MEMORANDUM

To: Simran Jhutti, Principal Planner, Fresno Council of Governments

From: Mauricio Hernández, Alta Planning + Design

CC: Meg Bryson, Alta Planning + Design; Ben Weber, Walker Consultants

Date: May 1, 2025

Re: Fresno County Mobility Hub Feasibility Study: Implementation Guidelines Memo (3b)

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Introduction

The Fresno Council of Governments (FCOG) is developing a Mobility Hub Feasibility Study to identify feasible mobility hub locations in the cities and rural areas of the County that can facilitate multi-modal transportation, such as public transit, microtransit, micromobility [1], carsharing, ridesharing, and other modes. This study will culminate in concept designs and feasibility evaluations of four locations: one each in Clovis and Fresno and two in other cities or rural areas in the County. The mobility hubs may also include community amenities such as spaces for small businesses, public recreation and meeting areas, health and social services, and other uses.

As part of this study, Alta Planning + Design (Alta) collaborated with Walker Consultants to develop an understanding of mobility hub typologies, their physical elements, and site suitability to accommodate the amenities and mobility services suitable in a range of contexts. This memo summarizes these three factors and includes case studies of comparable mobility hubs around the country.

Memo Organization

This memo includes five sections:

1. Introduction presents the project context, the concept of mobility hubs, and why transit agencies may consider mobility hubs.
2. Mobility Hub Elements and Typologies describes and categorizes common elements of mobility hubs and introduces a typology system to classify hubs by their size and function.
3. Mobility Hub Case Studies explores how three agencies from across the US are approaching mobility hub implementation from the planning stages through completion.
4. Implementation Considerations provides guidance on the physical and siting considerations for the implementation of mobility hubs.
5. Appendix includes materials from the project team's presentation to the Steering Committee in February 2025.

[1] Micromobility refers to "shared-use fleets of small, fully or partially human-powered vehicles such as bikes, e-bikes and e-scooters. These vehicles are generally rented through a mobile app or kiosk, are picked up and dropped off in the public right-of-way and are meant for short point-to-point trips." Source: National Association of City Transportation Officials, *Guidelines for Regulating Shared Micromobility* (2019)

What are Mobility Hubs?

Mobility hubs are locations that integrate different transportation options, helping people get where they need to go and making it easier to transfer from one form of travel (like walking, biking, or carpooling) to another (like taking a bus, riding the train, or hailing a ride). Mobility hubs are intended to bridge transportation gaps while reflecting the surrounding community and providing opportunities for community-supportive infrastructure. Mobility Hubs tend to be centrally located and reflect the surrounding community, providing opportunities for community-supportive development.

