ITE SANDBOX COMPETITION 2025

STANTEC TEAM SUBMISSION - MOBILITY HUB CONCEPT DEVELOPMENT & DESIGN

The Stantec team is comprised of planners and engineers from the US and Canada including Bob Williams, Rachel Young, Freddy Thomas, Frank Domingo PE, Mrunmayee Pawar, and Rory Weilnau PE (ITE member), and led by Ashley Thompson AICP, Stantec's North American Mobility Hub Technical Lead. This submission will respond to the problem statement: "to develop a concept plan for a mobility hub providing a design that serves the surrounding locations. The design should incorporate suitable transportation solutions/options, and demonstrate how they serve users to benefit mobility, equality and environmental sustainability."

VISION

Metroplan Orlando's 2045 Metropolitan Transportation Plan (MTP) established a broad vision and creates a framework for improvements to Central Florida's transportation system. The plan outlined potential strategies to advance Central Florida's long-term transportation vision and goals while also identifying new or enhanced approaches that could be implemented immediately. Notable strategies aim to help local governments prepare for electric vehicles, shared vehicles, and micromobility. Additionally, they seek to expand first- and last-mile transportation options, increase walking and cycling accommodations — explicitly at Mobility Hubs, and support urban and home delivery of goods and services.

The five MTP guiding principles that collectively advance the vision for a regional transportation system to safely and efficiently move people and goods, supporting the region's vitality include: Safety & Security, Access & Connectivity, Reliability & Performance, Health & Environment, and Investment & Economy.

The creation of a project-level vision statement is necessary to create a cohesive sense of expectations for the Mobility Hub plan and design.

Our **vision statement** aspires to describe the ideal outcome and impact on the local transportation network:

Our vision is to facilitate a seamlessly connected community hub — one in which mobility is enhanced, placemaking inspires, and equality and environmental sustainability are prioritized. We strive to provide a place where various mobility options come together to provide a fast, easy, and affordable service for both commuters and leisure travelers, ensuring the safe and efficient movement of people and goods while also creating a sense of place for the community to come together.

Goals

Objectives defined to achieve the vision intersect directly with each of the 2045 MTP's stated guiding principles:

- Safety and Security: Prioritize people through design to provide a sense of place that feels welcoming and provides safe access for all mobility users including dependent and choice riders
- Reliability and Performance: Utilize data, technology, spatial adjacencies, and multimodal integration to improve the reliability and financial sustainability of the transportation services offered at the Mobility Hub
- Access & Connectivity: Extend access and connect everyone to more opportunities through the number of transportation options made available at the Mobility Hub and easing the transfer between modes
- Healthy and Environment: Connect people with sustainable mobility choices that encourage environmentally conscious lifestyles and create an appreciation for Central Florida's natural resources
- Investment and Economy: Catalyze economic vitality by right-sizing the Mobility Hub scale to the surrounding context and remaining flexible so the hub can adapt to changes over time and maximize the public's investment

APPROACH

Each of the Mobility Hubs along the SunRail corridor will function as one system and aims to safely and efficiently connect travelers from door-to-door with trip planning capabilities across the system of Mobility Hubs and modal options. When a rider steps out their front door they should understand how to access the Mobility Hub to their final destination.

It should act as a literal hub – to access mobility options like the train, bikes, buses, and more; but also, a public gathering place with shops and amenities to drive economic development in the surrounding transit-oriented community. To support these goals at a functional level, the SunRail Mobility Hubs should have their own story, branded similarly for consistency. Trip planning applications will be integrated across all Mobility Hubs (e.g., MaaS), modal services will need to coordinate schedules and across jurisdictions, and first- and last-mile connections should be improved alongside the Mobility Hubs for safe multimodal access.

Differentiators

Stantec's approach includes four key aspects we believe will stand out from the other submissions. These will be further explained in following sections.

