	1	Managed lanes on freeways are increasingly being deployed across Florida. Since managed lanes strategies are not currently being adopted for the arterials, the "network-level" congestion is not improving. This research project will assist the Department in alleviating congestion at the network level by recommending deployable managed lanes strategies on arterials, particularly those that are close to the freeway managed lanes.	
Implementability	1	The research results will be readily implementable. The Department could use the results as they become available.	

Project Benefits (Succinct, complete explanation)

This research effort will provide the Department with the necessary resources to identify and recommend deployable managed lanes strategies on arterials. The project will help the districts choose the most suitable arterial corridors and the type of strategies for implementation.

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**
o Materials Enhancement		
o Financial Impact		
o **Time Savings**		Managed lanes strategies on arterials improve mobility for all road users (i.e., motorists, pedestrians, bicyclists, and transit users). This project will equip the Department with the necessary resources to deploy managed lanes strategies on arterial corridors.
o **Lives Saved/Injuries Prevented**		Managed lanes strategies on arterials improve safety for all road users (i.e., motorists, pedestrians, bicyclists, and transit users). This project will equip the Department with the necessary resources to deploy managed lanes strategies on arterial corridors.
o Other (Explain)		

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