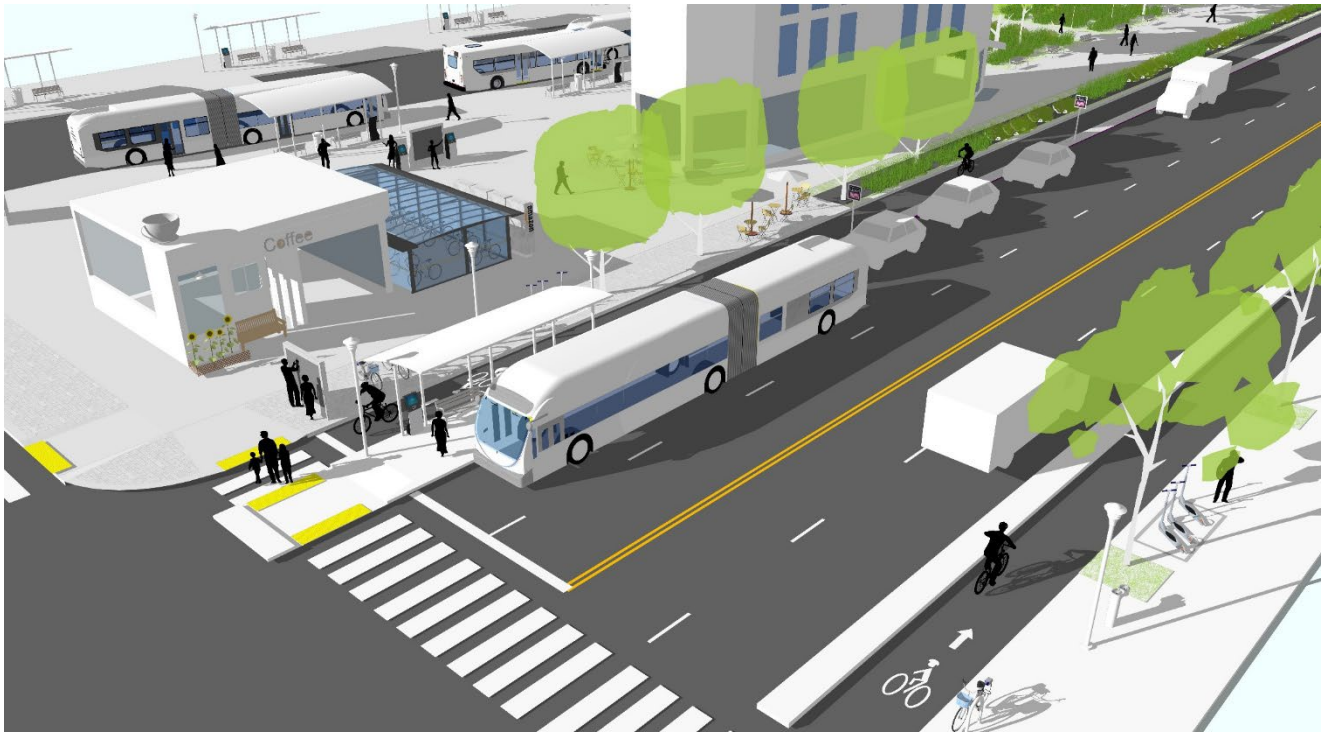


Figure 1. Mobility hubs integrate transportation options making it easier for users connect between trips.

Why Mobility Hubs?

Mobility hubs are designed to make trip-planning and trip-making simple and intuitive for users. In addition to transportation benefits, mobility hubs often provide wayfinding to local landmarks, create new community spaces, and offer commercial and housing development opportunities.

Featuring infrastructure designed for all ages and abilities, mobility hubs empower travelers to choose the mode of transportation that works for their trip purpose – whether going to work, visiting surrounding communities, or accessing businesses and services. Mobility hubs can also anchor commercial activity and community socialization with safe and accessible public space that benefits residents and visitors.

Hubs are particularly valuable for people without consistent access to a personal vehicle or those who cannot or choose not to drive. By centralizing mobility options and community-serving development, a mobility hub can

improve connections to residential and commercial development near the hub and expand access to transportation options to reach surrounding areas.

Mobility Hub Elements and Typologies

Mobility Hub Elements

Mobility hubs can take on many different forms according to community context and transportation services available or planned for the site, but many share similar elements:

1. **Transit and trip-making** elements include those that support movement to and from the mobility hub site, including transit boarding and alighting, pick-up/drop-off zones, and wayfinding and trip-planning signage. Emphasis is placed on movement efficiency and safe access to and from various modes.

1. Loading zone integrated into street with cycle track 2. Bus stop with covered waiting area 3. Ticketing kiosk at transit stop 4. Real-time information sign 5. Directional signage with information about different modes

2. **Parking and charging** elements include parking and charging infrastructure for personal vehicles, shared cars, bicycles, shared micromobility devices, and electric vehicles. Parking needs vary based on the type of vehicle and duration (short-term versus long-term). On-site renewable electricity generation, especially from solar, and battery storage is also commonly used at mobility hubs to help reduce the facility's carbon footprint, protect against grid outages and insufficient capacity, and help power resiliency features such as cooling centers.

EXAMPLES OF **PARKING AND CHARGING SERVICES**

1. Electric vehicle charging stations 2. Dedicated parking for electric and carshare vehicles 3. Bike lockers for long-term bike parking 4. Bikeshare docks 5. Solar-powered electric vehicle charging station

3. **Priority access** elements include support for human-scale travel to and from the site (and for larger sites, within the site itself). These elements include sidewalks, bike lanes, safe crossings, and similar infrastructure that enables people to safely and comfortably access the hub.