- 1) The Stantec team reviewed the demographics and urban composition of the surrounding areas for the identified sites and approached them as **Equitable Transit-oriented**Development. In this analysis, we used Stantec's bespoke Transportation Access Audit tool to understand where amenities are lacking within walking distance of the Mobility Hub sites, informing proposed development programming within the study area.
- **2)** The Stantec team conducted a thorough **site suitability assessment** before choosing between the two identified sites to develop a concept plan. This provided insights into the existing conditions, opportunities, and challenges for both sites and helped determine our transferability strategies across the entire SunRail line.
- **3)** The Stantec team conducted a **first- and last-mile analysis** to identify gaps in service and infrastructure for all mobility options offered at the Mobility Hub, influencing the types of modes to offer and which critical infrastructure elements need to be redesigned to provide a safe and accessible environment.
- **4)** The Stantec team developed a **typology matrix** that can be transferred to other stations. Smaller stations can scale into larger stations based on the categorization criteria.

Understanding of Users & Modes

Connecting Travelers from Door-to-Door

What is each user's experience from beginning to end of their trip? How might residents use the Mobility Hub?

Understanding how riders will use the Hub will inform spatial adjacencies, modal options and quantities, and relationships within the site. Best practices indicate a Mobility Hub should ease access and make transfers seamless to encourage people to get out of their personal vehicles and take public transit. The design should feel welcoming and easy to use by all, regardless of physical or mental ability, or financial circumstance. This may include audio announcements for visually impaired users, sensory-friendly waiting areas, or free Wi-Fi to access digital ticketing and trip planning applications on a smartphone. Above all, understanding and accommodating all users is key.



Hank Adams walks to the Mobility Hub every week to get fresh food at the local grocer and sit in the plaza to read.

Hillary Johnson takes the bus from her house to the Mobility Hub and catches a train to work in Orlando.





Jose Gomez and his friends hang out at Central Park every Friday after school, then rent bikes at the Hub to ride greenways and enjoy the bees and wildflowers.

Jaime Smith picks up a package from the Hub, waving to delivery drivers transferring packages from a box truck into their vans to deliver around the neighborhood.



Transferability

The typology matrix creates a baseline and general guidance for design of any of the 17 possible SunRail Mobility Hubs. It includes five classification factors to categorize the Mobility Hubs as Major, Medium, or Minor hubs. The classification would impact the quantity and types of modal options and community amenities offered at the Mobility Hub. The typology can also be used to scale hubs as they and their surrounding context evolve over time.

The categories include:

	Major	Medium	Minor
SunRail ridership counts	>90,000 riders annually	50,000 - 90,000 riders annually	<50,000 riders annually
Surrounding land uses	High-density mixed-use, commercial, residential, institutional, etc.	Medium-density mixed-use or suburban commercial/residential	Low-density residential or limited commercial
Number of modal connections (in addition to rail, e.g., bus, bike share)	3+ modal connections	2 modal connections	1 modal connection
Amenities & Services	High-frequency transit service, retail, parking facilities, restrooms, security presence	Moderate-frequency service, limited retail, bike facilities	Basic transit stop, minimal amenities
Proximity to key destinations (e.g., campus, hospital)	within 1/2 mile	within 1 mile	greater than 1 mile

Taking all categories into consideration, the two identified sites were evaluated to exemplify how to use the typology matrix. The colors correspond with the typology classifications in the table above (i.e., red is major).

Upon evaluation, Winter Park was categorized as a Major Hub and Orlando Health as a Medium Hub.

The analysis is as follows:

Station	Ridership (FY	Land Uses	Modal	Amenities &	Proximity
	2023-2024)		Connections	Services	
Winter Park	114,048	Mixed-use, commercial, residential, cultural district			Downtown Winter Park, Rollins College, shopping district
Orlando Health	61,930		Commuter rail, bus	Limited retail, bike facilities	Orlando Health medical campus

SITE SUITABILITY ASSESSMENT

The Stantec team conducted a suitability assessment to determine which of the two ITE proposed sites — Winter Park or Orlando Health — would move forward into conceptual design. Any and all SunRail stations could become Mobility Hubs, working together as a comprehensive system. Following our typology framework and design principles, the considerations and conceptual design developed for the selected site can be applied to future Mobility Hubs across Orlando.

