Request for Research Funding for FY 2021-2022			
Requesting Office	Forecasting and Trends	**Priority**	#1 of #4 (projects may not have the same ranking – no ties)
Proposed Title	Florida's Transportation Revenue Forecasting and Allocation Process and Modeling – Phase I		
Justification	There are two challenges facing departments of transportation in the nation in general and in Florida in particular. **First**, as vehicles get more fuel efficient and especially when more people start to buy electric vehicles, the gasoline-based transportation revenue will decrease over time. But at the same time, the demand for transportation infrastructure will continue to rise, so does the needs for funding to continue to develop, operate and maintain the Florida's transportation infrastructure. Thus, the first challenge is how to forecast future transportation related revenue in the state of Florida and how to better allocate this revenue to FDOT districts and MPOs. Specifically, the following questions need to be addressed: 1. How to accurately forecast transportation related revenues in the short and long run, taking into consideration of changes in demographic, land use, travel patterns, and new vehicle technologies and adoption rates? 2. What is the change of transportation related revenue and how will the revenue changes affect the Florida state budget for transportation infrastructure development, operations and maintenance? 3. What are the different options to compensate revenue losses, how to quantify the revenue changes in the different options, and how to assess the pros and cons as well as the feasibility of each option? 4. What is the process of allocating state transportation funding to Districts and MPOs in an efficient and fair manner? **Second**, the future revenue will affect the number of work program in FDOT. Thus, it is essential to have a decision-support tool to facilitate decision-making process to evaluate the cost-efficiency and fairness of the work program. When deciding the transportation projects in the work program, Florida DOT needs to consider the overall available revenue, the cost-efficiency of the proposed projects themselves, the economic impacts (e.g., GDP, employment and income) on the local (localized impacts) and state economy (statewide impacts), as well as spatial equity among different Districts, MPOs and local jurisdictions. Therefore, it is essential to have a model and tool to quantify the cost-benefit ratio, economic impacts at the local and state scale based on expected traffic flow and local demand to facilitate decision-makers to make more informed decisions. This proposed research will be conducted in two phases. Phase I focuses on developing models to forecast transportation related revenue in the state of Florida and delineating the whole process (and concerns) of allocating the revenue to Districts and MPOs. Phase II is to develop a decision-support tool to evaluate and rank the projects in the work program. This proposal is for conducting the Phase I research. The Phase II research will be followed afterwards.		
Impact	FDOT's future infrastructure investments depend on transportation related revenue. It is very important to understand the changes in revenue due to changes in vehicle technologies, demographics and land use patterns. It is also important to understand the whole process and concerns of revenue allocation among Districts and MPOs so that a better and fairer process can be delineated. This research will help FDOT central office, districts and MPOs to better forecast future transportation revenue, and to improve and formulate the budget allocation process within the state.		
Affected Offices	FDOT Forecasting and Trends Office, FDOT Districts and MPOs.		
Existing Work	There is a NCHRP synthesis report 479: Forecasting Transportation Revenue Sources: Survey of State Practices in 2015. The report found that "there is as yet little published guidance on or consistency in the methods used to forecast traditional revenue sources, and even less on techniques for estimating revenue from innovative sources." There is no specific forecasting tool being used nationwide. Therefore, there is a need for Florida DOT to have a forecasting tool that is based on sound data, methodology and models.		
Keywords Used In Existing Work Search **(Cannot leave blank)**	Transportation Revenue, gasoline tax, electric vehicle, revenue allocation, cost-efficiency, equity		
Related Contracts (Give contract numbers)	None		

Funding Request	300,000	**Anticipated Duration**	18 months
Project Manager	Frank Tabatabaee	**Contracting Method**	direct contract with University of Florida (Dr. Peng)
Urgency	Score 1-5 1= highest , most immediate need	Comments* (elaborate as appropriate on justification/impact comments to explain the urgency of the need . . . is a solution needed immediately, needed within a certain period of time or by a known or anticipated deadline, desired for enhancement, etc.)	
Implementability	Score 1-5 1=greatest likelihood of and proximity to implementing results	Comments* (consider both the likelihood of implementation and the length of time and resources required to implement the results of the research.) Identify any prerequisites to, requirements for, or barriers to implementing the anticipated results of this research (e.g., new or change to existing specifications, development of production units of prototype device, legislative change); please indicate if multiple phases of work shall be required	

Project Benefits (Succinct, complete explanation)

1. A better forecast of future transportation revenue would help FDOT have a better plan to the state's future infrastructure investment.
2. A better understanding of the current process and concerns of allocating transportation funds to Districts and MPOs can help better delineating and improve the fund allocation process by considering demands, impacts, costs-efficiency and spatial equity.

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		
o Materials Savings		
o Time Savings		
o Lives Saved/Injuries Prevented		
o Other (Explain)		This project's benefits are reflected in the improved understanding and forecast of transportation revenue in the future, as well as understanding the process and concerns of transportation budget allocation among Districts and MPOs. A better delineation of budget allocation process will improve the efficiency and fairness of budget allocation.

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