Request for Research Funding for FY 2023-2024			
Project Number (Research Center Use Only): SMO-24-08			
Requesting Office	SMO	**Priority**	8 of 12
Proposed Title	Enhancement of Traffic Control Tool for Reopening of Flooded Roadways		
Justification	This project aims to enhance the current methodology to determine when to reopen a roadway after a flooding event. The present methodology solely examines the subgrade modulus from the FWD test to make the determination. The singular input parameter may not be enough to accurately estimate the structural capacity of the pavement system, making the determination less reliable. An enhanced traffic control methodology, that provides reliable traffic control guidelines, is necessary to minimize accelerated damage and maintain the design service life of the flooded pavement. The updated methodology will examine the base modulus and perhaps the asphalt pavement modulus, in addition to the subgrade modulus.		
Impact	The outcome of this research would help prevent accelerated damage to the pavement foundation and maintain the design surface life of a flooded roadway. The subject research would align with the State of Florida's Resiliency Program.		
Affected Offices	State Materials Office (Pavement Evaluation and Geotechnical sections); District Materials Office; District Maintenance Office; District Pavement Design Office.		
Existing Work	A previous FDOT-funded study with Applied Research Associates examined FWD data of the subgrade. Other national work has been performed related to the non-destructive testing of flooded pavements and will be good reference material. The use of native limerock for the base layer is unique to Florida and will have to be specifically studied to address the roadways in Florida.		
Keywords Used In Existing Work Search **(Cannot leave blank)**	Flooded pavements; FWD testing of flooded pavements; Evaluation of flooded pavements; Damage assessment of flooded pavements.		
Related Contracts (Give contract numbers)	000641 FDOT Flood Road Restrictions		
Funding Request	$240,000	**Anticipated Duration**	24 months
Project Manager	Guangming Wang	**Contracting Method**	RFP
Equipment	Estimated equipment cost (or N/A)	N/A	
Urgency	Score 1-5 1= highest, most immediate need	3 Flooded pavements are becoming more common, but this research is not yet to the level of a 1 or 2 urgency.	
Implementability	Score 1-5 1= greatest likelihood of and proximity to implementing results	1 The outcome of this research is a decision matrix tool that State Materials Office staff will use to assess flooded pavements. Implementation is highly likely.	

Project Benefits (Succinct, complete explanation)

As more flooding events occur in Florida, the Department needs an updated pavement evaluation methodology to assess the weakened pavement structure after a flooding event to protect the pavement structure from heavy traffic loads. The implementation of the project findings would enable the Department to save on maintenance and rehabilitation costs.

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	Extension of pavement service life	The outcome of this research will provide a tool for determining when a pavement can be reopened to traffic after flooding to prevent accelerated damage. Anticipated service life extension resulting from the suggested traffic control would be calculated.
o Materials Savings	Extension of pavement service life	Unnecessary maintenance/rehabilitation due to premature failure would be avoided by utilizing the enhanced traffic control tool.
o Time Savings	N/A	
o Lives Saved/Injuries Prevented	N/A	
o Other (Explain)	N/A	

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