Winter Park station, the first site identified, is located adjacent to the City of Winter Park's historic district and commercial center, serves multiple bus route connections, and has dense residential areas to the north and east. The second site option is Orlando Health station, located adjacent to the Orlando Health Regional Medical Center campus, off-site parking opportunities, and dense industrial/commercial activity areas.

Initial evaluation of each potential Mobility Hub site focused on readily apparent site factors that could be analyzed through five criteria, each aligning with the overall project goals.

Evaluation Criteria

Choosing a Mobility Hub site requires a well-defined detailed assessment process. The appraisal of site suitability applies a uniform Multiple Account Evaluation approach. Each evaluated criteria serves as an equal part that can either support or detract from the overall attractiveness of the site as a Mobility Hub design candidate.

The criteria developed for the suitability assessment is as follows:



Safety & Security

Access to and circulation within the site - analyzing pedestrian, cyclist, and vehicular crash data.



Reliability & Performance

Innovative multimodal integration opportunities to enhance operational performance and create a resilient set of modal options.



Access & Connectivity

A qualitative assessment of surrounding multimodal infrastructure and barriers to access with quantitative understanding of nearby population and demographics.



Health & Environment

Impacts to natural resources within and around the site and ability to connect to healthy places, such as parks.



Investment & Economy

Redevelopment opportunities and other catalysts for economic growth, such as presence of surrounding active frontages.

For the suitability assessment, four of Stantec's competition team members assigned scores to each criteria independently, with the highest score closely matching the criteria description. The Stantec team then took an average of each criterion's score to determine the final result. The scores were numerical and based on thorough data analysis such as crash data, existing pedestrian/cyclist and bus networks, and proximity to transportation disadvantaged communities. The results are summarized graphically on the following page.

Site Evaluation

Safety & Security: Seeking to have the greatest positive impact for change, the site with worse/more crashes scored higher. Orlando Health station site was rated higher than the Winter Park site due to higher frequency and severity of pedestrian and cyclist collisions with vehicles.

Reliability & Performance: The Winter Park station is more effective with multimodal integration and amenities. The amount of bus connections and frequency are greater. Public parking in the Winter Park business district reduces spillover pressure on station parking inventory. Bus service and frequency to the Orlando Health station is minimal and micromobility activity nearly non-existent. While the health center features a large parking inventory, most is restricted to hospital employees.

Access & Connectivity: The Orlando Health site features well connected sidewalks, but no bike facilities. The population within a 3-mile radius is greater and is located in a Neighborhood Improvement District within an Opportunity Zone. The Winter Park station site encounters far fewer barriers as the dynamics of rail crossing are simplified and major expressways are more distant, resulting in its higher score.

Health & Environment: The Orlando site offers a greater opportunity to connect to healthcare facilities while the Winter Park site offers a greater and more direct connections to green space owing to its co-location in Central Park.

Investment & Economy: The Winter Park study area far exceeds the Orlando Health study area in terms of developable land and compatible surrounding active frontages.

Site Selected

The Orlando site edges the Winter Park site with respect to safety and health/environmental factors, but Winter Park offers clear advantages in connectivity, performance integration, and investment opportunity. Ultimately, Winter Park station was the site selected.

STANTEC SELECTED WINTER PARK STATION FOR MOBILITY HUB PLANNING AND DESIGN



CONCEPTUAL PLAN AND DESIGN CONSIDERATIONS

The following section lays out the analysis conducted to inform the decision making process for conceptual design. The rendered plan and perspectives illustrate the original ideas and collaborative design process developed by the Stantec team for this competition.

