Request for Research Funding for FY 2019-2020			
Requesting Office	Forecasting and Trends	**Priority**	1 of 7
Proposed Title	Evaluation and Enhancement of the Florida Statewide Model		
Justification	Statewide travel demand models are essential tools to support planning and programming activities at the state and regional level. Statewide modeling is used to help formulate transportation plans and policies, evaluate and prioritize projects and programs, and assess the economic and social impacts of major transportation investments. The Florida Statewide Model (FLSWM) is such a tool that provides travel demand analysis to inform transportation decisions in Florida. It also provides critical information (such as external demand, freight flows, etc.) to regional models. Developing statewide models has been recognized as a challenging task, as they often "address a wider range of requirements, cover much large areas, and focus on markets that are not as well understood as those in urban areas[1]". With increasingly growing population and rapidly evolving technologies, Florida is facing several transportation planning and policy issues that cannot be fully addressed by the current FLSWM, due to the simplified and aggregated nature of the traditional four-step approach. Emerging issues such as evaluating traveler responses to congestion and pricing, multimodal transportation planning and operations, social and economic impacts, and incorporating emerging technologies and mobility services, require modeling at high levels of behavioral, spatial, and temporal resolution. Recognizing the limitations of the traditional four-step models, many states are moving toward advanced methods, either through the incorporation of advanced features that significantly enhance model capabilities or by adopting activity-based models (ABM). With the ability to reflect individual choice settings, ABMs are much more responsive to modern transportation policies oriented toward management vs. expansion of transportation systems. Given the above discussions, this project aims to develop a roadmap for future model enhancements of the FLSWM in light of emerging planning issues and propose enhancement strategies incorporating advanced demand modeling techniques. The specific objectives are: 1) Identify current and emerging planning and policy issues in Florida to be addressed by the FLSWM. 2) Evaluate the performance and capability of the existing FLSWM according to the state of the practice and the state of the art. 3) Recommend incremental enhancement strategies considering analysis needs, data availability, and cost for model development and implementation. To achieve these objectives, a working group will be formed to provide guidance on the research activities; focus group discussions and interviews will also be conducted to gather feedback and inputs from national experts and industry leaders. New data sources and innovations in data collection methods will also be considered in designing the enhanced FLSWM. Enhancing the FLSWM and equipping Florida decision makers with the tool to address a broader range of issues in the state will lead to a more effective transportation system that enhances mobility, supports economic development, and promotes sustainable growth in Florida.		
Impact	This project will provide recommendations for model enhancements in the next five years. It will provide a consistent and systematic framework for model development and enhancements to meet the planning and policy analysis needs in the state. A roadmap for future enhancements will lead to more cohesive model development activities and avoid duplicating or even conflicting efforts. This will lead to more efficient use of state funding.		

[1] NCHRP Synthesis 514, 2017. Statewide and Megaregional Travel Forecasting Models: Freight and Passenger A Synthesis of Highway Practice.

Affected Offices	Strategic Development Office		
Existing Work	NCHRP synthesis 514, Statewide and Megaregional Travel Forecasting Models: Freight and Passenger A Synthesis of Highway Practice, reviewed current practices and emerging trends through series of surveys and interviews, along with expert inputs and documentation review. The report noted that there were increasing applications of statewide travel models in the nation compared to a decade ago, indicating the need to evaluate policy and investment decisions for intercity and statewide planning. The report also indicated that states and megaregions have increasingly adopted more advanced travel demand models, including synthesis of households and firms, activity-based approach, and dynamic assignment.		
Keywords Used In Existing Work Search	Statewide model, advanced travel demand model, activity-based model.		
Related Contracts (Give contract numbers)	n/a		
Funding Request	$150,000	**Anticipated Duration**	15 months
Project Manager	Vladimir Majano Forecasting and Trends Office Florida Department of Transportation (850) 414-4823 Email: Vladimir.Majano@dot.state.fl.us	**Contracting Method**	Direct contract with university (Florida International University, Prof. Xia Jin)
Urgency	1= highest, most immediate need	Florida is facing several emerging planning and policy issues that cannot be addressed by the existing FLSWM, including congestion management and pricing strategies, adaptation of travel behavior to system performance, emerging technologies and mobility services, etc. This project will provide a systematic framework for model development and enhancements to meet the planning and policy analysis needs in the state.	
Implementability	1=greatest likelihood of and proximity to implementing results	This project will provide recommendations for FLSWM enhancements in the next five years. The outcome will be a roadmap for future model enhancements in light of emerging planning issues and implementation strategies incorporating advanced modeling techniques.	

Project Benefits (Succinct, complete explanation)

The FLSWM is an essential tool to inform a wide variety of policy, planning, and investment decisions and programming activities at the state and regional level. It captures critical markets that are not included or underrepresented within urban models, such as travel outside or between major metropolitan areas, long-distance travel, and high-level economic and social impacts, etc. It also provides information (such as external demand) to urban models. This project will develop a strategic roadmap for future enhancements of the FLSWM. A robust statewide model will help the state and regions make better informed policy and investment decisions in enhancing system efficiency, promoting economic growth, and improving quality of life.

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**

(Select all that apply and explain)		
o Materials Enhancement	n/a	
o Materials Savings	n/a	
o Time Savings	n/a	
o Lives Saved/Injuries Prevented	n/a	
o Other (Explain)	Informed and better decisions on critical transportation planning and policy analysis in the state	This project will evaluate the current FLSWM and develop a roadmap for future enhancements to meet the planning and policy analysis needs in the state. A robust statewide model will help the state and regions make better informed policy and investment decisions in enhancing system efficiency, promoting economic growth, and improving quality of life.

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