EXAMPLES OF **PRIORITY ACCESS**

1. Parking-protected bike lane near a mobility hub 2. Dedicated pedestrian crossing 3. Intersection with pedestrian signals
4. HIgh-visibility crosswalk markings 5. Curb cuts and tactile warning strips for accessibility

4. **Amenities** include complementary design elements that add value to the user's experience but are not strictly essential to the function of the hub's transportation services. They could include public art, outdoor seating, shade trees, retail, library space, event and gathering spaces, postal services, cafes, restaurants, food cart/truck areas, playgrounds, medical services, schools and adult learning, social services, and many more options. These features can offer added convenience or allow people to rest and relax, making the hub a true community asset and destination.

EXAMPLES OF **AMENITIES**

1. Placemaking and seating at a small mobility hub 2. Snack kiosk in a park 3. Public Wi-Fi hub with wayfinding and event information 4. Shade trees and seating 5. Rentable community space inside a train station

Mobility Hub Typologies

Mobility hubs are built in many shapes and forms depending on the community's needs, but generally fall into three categories: minor, midsize, and major. While most mobility hub typologies feature elements related to transit, prioritized walkways and bikeways, micromobility (ex. bikeshare bikes or scooters), features and amenities can vary depending on the needs and space for the mobility hub. For example, minor hubs in different neighborhoods may facilitate short local trips while feeding into a single major hub that provides direct transit to key regional destinations. As a community plans for and builds out its mobility hub network, it is important to consider how mobility hubs with different scales and services will work together with transit routes, complete streets, and walking and biking routes to allow people to access their desired destinations.

Minor

A minor mobility hub is a neighborhood node intended to fill gaps in the transit system by connecting active transportation modes with fixed-route or on-demand transit service. It includes all of the features to support micro-mobility services, transit services, and vehicle pick-up/drop-off, but does not feature as many amenities as a midsize mobility hub.

Figure 2. Example minor mobility hub providing access to people walking and biking to neighborhood bus stop and micromobility options

Midsize

Midsize mobility hubs demonstrate how new technology can make it more convenient to pair transit with active transportation modes. For example, a high-demand bus stop could be upgraded with additional features where space allows. Long-term bike storage and prioritized vehicle parking help facilitate longer trips where users may not return for a day or more. These hubs could accommodate autonomous vehicle pick-up and drop-off in the future, as well as other new technologies.

Figure 3. Example Midsize Mobility Hub with linkages to regional bus stops, micromobility, parking and local amenities.

Major

Major mobility hubs are the largest of the three mobility hub types, located in the highest-demand areas where there is sufficient space and desire for a wide variety of travel modes. Mobility services extend beyond the right-of-way and are integrated with adjacent land uses.

Figure 4. Example of Major Mobility Hubs (left: bus bays, local amenities and linkages to amenities; right; linkages to bus and light rail as well as long term parking and amenities)

Table 1 provides some guidance on the features and elements each typology may be able to accommodate.

Table 1. Mobility Hubs Elements Matrix

● = element is recommended ○ = element may be included

Element	Major Hub	Midsize Hub	Minor Hub
Bus and/or shuttle stop	●	●	●
Fixed guideway transit stops (LRT/ BRT)	●	○	○
Transit ticket kiosk	●	●	●
Seating	●	●	○
Shelter/shade structure	●	●	●
Indoor waiting area	●	○	○
Bikeshare and/or scootershare parking	●	●	●
Short term bike parking	●	●	●
Long term bike parking	●	○	○
Personal vehicle parking	○	○	○
Carshare	○	●	○
Electric vehicle charging	○	●	○
Ride hail pick-up/drop-off	●	●	○
Wayfinding	●	●	●
Real-time information	●	●	●
Wi-Fi hub	●	●	●
Drinking water fountains/refill stations	●	●	○
Restrooms	●	●	○

Element	Major Hub	Midsize Hub	Minor Hub
Sidewalks	●	●	●
Safe pedestrian crossings	●	●	●
Dedicated bike infrastructure (e.g., bike lanes)	●	●	●
Active public space	●	○	○
Convenience retail	○	○	○

Mobility Hub Case Studies

The project team researched three examples of mobility hubs at different stages of implementation. We found that many of the case study projects have experienced challenges in securing the funding needed to provide all the desired services for the mobility hub. Some projects secured the needed funding after extending the project planning timeline, while some decided to cut back or change the amenities that would be part of the hub.