Community Needs

As Winter Park continues to evolve, understanding the community's demographic makeup and needs is important in planning a major Mobility Hub that effectively serves its residents. The city is known for its strong economic base, highly educated population, and commitment to preserving its distinct character while embracing innovation in urban mobility. A closer look at Winter Park's demographics provides insight into the priorities and expectations of its residents, shaping the design and functionality of infrastructure projects.

INFOGRAPHICS WINTER PARK DEMOGRAPHICS









12% HISPANIC



39 MEDIAN AGE

\$90K MEDIAN HOUSEHOLD INCOME

MOSTLY WORKING PROFESSIONALS & ESTABLISHED FAMILIES

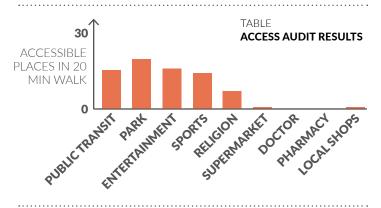
CASE STUDY TO INFORM MOBILITY HUB AMENITIES

Aiming to gain insight and plan a Mobility Hub that aligns with the expectations of Winter Park's population, a comparative analysis with Wake Forest, North Carolina, was conducted. Wake Forest shares similar demographic characteristics and population growth rate, making it a relevant case study for understanding how suburban communities with similar compositions adapt to mobility solutions. By leveraging public engagement results from Wake Forest, the amenities toolkit and space needs programming were refined to align with the priorities of Winter Park residents.

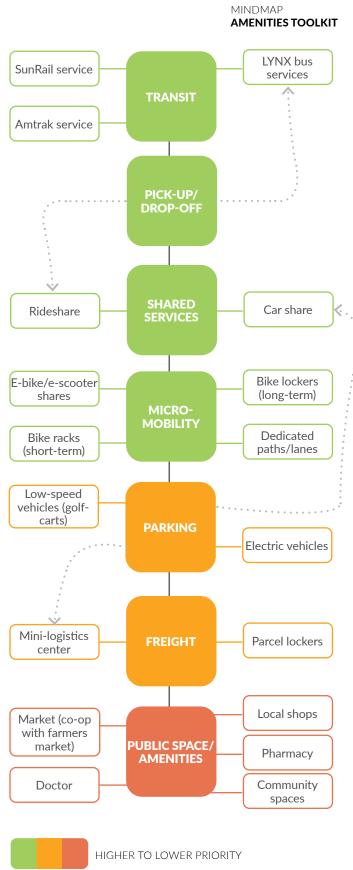
Amenities Toolkit & Space Needs Program

The needs of Winter Park's residents reflect its demographic composition and lifestyle preferences. With a highly educated and professional population, there is a strong demand for transit solutions that prioritize convenience, efficiency, and technological integration. Additionally, given the city's affluence, amenities such as comfortable waiting areas, access to retail and dining, and well-designed public spaces will enhance user experience.

While the surrounding area is affluent, there are still gaps in amenities as seen by the results of Stantec's Transportation Access Audit tool which showed a need for a supermarket, doctor's offices, a pharmacy, and local shops within an easy walking distance of the station.



The Stantec team developed an amenities toolkit to address best practices, the existing transportation network, the needs of similar communities, and amenities lacking in the area. The toolkit acts as a menu of options, that given space constraints on the site, were prioritized and could be reduced in size or eliminated based on each amenities priority level and location context.



Key Challenges to Solve through Design

The Winter Park site presents a unique opportunity to enhance multimodal connectivity, but several challenges exist at the site. These challenges stem from the site's spatial constraints, multimodal demands, and integration with the surrounding urban fabric.

Multimodal Integration - The final Mobility Hub must successfully integrate a wide variety of modes efficiently; however, managing these diverse transportation services in a compact space presents operational and design challenges. Conflicts between different user groups—such as pedestrians crossing bus lanes or cyclists navigating vehicle-dominated areas—must be mitigated through thoughtful station layout, signage, and traffic flow optimization.

