

Play 6

MEASURE PERFORMANCE AND ITERATE

Mobility hubs are like a living organism. Conditions within and around the hub area can change over time. Travel needs and the way people move and use the hub can also shift over time. Cities, transit agencies, and community organizations need to continually calibrate, augment, and enhance mobility hubs to meet the community's needs.

How do you know your hub is meeting its goals and objectives? Are the design, operation, and types of features at your hub achieving the intended outcomes that you set out with your community stakeholders? **Consider your mobility hub a living asset, providing a service that meets mobility and community objectives.** Tracking performance, iterating on hub design, and monitoring operations is essential to the success of a hub. As a hub manager, you should build a comprehensive performance measurement system for the hub or system of hubs that you oversee.

SYSTEM AND HUB PERFORMANCE

Performance measures help to track success toward mobility hub goals at individual locations.

Beyond the community-anchoring elements of hubs, **mobility hubs are a product – a collection of components, features, and experiences – to be designed, implemented, and evaluated.** Flexible in their design, mobility hubs are the sum of their parts, their surroundings, and their users. Determining whether the correct mix of components, features, and experiences at each hub helps support sustainable access and mobility, public realm, customer experience, and information goals requires tracking key performance indicators (KPIs) and metrics.



The Vallejo Ferry Terminal's kit of parts are a product that can be evaluated.

Source: Marinas

KEY PERFORMANCE INDICATORS AND METRICS

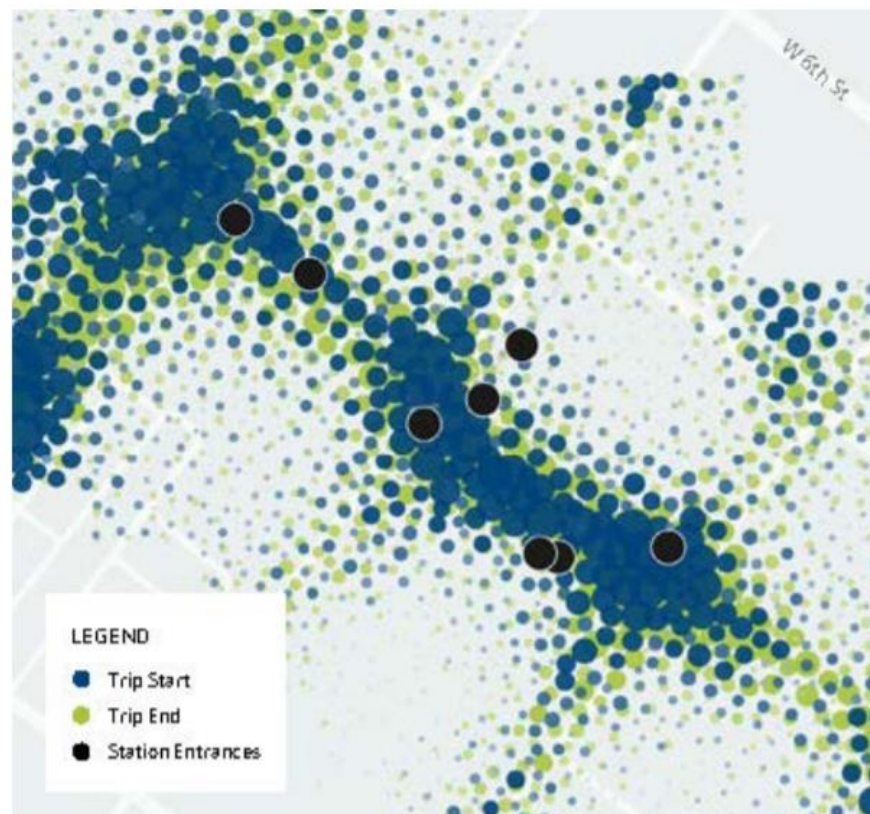
KPIs measure the most critical policy objectives of mobility hubs, help track progress used since installation, and can identify potential room for further improvement. KPIs can also compare success across hub locations to quantify the impact of elements in diverse environments or on key values. KPIs are standard metrics used by most mobility hubs and should be collected both prior-to-installation and routinely afterward at set intervals.

Metrics measure the ability of the mobility hub itself and the network of hubs to solve problem areas, and to meet hub-specific mobility and community needs. As a result, metrics can vary by hub, or by hub typology, to align with specific problems in that location and use quantitative and qualitative measurements that reflect the problem statements.