Another challenge was coordination between many groups in the planning process, resulting in conflicting opinions and requested needs. Eventually, however, agreements were reached, and problems were solved to make for a more effective mobility hub. Overall, each case study shows how the hub helped to consolidate transit routes, both local and regional, and make the act of taking public transportation more safe, seamless, and user-friendly.

Table 2. Case Studies

Case Study	Jurisdiction	Implementation Stage	Applicability
State-Owned Parking Lots as Mobility Hubs	O'ahu, HI	Feasibility	Provides an example of another agency's data-driven approach to identify potential mobility hub sites across a large and diverse geographic region.
Regional Mobility Hub Plan and Regional Mobility Hub Suitability Report	San Joaquin County, CA	Planning	Describes the hub typologies, selection criteria, and siting considerations a neighboring COG is developing to advance its mobility hub program.
Gateway Mobility Hub	Schenectady, NY	Completed	Highlights how a public transit agency has secured funding and leveraged partnerships to implement mobility hubs.

Case Study #1.: O‘ahu, HI State-Owned Parking Lots as Mobility Hubs (2024)

Electric bus and regular bus at Halawa Rail Station. Source: City and County of Honolulu

Overview

The 2024 *O‘ahu Mobility Hub Planning Study*[2] explored the potential for mobility hubs to address Hawai’i’s statewide goals around mobility, resiliency, equity, climate, and economy by centralizing transportation services and reducing vehicle miles traveled (VMT). The study used an innovative approach to analyze state-owned parking lots and their suitability for future mobility hubs. The study also outlined the features that mobility hubs should incorporate.

Design Features

This study did not aim to develop detailed concepts for mobility hubs; it used a three-hub typology similar to the one described in Section 2 -Mobility Hub Elements and Typologies, to define the general levels of functions and amenities at different hubs. It then identified sites where those hubs could potentially thrive.

The project team first sorted land on O‘ahu by urban, suburban, or rural context, then adjusted based on land use and transportation context to match land with small, medium, or large hub typologies. Next, a nuanced suitability analysis helped refine the data, looking at the intersection of transportation supply and demand with community context to

[2] This project was led by Alta Planning + Design.

see where mobility hubs can best serve the population. Land was scored using a formula that involved demand, equity, VMT reduction, and social climate vulnerability. Finally, state-owned parking lots were mapped, scored for suitability as potential hubs based on the results of the previous step, and categorized by hub typology (small, medium, or large). This analysis produced a list of the top 20 candidate locations for each hub typology.

