Request for Research Funding for FY 2021-2022			
Requesting Office	SMO	**Priority**	# 10 of # 10
Proposed Title	Factors that influence the variability of concrete surface resistivity of field cast samples		
Justification	Significant differences have been observed between concrete surface resistivity (SR) values measured by the contractor QC and the FDOT Verification Testing. It is known that the weather (temperature, humidity) can influence the surface resistivity measurement, particularly if the sample spends too much time outside of storage and the sample starts to dry. Another factor that causes variability is operator error. The effects of these and other factors need to be identified and investigated. Analysis should include correlating the bulk resistivity to SR (geometry corrected values [Morris/Sagues]) as well as measurement of the concrete pore solution conductivity (on field cast samples brought to the lab).		
Impact	Improving the reliability of concrete SR as an indication of permeability is vital as the Department continues to implement this test as acceptance/performance criteria for high quality concrete where structural durability is critical.		
Affected Offices	Materials, Construction		
Existing Work	None		
Keywords Used In Existing Work Search **(Cannot leave blank)**	Surface Resistivity Variability		
Related Contracts (Give contract numbers)	None		
Funding Request	$150,000	**Anticipated Duration**	18 months
Project Manager	Elizabeth Weber/Richard DeLorenzo	**Contracting Method**	RFP
Urgency	3	As the Department continues to use surface resistivity to determine concrete quality, the known variability in readings due to temperature and moisture must be assessed.	
Implementability	2	Implementation of improved testing procedures is highly probable after assessing variability in differing test conditions.	

Project Benefits (Succinct, complete explanation)

Quantifying the variability of surface resistivity readings under differing conditions will allow improved correlation between VT and QC samples.

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	None	
○ Materials Savings	None	
○ Time Savings	Days	Improved correlation between VT and QC test results will eliminate the need for additional resolution testing.
○ Lives Saved/Injuries Prevented	None	
○ Other (Explain)	None	

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