Parking and Circulation - The station includes a large existing public parking lot that is already well utilized, but the challenge lies in balancing the need for some parking with the goal of reducing reliance on personal vehicles and encouraging more sustainable travel. Additionally, traffic circulation within the site must accommodate pick-up/drop-off areas, transit vehicles, rideshare services, and private vehicles, all while maintaining efficient operations and minimizing congestion.

Connectivity - Winter Park's downtown core, Central Park, and surrounding cultural and commercial areas are key destinations that the Mobility Hub must efficiently serve. However, providing seamless first- and last-mile connectivity remains a challenge. Infrastructure for active transportation, such as protected bike lanes, scooter docks, and enhanced pedestrian pathways, must be incorporated into the hub's design to improve accessibility. Additionally, clear wayfinding and real-time transit information will be critical in guiding passengers toward their final destinations.

Weather and Climate - Florida's hot and humid climate, coupled with frequent rain, poses challenges for user comfort and station usability. The final Mobility Hub must include climate-responsive infrastructure, such as shaded waiting areas, to ensure that transit users experience a comfortable and safe environment year-round. Florida is also known for hurricanes and the Mobility Hub can act as a community safe-space during and after a hurricane.

Design Considerations

The following considerations drove the overall approach to the design of the Winter Park Mobility Hub and the ideas were incorporated throughout the conceptual plan:

- Unified branding and wayfinding/signage clear multilingual signage, color palette, font styles, logos, etc.
- Accessible and inclusive design ADA compliant infrastructure (e.g., level boarding areas, ramps)
- **Intuitive layout** to minimize walking distances between modes, emphasize ease of access, and minimize friction between transfers but responsibly keeping modes separated to minimize conflicts (e.g., dedicated spaces separating vehicles from vulnerable roadway users)
- Implement green design elements like landscaped buffers and trees to maintain integration with Central Park, while providing shade and incorporating local vegetation for pollinators
- **Incorporate app-based solutions** for every mode to create comprehensive Mobility-as-a-Service to plan, book, and pay for mobility in Winter Park
- Create a "community resiliency hub" with resilient solutions so the hub can function as a place of refuge and recovery during a time of crisis (i.e., hurricanes)



Winter Park - Major Mobility Hub

Winter Park, classified as a major Mobility Hub, has the ability to generate real change in the community — taking us one step closer to becoming less dependent on our personal vehicles. It's central location, pedestrian-friendly network, and existing transit infrastructure, along with the area's diverse land uses, offer an opportunity to create an integrated transportation system that serves a variety of users. Enhanced multimodal connections will improve travel options and boost the area's economic and social vitality.

One of the key opportunities lies in improving the pedestrian network. New England Avenue and Morse Boulevard provide strong connections into downtown Winter Park, making them a natural asset. However, Welbourne Avenue on the west side of the study area has deficiencies, particularly in crossings and curb ramps, especially near the potential hub location. Addressing these gaps through improved crosswalks, ADA-compliant curb ramps, and wayfinding signage can enhance accessibility. Additionally, Central Park offers a direct pedestrian link between the proposed hub area and key business destinations.

Opportunities also exist in expanding the city's bicycle infrastructure. Currently, dedicated biking facilities are limited to park trails, restricting safe and efficient bike travel outside of recreational areas. The hub presents an opportunity to establish dedicated bike lanes, specifically along Morse, Welbourne, and New York Avenues, connecting key destinations and making bicycling a practical mode of transportation for commuters and visitors. Additionally, incorporating secure bike parking, bike-sharing stations, and repair kiosks can support cycling as a first- and last-mile solution, reducing reliance on single-occupancy vehicles.