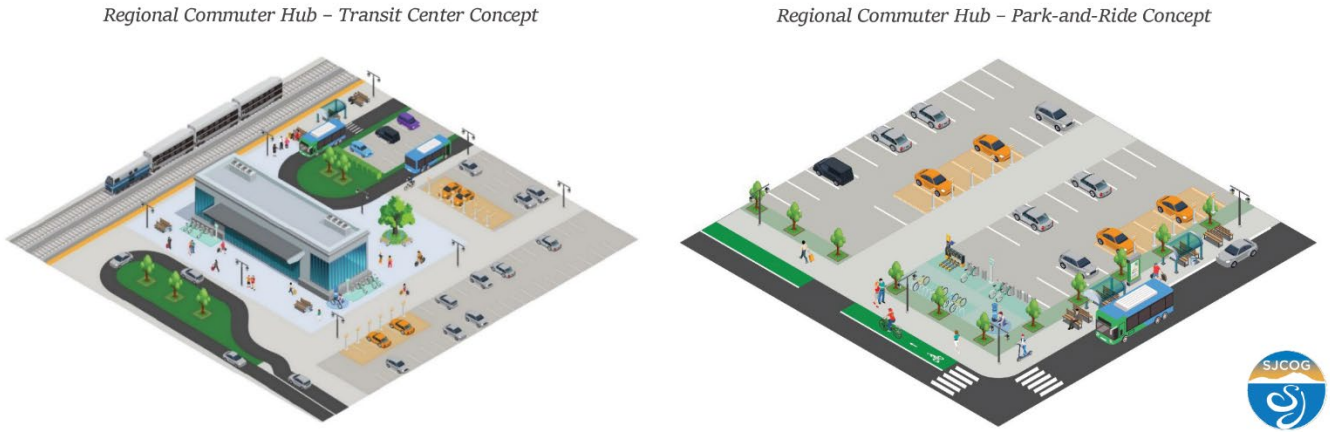
Partnerships

The Hawai‘i Climate Change Mitigation and Adaptation Commission led the study in cooperation with the Oahu Metropolitan Planning Organization (MPO) and the United States Department of Transportation (with partial funding from the Federal Highway Administration). Further partnership and engagement will be needed to implement hubs at any of the identified sites.

Comparisons to Consider

This data-led approach contrasts with a traditional site selection process by starting with a wide area and honing in on parcels with the desired characteristics (as opposed to identifying an area first, and then looking for acceptable sites nearby). In densely populated metro areas like Honolulu, where large hubs are needed but real estate may be difficult to acquire, using this approach provided O‘ahu MPO with a shortlist of large sites that they already owned.

Case Study #2: San Joaquin Council of Governments (COG) Regional Mobility Hub Plan (in-progress) and Regional Mobility Hub Suitability Report (2024)



Mobility hub concepts from the San Joaquin COG Regional Mobility Hub Suitability Report. Source: San Joaquin COG

Overview

The project is currently in the planning phase. The San Joaquin Regional Mobility Hub Suitability Report,[3] completed in 2024, developed criteria for selecting mobility hub locations and typologies within San Joaquin County. San Joaquin COG is now working on a *Regional Mobility Hub Playbook and Action Plan* that will provide guidance for siting, designing, implementing, and monitoring the performance of mobility hubs based on industry best practices. The action plan will include mobility hub site plan concepts, one of which will be selected for a demonstration project installation in the implementation phase. Community engagement has been part of the process through surveys and in-person meetings; public workshops will be held to inform design and implementation for the demonstration project, expected to be completed in 2026.

Design Features

The suitability report developed three hub typologies and a tool to identify priority neighborhoods for different typologies based on factors such as transportation infrastructure, housing and job densities, environmental conditions, and socioeconomic conditions to ensure hubs serve the communities most in need. The three hub typologies are:

- Regional commuter hubs: These large hubs feature on-site vehicle and bicycle parking, passenger pick-up/drop-off zones, and ride-sharing and taxi accommodations. They are often located at transit centers, train stations, or park-and-ride facilities.
- Downtown hubs: As the name suggests, these are located in dense urban cores and connect residents to jobs, commerce, services, and social and cultural activities. Their design relies on repurposing and managing

[3] https://www.sjcog.org/DocumentCenter/View/9774/SJCOG-Mobility-Hub-Suitability-Report---FINAL-v2

curb space and parking lanes to accommodate bike-share and scooter share, passenger pick-up/drop-off zones, transit stops, and truck loading areas.

- Community hubs: These neighborhood-scale hubs prioritize connecting residential areas to nearby parks, healthcare, and shopping centers with amenities like transit, electric vehicle charging, bicycle parking, carshare service, and micromobility options. They may fit in existing rights-of-way or be included by design in new developments.

Partnerships

San Joaquin COG created a Partner Agency Group as a touchpoint for engagement while developing the suitability report. This group consisted of representatives from San Joaquin County, municipalities in San Joaquin, and regional transit agencies.

Comparisons to Consider

As a project of a neighboring regional organization or council of governments, this effort shares a similar scope and scale to FCOG's mobility hub study. San Joaquin County features cities as well as lower-density areas similar to the rural parts of Fresno County.