For the Bay Area to reach its climate, equity, and quality of life goals, regional mobility hubs must be welcoming places for people using a diversity of modes and mobility services – regardless of race, economic condition, age, or ability. Mobility hubs will be natural nexuses for activity; Bay Area travelers seek out hubs for their transportation needs and transfer among transportation modes at hub locations. However, hubs should also reflect the places and communities that they serve, providing access to education, health,

social, and economic opportunities. Mobility hub performance measurement systems should measure the spectrum of mobility and community outcomes that local cities, transit agencies, and community organizations seek to achieve.

Figure 15 presents potential KPIs and metrics that mobility hub managers can monitor and base decisions on.



LADOT dockless scooter trip start and end activity outside 7th Street/Metro Center station entrances. This is an example of how hub managers can track access, deployment, and operations at mobility hubs.

Figure 15 Key Performance Indicators and Metrics for Mobility Hubs

Measure	KPI or Metric	Data Collection Method	Goal
Coordinated Mobility			
# of daily transit boardings and alightings	KPI	Automated Passenger Counts (APC)	Increase
# of new transit transfers at hubs	Metric	Clipper/APC/Survey	Increase
# of average daily and peak microtransit and shuttle boardings and alightings	Metric	MOU data share or other feed specification	Increase
# of bike share, scooter share, and car share trip starts and ends at mobility hub (average daily, monthly, and annual)	KPI	General Bikeshare Feed Specification and Mobility Data Specification	Increase
Average shared micromobility dwell time at mobility hub	Metric	Mobility Data Specification	Decrease (with management)
Bike share, scooter share, and car share average trip distance/trip duration for trips starting or ending at the mobility hub	Metric	General Bikeshare Feed Specification and Mobility Data Specification	Monitor
# of additional bike parking spaces		Survey, manual counts	Increase
Average daily bike parking utilization rate	KPI	Survey, manual counts	Increase
# of TNC pickups and drop-offs (PUDO) events	Metric	MOU data share, visual survey, video	Increase (with management)
# of deliver events and dwell time	Metric	MOU data share, visual survey, video	Monitor

Measure	KPI or Metric	Data Collection Method	Goal
Climate Action			
Arrival mode share to hub	KPI	Intercept survey or travel diary	Increase in non-auto modes
Trip reduction	KPI	Intercept survey or travel diary	Increase
Average access distance (miles) of hub user	Metric	Intercept survey or travel diary	Decrease
EV charger utilization (average daily vehicles charged) and charge time	Metric	Charging network API	Increase
Equitable Mobility⁷			
Average household vehicle ownership	KPI	Intercept survey or travel diary	Decrease
Age-diversity of hub users and surrounding community	Metric	Intercept or visual public life survey, Census data	Increase in youth and elderly cohorts
Racial diversity of hub users and surrounding community	Metric	Intercept or visual public life survey, Census data	Increase in BIPOC travelers and hub users
Income diversity of hub users and surrounding community	Metric	Intercept or visual public life survey, Census data	Increase in low-income and hub users
% of income spent on transportation	KPI	Intercept survey, Census data	Decrease

⁷ Equitable mobility indicators should be co-developed and vetted by community partners during initial community engagement and community needs assessment.

Measure	KPI or Metric	Data Collection Method	Goal
Exceptional Experience			
Peak hour of daily use/pedestrian counts	KPI	Public Life Data Protocol (full or modified method - see Common Data Standards to Measure Performance call out box below)	Monitor to understand potential displacement
Public life (see callout on page 94)	Metric	Public Life Data Protocol (full or modified method)	Increase
Legibility	Metric	Intercept survey, Public Life Data Protocol (full or modified method)	Increase
Customer satisfaction score	KPI	Intercept and employee survey	Increase
% of space dedicated to public realm, lingering, and non-mobility functions	Metric	Public Life Data Protocol (full or modified method)	Increase
Value			
Average property values	Metric	County assessor data	Monitor for potential displacement impacts
Small business retail revenue at mobility hub	Metric	Survey	Increase
Private investment in public mobility	KPI	Survey	Increase
Value of amenities integrated into adjacent development/properties	Metric	Survey	Increase
Safety			
Annual collisions, serious injuries, and deaths	KPI	Police reports, UC Berkeley SafeTREC Transportation Injury Mapping System (TIMS), other local reporting mechanisms	Decrease
# conflicts between vehicles, pedestrians, and cyclists	Metric	Camera counts	Decrease
Comfort	Metric	Intercept survey	Increase

