

Request for Research Funding for FY 2022-2023

SPR Subpart B Project: PTO-23-04

Requesting Office	Public Transit	Priority	4 of 4 (projects may not have the same ranking – no ties)
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Proposed Title	Mobility Hub Identification Process for Florida
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Justification	<p>Recent years have seen rapid changes in technology and travel choices such as the rise of ridehailing and shared micromobility. In response, cities and transit agencies around the world are identifying ways to harness the benefits of innovative technology while minimizing risks. Mobility hubs offer one such strategy by serving as a platform that integrates different modes of transportation and supports first and last-mile connectivity. A mobility hub should be anchored by frequent, high-capacity transit, complemented by availability of other shared mobility options (e.g., bikesharing), accessible traveler information, and pedestrian and bicycle-friendly facilities.</p> <p>Many cities and transit agencies, including Gainesville and Miami-Dade, have planned to develop mobility hubs in their transportation development plans. However, limited resources are currently available to guide them on several implementation issues: How to identify candidate sites for mobility hubs? What features (e.g., bus shelter, bikeshare parking, information kiosks, and curb space for ridehail pick-ups/drop-offs) should be programmed for each mobility hub? While some existing mobility hub topology studies are helpful at the conceptual level, there is not yet an analytical tool to help cities and transit agencies make context-aware, and data-informed decisions on mobility hub site selection and feature programming.</p> <p>The main objectives of this project are: 1) to identify the best mobility hub identification process; 2) to develop an analytical framework for Florida agencies to select and develop mobility hubs. To achieve the first objective, we will conduct a literature and practice review of mobility hub studies and to evaluate the applicability of existing mobility hub topologies to Florida cities. Regarding the second objective, we plan to work with Malisa McCreedy/Jesus Gomez from Gainesville and Carlos Cruz-Casas to develop, test, and refine a six-step mobility hub identification process proposed by the UF research team. A key task in the process is to develop a set of analytical approaches, models, and algorithms (written in Python or R), which will come with easy-to-understand instructions so that agency staff can use these tools to process data on their own to understand transit ridership trends and how shared mobility options interact with public transit.</p> <p>The project contributes to transit office vision by creating a better travel experience and promoting multimodal options. It connects to FDOT's Vital Few by enhancing mobility for transit and micromobility users and inspiring innovation in multimodal transportation.</p>
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Impact	<p>The results can support mobility hub planning and development in Gainesville, Miami-Dade, and other Florida cities. These methodologies developed from this project can help Gainesville RTS and Miami-Dade Transit obtain valuable policy insights and to support some ongoing transit-related initiatives (e.g., micotransit pilots). Without doing the research, Florida transit agencies and local DOTs will not be able to make data-informed decisions on mobility hub development. In addition, it will be a lost opportunity for these agencies to gain an edge in the competition for federal grants (e.g., RAISE discretionary grant) related to multimodal transportation.</p>
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Affected Offices	<p>Gabrielle Matthews and David Sherman from the Transit Office will be involved in the scoping of this proposed project. Malisa McCreedy (Director of Transportation) and Jesus Gomez (Director of RTS) from Gainesville and Carlos Cruz-Casas (Assistant Director) from Miami-Dade Department of Transportation and Public Works will implement the results. Other Florida DOTs and transit agencies can also benefit from using the tools developed from the project.</p>
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Existing Work	<p>After searching through the TRID and RIP databases, we found the following related research projects.</p> <ul style="list-style-type: none"> • TCRP D-21. [RFP]. Planning for Innovation & Emerging Mobility Futures at Intermodal Passenger Facilities. • TCRP Research Report 221. (2021). Redesigning Transit Networks for the New Mobility Future. • TCRP Research Report 230. (2021). Transit and Micro-Mobility. <p>To our best knowledge, there has been little research on the identification process for mobility hubs. Existing work (e.g., mobility hub typology studies) has been mostly at the conceptual level. Moreover, no existing work has fully utilized the available transit and shared mobility data to inform how to achieve shared mobility and public transit coordination. This</p>
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	proposed project will empower cities and transit agencies to make context-aware, and data-informed decisions on selecting and developing mobility hubs.		
Keywords Used In Existing Work Search	Mobility hub, transit hub, multimodal hub		
Related Contracts	None		
Funding Request	\$200,000	Anticipated Duration	18 months
Project Manager	David Sherman	Contracting Method	Direct contract with UF
Equipment	N/A		
Urgency	Score 1-5 1= highest, most immediate need	Very high (1). Both Miami-Dade and Gainesville urgently need data-informed insights on selecting and developing multimodal mobility hubs.	
Implementability	Score 1-5 1=greatest likelihood of and proximity to implementing results	Very high (1). The results of this project can be immediately implemented by Gainesville and Miami-Dade to plan for mobility hubs. The tools developed from this project also have long-term value and are beneficial for other Florida agencies. These tools include: 1) a multi-step mobility hub identification procedure, together with detailed guidelines on each step; 2) a set of analytical tools (R/Python scripts or Excel files with user instructions) that public agencies can use to process the transit and shared mobility data on their own to understand ridership trends and how shared mobility interact with transit. These tools will be posted on the FDOT SP site as part of the deliverables.	
Project Benefits (Succinct, complete explanation)			
<ul style="list-style-type: none"> Supporting ongoing transit-related initiatives in Miami-Dade (e.g., “Better Bus” project and the multimodal rewards program) and Gainesville (e.g., “Reimagined Transit” initiative) Increasing transit ridership and elevating traveler experiences as a result of conducting research that promote multimodal connectivity Laying the groundwork that can support Florida transit agencies to compete for federal grants (e.g., RAISE discretionary grant) Consolidating FDOT’s identity as an innovative agency by inspiring multimodal solutions and technology development 			
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	
<input type="checkbox"/> Materials Enhancement		This project can inform Florida cities the best sites for developing mobility hubs, which can lead to the most efficient and effective deployment of multimodal facilities.	
<input type="checkbox"/> Materials Savings		This project will help Florida cities save capital investment costs on multimodal facilities by providing data-informed solutions for mobility hub site selection and design.	
<input type="checkbox"/> Time Savings		By enhancing multimodal connectivity, this project can help travelers who use transit and shared mobility options to save significant amount of time.	
<input type="checkbox"/> Lives Saved/Injuries Prevented		N/A	
<input type="checkbox"/> Other (Explain)		Many federal grants, including ones that seek to promote multimodal travel, are expected to become available as a result of the Infrastructure Investment and Jobs Act. This project can help Florida agencies gain an edge in the competition for these grants.	

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