Case Study #3: Schenectady, NY Gateway Mobility Hub (2023)

Gateway Mobility Hub. Source: American Public Transportation Association, "Passenger Transport"

Overview

Officially opened in 2023, the Gateway Mobility Hub project transformed a small park and bus stop into a hive of transit activity that accommodates bus rapid transit, car share, and bike share in Schenectady, NY (population 68,544). Located adjacent to the State University of New York Schenectady County Community College (SUNY Schenectady), several apartment complexes, a career development organization, and downtown restaurants and retail, the hub provides increased mobility options for residents and complements burgeoning residential and commercial development in downtown Schenectady. As Capital District Transportation Authority's (CDTA's) first mobility hub, Gateway Mobility Hub helped the agency consolidate services for easier access and proved to be a successful model; as of December 2024, CDTA has added two more hubs in Troy (population 50,607) and Albany (population 101,228).

Design Features

The project added modernized, heated shelters to the bus waiting area and improved the existing Gateway Plaza Park with new lighting, seating, sculptures, and landscaping. Streetscape improvements included sidewalks with snowmelt pads, upgraded traffic signals, and a queue jump lane for transit vehicles on State St (the main pick-up/drop-off area). The hub has dedicated parking and charging space for CDPHP Cycle!, a mixed-fleet traditional and pedal-assist

bikeshare program operated by CDTA with sponsorship from local health insurer CDPHP; DRIVE, an all-electric carshare service operated by CDTA; and private electric vehicles.

Partnerships

The project was a partnership between CDTA, the City of Schenectady, the Schenectady Metroplex Development Authority, and Schenectady County. Its total cost was $4 million, and more than 80% of the funding came from federal sources.[4] CDTA operates the Gateway Mobility Hub on land owned by the City, County, and Metroplex. Metroplex is a sales tax-funded public benefit corporation of the State of New York whose mission includes enhancing economic vitality and quality of life in Schenectady County, attracting private investment, and assisting with real estate acquisitions and redevelopment.[5] Metroplex played a key role in the project by purchasing part of the site and demolishing a vacant bus station to set the stage for CDTA to create the new regional transportation center in downtown Schenectady.

Comparisons to Consider

This midsize mobility hub upgraded an existing transit stop and aimed to simultaneously improve service for existing transit users and attract new users through increased options and accessibility. CDTA's mobility hub efforts reflect the importance of partnerships. The Schenectady hub was a collaboration between CDTA and three state and local government partners. Subsequently, to open additional mobility hubs in Albany and Troy, CDTA worked with public and private partners including the City of Albany, City of Troy, and St. Peter's Health Partners.

[4] https://www.cdta.org/news/gateway-mobility-hub-opens
[5] https://www.schenectadymetroplex.com/about-us/

Implementation Considerations

Mobility hub implementation is shaped by the priorities of nearby community members and potential future users of the hub, as well as the partners who will be involved in funding and implementation. The following section provides guidance on the physical and siting considerations for the implementation of Mobility Hubs.

Physical Element Considerations

Table 3 provides more detail about the physical elements of mobility hubs that should be considered when analyzing potential sites.

Table 3. List of Potential Physical Considerations

Element Type	Example Physical Elements

Transit and Trip-Making Services	• High-quality, large-scale shelters/stations
	• Bus pads
	• At-grade boarding platforms
	• ADA compliant with space for back-loading vehicles and curb ramps
	• Pre-payment and ticketing
	• Microtransit, paratransit, and demand-responsive transit pick-up and drop-off areas
	• Ride hailing pick-up and drop-off areas
	• Loading/delivery zones and delivery storage lockers
	• Static or digital wayfinding
	  ○ Kiosks (trip planning /wayfinding)
	  ○ Signage
	  ○ Ambassadors
	  ○ Real-time transit arrival screens
	  ○ Wayfinding that is large, loud, and clear
	  ○ Wayfinding that is pictural and multilingual
	• Microgrid for electric transit needs *(Note: FCRTA's Fresno County Microgrid & Multimodal Resiliency Hub Feasibility Study[6] provides example microgrid concepts with dimensions.)*
	  ○ Solar power generation (solar panels, batteries, inverters, and control towers)
	  ○ Electric microtransit vehicle charging
	  ○ Electric bus charging
	• Mobile apps to enable physical/digital integration