From a transit perspective, Winter Park is served by seven LYNX bus routes, providing connections to the greater Orlando area. This presents an opportunity to improve

transit accessibility by advocating for enhanced bus stop amenities, and real-time arrival information to make public transportation a more attractive and reliable option. The hub also presents an opportunity to incorporate electric vehicle (EV) charging stations, designated low-speed electric vehicle (i.e., golf cart) parking, and expanded bus bay infrastructure to support a diverse range of transportation options. Furthermore, the hub can integrate micromobility solutions such as e-scooters or shared bicycles, providing users with more flexible and convenient sustainable mobility choices.

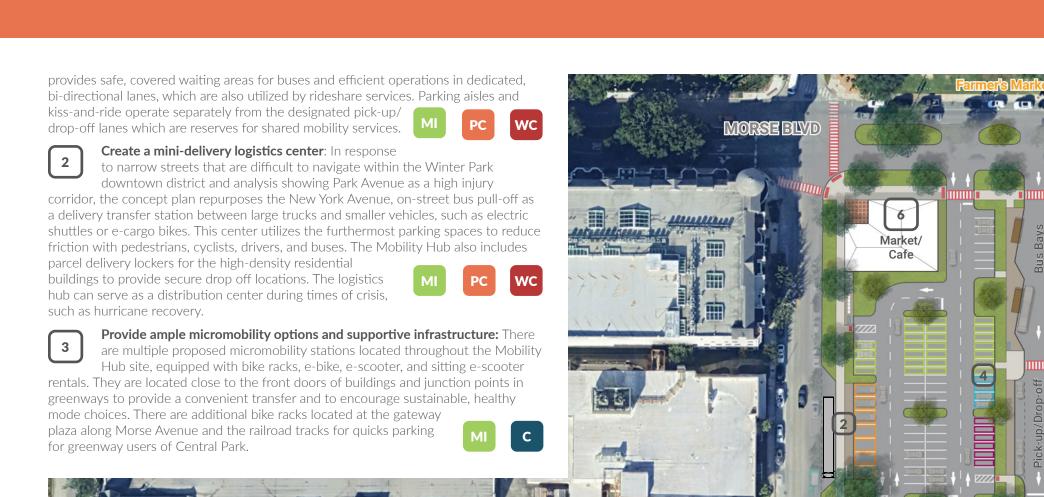
With a mix of commercial, residential, and office, the Mobility Hub can support transit-oriented development (TOD) by encouraging higher-density, mixed-use development that promotes walking, biking, and public transit. The integration of public and quasi-public spaces allows for the creation of community-focused amenities which can enhance the Mobility Hub's role as a central gathering point.

Conceptual Plan

Community needs informed the development of the amenities toolkit and space needs program, which feed directly into the detailed development of the conceptual plan. Stantec's design team developed key conceptual ideas that are illustrated in the plan. Each works to resolve the key challenges identified and are called out with first letters (e.g., MI for Multimodal Integration) and colors corresponding with the list of challenges on the previous page.

Provide safer and more efficient bus stops: The bus stops along New York Avenue are currently in-line with on-street parking and present safety issues with boarding from the street, especially considering their high frequency — serving 14 buses an hour, sometimes stopping minutes apart. In the concept plan, the bus stops are moved into the Mobility Hub with a dedicated pull through lane with four sawtooth bays. This solution





WELBOURNE AVE

Mixed-use

TOD

6





Square Feet 6.6K for Community Spaces



Bus Bays



Shared Micromobility Options



Co-work/

Battery

storage

Electric Vehicle Parking Spaces (green on plan)



Car Share Parking Spaces (blue on plan)







Parking Spaces Preserved



LSV Parking Spaces (purple on plan)



Linear Feet for Delivery Logistics (+orange in plan)

Prioritize shared, low-speed, and electric vehicles: The plan provides 4 dedicated and prime locations for low-speed electric vehicle parking (i.e., golf carts), carshare, and electric vehicles in the parking nearest the front of the station building. It also provides a pick-up/drop-off lane for rideshare (e.g., Uber), and taxi services.

