Request for Research Funding for FY 2019-2020			
Requesting Office	Policy Planning	**Priority**	1 of 1(projects may not have the same ranking – no ties)
Anticipated timeframe for submitting project scope (if approved)			02/2019
Proposed Title	Development of the Resilience Index for the Florida Transportation System		
Justification	The Florida Department of Transportation (FDOT) set a 50-year vision as well as a 25-year set of policies to ensure state resources will be strategically used to achieve goals in seven areas, and infrastructure resiliency is one of the goals for the Florida transportation system. To achieve this goal, FDOT will plan and implement multiyear transportation projects to enhance regional transportation assets and mitigate the consequences of any service disruption in the event of a disaster occurrence. In anticipation of the increasing frequency and intensity of coastal hazards, FDOT needs to quantitatively measure and monitor the resilience of regional transportation assets so as to prioritize candidate investments for resilience enhancement over a multiyear period. To better inform resilience planning, the Office of Policy Planning will employ researchers to identify factors critical to the resilience of Florida's regional transportation infrastructure; develop a resilience index for the transportation assets that reflects the regional demographic, economic, and environmental features of Florida; and track and evaluate the transportation resilience of the Florida transportation system from a project level up to the state level.		
Impact	Measuring transportation resilience is a multifaceted and complex process due to the large number of relevant multidimensional regional factors. Existing indicators, which are based only on the physical conditions of transportation assets, are not robust enough to provide information about resilience. Such indicators shall represent the ability of transportation assets to not only withstand the physical impacts of coastal hazards but also adapt to and recover from their impacts without substantial reduction in the serviceability of regional transportation. Having the capability to track and evaluate the resilience of regional transportation infrastructure would enable FDOT to prioritize vulnerable transportation assets for improvement as well as quantitatively evaluate the effectiveness of past and ongoing policies and programs with respect to FDOT's resilience goal.		
Affected Offices	This proposed project will potentially benefit a range of FDOT Offices and stakeholders, including: • FDOT Office of Policy Planning • FDOT Forecasting and Trends Office • FDOT Systems Implementation Office • FDOT Office of Maintenance • FDOT Office of Environmental Management • FDOT Emergency Management Office • Metropolitan Planning Organizations • Various local city and county departments and regional planning councils throughout the State of Florida		
Existing Work	There is no similar research supported by FDOT for fiscal year 2019/2020.		
Funding Request	$190,000	**Anticipated Duration**	20 months
Project Manager	Jennifer Z. Carver	**Contracting Method**	Direct contract with the Florida State University
Urgency	Score 1	More than 98% of the state's population resides in coastal counties (i.e., causing high coastal risks). In the 2015 Florida Transportation Plan (FTP) Policy Element, FDOT highlighted infrastructure resiliency as one of Florida's transportation system goals and identified indicators representative of resilience as worthy of observation. However, these existing indicators only represent physical robustness and fail to capture the holistic phenomenon of resilience. Such deficient measures may be misleading policy makers as they develop resilience-related policies and programs. Therefore, the development of an appropriate resilience indicator is an urgent matter and needs to be included in the next update of the FTP Policy Element (i.e., around the end of 2020) to properly guide the planning process.	
Implementability	Score 1	Any results gained from evaluating the Florida transportation system are readily implementable. To be more specific, policy makers can treat the results as feedback on past and ongoing resilience programs to improve them as well as prioritize regional transportation assets for the development of new transportation projects based on the calculated value of the resilience index. Any recommended actions based on the results	

		may be implemented statewide. Beyond the project, FDOT can use the framework of the developed resilience index as the basis for implementing future resilience plans and programs.
Project Benefits (Select all that apply and explain)		
Project Benefits	**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 Materials Savings		
o Time Savings		
o Lives Saved/Injuries Prevented		
o Other (Explain)		1. The results of the research will help FDOT prioritize vulnerable local transportation infrastructure for improvement within budget constraints. 2. The developed resilience index can be used by local transportation agencies as quantitative support when requesting funding for investments toward enhancing the resilience of regional transportation assets. 3. Unlike the physical condition based resilience indicators (i.e., those used in the 2015 FTP Policy Element), the proposed resilience index reflects how service disruption to transportation assets will affect regional communities demographically, economically, and environmentally. If the proposed resilience index is considered during transportation project evaluation and planning, Florida's transportation infrastructure will be better able to meet community demands for transportation even in a post-disaster situation.