Request for Research Funding for FY 2020-2021			
Requesting Office	SMO G8, P2	**Priority**	#2 of 10
Proposed Title	Improved Resilience of Asphalt Pavements Due to Flooding		
Justification	Rising seawater levels and other nuisance flooding continues to impact Florida's roadways. Governor DeSantis has asked the Department to improve the resilience of Florida's transportation system. 97.4% of the Department's highway system is paved with asphalt. This study will determine implementable, cost-effective methods to improve the resilience of asphalt pavements with respect to flooding. Of particular importance is to evaluate the resilience of asphalt pavement that is loaded while inundated with water. Traffic is still maintained on flooded roadways in some locations and it is imperative to determine the effects on pavement for this condition and explore additional strategies to mitigate these effects.		
Impact	The findings of this research will recommend improvements for asphalt mixtures that are subject to flooding. If the research is not performed, Florida's highway system will remain more prone to the effects of flooding. This research will focus on the asphalt portion of the pavement structure and improving asphalt mixture properties to resist the impacts of flooding. Other research projects will focus on the remaining portions of the pavement structure (base, subgrade, embankment).		
Affected Offices	Materials, Design, Construction, Maintenance.		
Existing Work	TRID was reviewed and there has been some work done on the evaluation of inundated asphalt pavements, however no research has been conducted utilizing Florida Limestone mixtures or using the Cyclic Pore Pressure Conditioning (CPPC) device invented by the University of Florida. This device will be invaluable in evaluating the impact of cyclic loading on flooded pavements.		
Keywords Used In Existing Work Search **(Cannot leave blank)**	flooding, asphalt, pavements		
Related Contracts (Give contract numbers)	This work is a continuation of a previous UF project, BC354-11. In this project, the Cyclic Pore Pressure Conditioning (CPPC) device was invented. However, it was not used to evaluate the impact of flooded pavements.		
Funding Request	$240,000.00	**Anticipated Duration**	24 months
Project Manager	Greg Sholar	**Contracting Method**	Direct contract with the University of Florida
Urgency	Score: 2	The results of this project will minimize road closures and repairs of asphalt pavements due to flooding. These types of distressed pavements are starting to show up.	
Implementability	Score: 1	It is speculated that the research will identify certain chemicals that can be added to asphalt to make asphalt less susceptible to flooding and/or it will recommend improved asphalt mix design and construction methods to make asphalt more durable to the effects of water.	

Project Benefits (Succinct, complete explanation)

This project will improve the durability of asphalt pavements to better resist deterioration due to flooding. Of special importance is to improve the durability of these pavements that are trafficked while flooded.

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	Longer lifespan. Less resurfacing cycles.	The research will be able to distinguish, through lab testing, which material/construction enhancements are better able to resist damage due to flooding. The research may be able to give an estimation of the improved lifespan of more durable pavements.
o Materials Savings	Not applicable.	
o Time Savings	Less resurfacing cycles.	Less disruption to the public if resurfacing cycles are less frequent.
o Lives Saved/Injuries Prevented	Not applicable.	
o Other (Explain)		

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