Integrate into the existing green and active infrastructure of Central Park: 5 The concept plan provides a clear and safe connection between the Central Park greenways and the Mobility Hub and onward to the proposed mixeduse development. It crosses the railroad track at the existing location, but proposing a new crossing on the south side of the main pick-up/drop-off lane to reduce the number of curb-cuts, and create pockets of greenspace, including a "pollinator

highway" connecting Central Park to a proposed wildflower field on the mixed-use parcel. Additional wildflower fields are proposed within Central Park to enhance the viability of the pollinator concept.

Provide community amenities on the Mobility **Hub site**: The Transportation Access Audit identified several amenities that are lacking, including a market. The proposed market on the Mobility Hub site would include fresh foods, seven days a week and work in unison as a co-op with the Saturday farmer's market across Morse Avenue. This space can also serve as a cafe and co-working space. The pharmacy, local shops, and/or doctor's office identified as needed in the community can be located in the proposed mixed-use building bound by Welbourne, Virginia, and New England Avenues. The existing station building footprint can also be extended to house battery storage and back up generators. Buses should be electric and the EV charging stations will be bi-directional, allowing buses, cars, and stored batteries to power the station building during evacuation and recovery WC

CRITICAL INFRASTRUCTURE ELEMENTS FOR REDESIGN

efforts due to hurricanes.

The following three elements of Winter Park need to be reconsidered or re-designed for the Mobility Hub to function properly and fulfill the vision and goals of the community:

- Revise the **policy** banning bike and e-scooter share in Winter Park's central business district (ORD3195-21).
- Re-align Winter Park bus routes to directly access the Mobility Hub site instead of stopping on New York Avenue, possibly affecting scheduling and operations.
- The **first-** and **last-mile** analysis identifies gaps in the bike network that need to be filled to promote safe and reliable micromobility connections to the Mobility Hub, including previously planned routes that should be prioritized around the Mobility Hub for implementation. Through analysis, the team also recommends **streetscape improvements** to both Morse Boulevard and New York Avenue to better accommodate bus, bikes, pedestrians, and cars together.

TRANSFERABILITY OF THE WINTER PARK CONCEPT DESIGN

The Winter Park Mobility Hub design is easily adaptable to similar small urban centers and suburban downtowns with active pedestrian areas, transit connections, and mixed-use developments. Winter Park's SunRail station serves as a major commuter hub, surrounded by Park Avenue's retail

corridor, Rollins College, and Central Park. Other SunRail stations with similar characteristics, such as Kissimmee or Maitland stations, could implement this model by aligning policy with micromobility services and designating pick-up/drop-off loops to support multimodal transit. In denser urban settings, like LYNX Central station, prioritizing bike and pedestrian access over parking would be beneficial, while suburban areas, like DeBary station, might require expanded park-and-ride facilities. The flexible layout allows for customized integration based on available infrastructure, ensuring a seamless connection between transit, public spaces, and commercial areas.

Specifically, when considering how design ideas can transfer from the Winter Park Mobility Hub to one for Orlando Health station, ridership, context, and modal connections play key roles. Both stations are located in an urban area. surrounded by major destinations (downtown, college campus, medical campus, etc.), therefore, they can offer similar amenities and expect similar types of users. However, an Orlando Health Mobility Hub would differ in scale due to nearly half as many riders using the SunRail station as Winter Park, as well as, considerably reduced frequency in bus services offered (i.e., 14 buses/hour versus 4). A dedicated pick-up/drop-off lane may not be necessary for buses, but the same ideas around enhanced safety would still apply. Both study areas lack pedestrian and bike infrastructure, making ample micromobility options and supportive infrastructure a shared goal. This would include proritizing shared, low-speed, and electric vehicles to make the walking and cycling environment safer and healthier. Improved goods services also may apply to Orlando Health due to higher demands on curbside in downtowns, therefore, the Mobility Hub could benefit from a mini-delivery logistics center.