Parking and Charging Services	• Secured, longer-term bike corrals, structures, or lockers • Shorter-term bike racks • Bikeshare/scootershare parking with charging or geofence • Bike repair stations • Parking with charging for private electric vehicles • Carshare parking • Smart parking, if integrated into parking facilities, including technology for payment and automated parking guidance systems

[6] https://www.ruraltransit.org/wp-content/uploads/2024/05/FCRTA-Microgrid-Study_FINAL_5.2024.pdf

Element Type	Example Physical Elements

Priority Access	• ADA-compliant accessibility
	• Internal walking paths (including within parking areas/structures)
	• Prioritized walkways
	• Prioritized bicycle and micromobility access
	• Safe bicycle and pedestrian crossings
	  ○ High-visibility crosswalks
	  ○ Lighting
	  ○ Pedestrian signals
	  ○ Protected intersections
	  ○ Curb extensions
	  ○ Median refuge islands
	• Surrounding neighborhood walkability
	• Well-connected by off-site infrastructure (sidewalks and bikeways)
	• Connecting protected/separated walking and bicycle lanes (Class I, IIb, or IV)
	• Traffic calming speed controls

Amenities for Success	• Safety and comfort
	  ○ Lighting
	  ○ Benches/seating
	  ○ Shade and rain cover
	  ○ Windbreaks
	  ○ Bathrooms
	• Trash and recycling
	• Wi-Fi and router room
	• Electrical power (solar ideal) and outlets
	• Programmable space *(Note: The characteristics of programmable space at a hub [e.g., size, flexibility, indoor vs. outdoor] will determine what types of programming can occur, so it is important to consider programming needs early in the site analysis process.)*
	  ○ Food and drink
	  ○ Retail and other space activation
	  ○ Soft play space or playground
	  ○ Gathering space for events and meetings (consider number of people and level of privacy/separation from other hub functions)
	  ○ Space for pop-up vendors or trucks
	  ○ Community-serving uses including medical care, social services, and workforce training
	• Sustainability and resiliency features
	  ○ On-site renewable electricity generation and storage
	  ○ Cooling centers
	  ○ Emergency shelter areas
	  ○ Rainwater capture
	• Sustainable, pleasant landscaping
	  ○ Stormwater capture
	  ○ Shade and screens
	  ○ Tree tunnels
	  ○ Indigenous xeriscaping

Site Selection Considerations

As described in Section 2 -Mobility Hub Elements and Typologies, mobility hubs should be the appropriate scale for the communities they serve. It is also critical to consider the range of services desired at each hub to select a site that can accommodate the required infrastructure. Potential sites for a mobility hub should fit within the natural patterns of people's lives and the transportation system. These sites should also be reasonable candidates for development. This Study will ultimately identify four mobility hub sites reflecting the wide range of communities within Fresno County (ex., large and small cities, rural places, areas with high residential concentration, areas with high employment concentration, and places both with and without existing public transportation options).

Physical Element and Site Selection Considerations Described in Upcoming Study Documents

Implementation considerations for other practical factors, including site ownership and jurisdiction, development partnerships, location access, utility availability, permitting, environmental review, and other topics, will be evaluated in subsequent documents, including Memo 3d: Shortlist Location Evaluation; Memo 4b: Selection of Four Sites for Concept Design; Memo 4c: Basis of Design Report for Four Sites; and numerous documents prepared during project Phase 5: Develop Planning-Level Cost Estimates and Phase 6: Draft and Final Plan.

Memo 3d, which evaluates the potential for mobility hubs at numerous short-list locations, is underway by the project team and is expected to be finalized several weeks after this document, Memo 3b. Memo 3d summarizes implementation and site suitability topics for each of the three transit agencies to consider as they determine which location(s) to use for this study’s complete concept design and cost estimation analysis. Clovis Transit and FAX will each select one location, and FCRTA will select two locations.

Appendix

Slides from Steering Committee Meeting – February 25, 2025