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Leveraging Mobility Data Analytics to Inform Mobility Hub Development in Florida

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Current Situation

Mobility hubs (MHs) have emerged as a novel concept to enhance multimodal travel. While many cities have planned to develop MHs, an established analytical framework for selecting candidate sites for MH implementation is still lacking. Consequently, there is a growing need for effective planning and development of mobility hubs in Florida to increase transportation options. Mobility hubs are physical locations where travelers can seamlessly switch between various transportation modes, including public transit, micromobility options like bikes and scooters, and ride-hailing services. Many cities seek standardized methods for identifying appropriate sites for mobility hubs, despite their crucial role in enhancing multimodal travel and providing various travel options.



Accessible by multiple subway lines, bus routes, and micro-mobility options, this distinct mobility hub in a dense area of Los Angeles as bike racks, bike lockers, and displays artwork by local artists inside.

Research Objectives

This project aimed to develop a data-driven, GIS-based tool to assist Florida cities in identifying optimal locations for mobility hubs. This tool would prioritize factors such as multimodal connectivity, infrastructure readiness, access to destinations, and economic considerations. The approach would rely on publicly available data sets, ensuring that it can be easily applied by practitioners. The researchers also sought to test the tool in real-world scenarios to ensure its practicality and broader applicability across different contexts.

Project Activities

The University of Florida research team reviewed existing literature and case studies on MH planning, conducted surveys, and developed a GIS-based analytical framework including key criteria to be considered for MH site selection. Further, the researchers developed an innovative stakeholder involvement approach to validate site selections. The tool was tested in Gainesville and West Palm Beach, Florida, where it identified potential mobility hub sites at three levels: neighborhood, district, and regional.

In Gainesville, the tool identified 17 potential sites, which were validated through community surveys and stakeholder feedback. Survey participants emphasized the importance of amenities like parking, bike racks, safety features, and access. The analysis and community input were then used to prioritize sites like Shands Hospital (regional hub) and Gainesville High School (neighborhood hub).

In West Palm Beach, five potential mobility hub locations were identified, with the Tri-Rail Station emerging as a prime candidate. The research validated these findings through GIS analysis, surveys, and consultations with local stakeholders.

Project Conclusions and Benefits

The project's GIS-based tool can be an effective method for identifying MH sites that align with community needs and development goals. The proposed approach can serve as a valuable tool for transportation planners and policymakers across various contexts.

The project demonstrated that well-planned MHs can improve transportation connectivity, increase traveler satisfaction, offer transportation options, and enhance currently available transportation resources. In addition, the tool will help Florida cities and communities save capital investment costs by providing data-informed solutions for MH site selection and design. The findings also support broader applications beyond Florida, providing a roadmap for communities aiming to integrate MHs into their transportation networks. By enabling data-driven planning and community engagement, the study has paved the way for more transportation options and available transportation resources.

For more information, please see fdot.gov/research.