TRANSPARENCY AND REPORTING OUT

The purpose of reporting out KPIs and metrics is to determine whether individual mobility hubs meet intended outcomes and to adjust their hub features or design to better meet targets. Understanding hub performance also helps MTC gauge which features are more impactful under which conditions and guide local jurisdictions on how to design, implement, and manage their hubs. Evaluation is a key step in refining the network and hubs themselves.

The successful implementation of mobility hubs has the potential to not only reduce travel times, improve utility, and increase convenience for users, but also extend the reach of existing transit and active transportation investments from MTC and local partners. Mobility hubs provide great potential to influence transportation choices and patterns when optimized for performance at their individual locations.

Measurement Methods

Evaluation of mobility hubs can be conducted with both quantitative and qualitative data sources. Mobility hub mode utilization can be measured through travel surveys, data partnerships or agreements, or data feeds from private and public mobility providers.

Where possible, data fed into the dashboard platform should be automated using standard data formats and feed

specifications (see Common Data Standards to Measure Performance call out box for examples). Ridership and transfer data from transit agency automated passenger counters (APCs), ridehailing companies, bike share and scooter share companies, parking meter utilization and duration, and electric vehicle charging data can be requested and organized from providers to automatically update on the dashboard. The Mobility Data Specification format can be used to actively manage this data from private shared mobility companies.

Utilization and volume data can also be collected through passive data platforms (like Streetlight) and internet service providers. Community engagement should not stop at project planning and initial design. Hubs and mobility systems may be outdated and need improvement the moment the ribbon is cut. Intercept surveys of hub users can also inform mode split, customer satisfaction, and recommendations for improvement of hub elements or hub design. You should gather critical insights to measure performance, ensure management and operations is human-centered, and base hub iteration on community needs and perspectives.

Evaluation Frequency and Tools

KPIs and other metrics should be collected and analyzed on an annual basis, at minimum, and monthly for more responsive evaluation and iteration. Regular reporting should be established through a data platform or dashboard that can be accessed by decision-makers at any point in the evaluation cycle. The use of dashboard and regular reporting will ensure progress is tracked over time in a transparent fashion, and a spirit of continual iteration with regular mileposts is built. Decision points and threshold values for KPIs can be set for when a hub should be reevaluated in greater detail. By reporting data to the same platform over time, patterns can emerge of how hubs mature and how hub performance may diverge in different locations. These patterns can highlight priority hubs that require investment or redesign.

Common Data Standards to Measure Performance

Data standards are critical to accurately and efficiently measure mobility hub performance. While mobility hub performance measurement should consist of a mix of quantitative and qualitative data sources, data standards can simplify performance measurement and offer a mix of real-time and historic looks at performance. The Open Mobility Foundation's [Mobility Data Specification](#) and the Gehl Institute's [Public Life Data Protocol](#) are two examples that cities and transit agencies should consider.

Mobility Data Specification

MDS is a data specification managed and curated by the Open Mobility Foundation. MDS is a set of modular Application Programming Interfaces (APIs) used to process data from dockless e-scooters, bicycles, mopeds, and carshare – similar to GTFS and GBFS formats for transit ridership and performance data. Unlike GTFS and GBFS, MDS establishes a common language for information to be conveyed between mobility providers and local transportation agencies. Used by more than 90 cities and public agencies around the world, MDS helps cities interact with private shared mobility companies operating in the public right-of-way. Three distinct components are part



Auditors collecting public life data. Source: Gehl Institute

of MDS: the *provider* API, the *agency* API, and the *policy* API.

The *provider* API is most useful for tracking performance of a mobility hub. When a municipality queries information from a mobility *provider*, the *provider* API has a historical view of operations. The *agency* API was designed for regulatory agencies to capture specific events, such as trip starts, and allows for the monitoring of mobility services in real-time. The *policy* API enables cities and transit agencies to convey operational requirements and restrictions digitally, which could be an important hub management tool for hubs that organize shared mobility services.

Public Life Data Protocol

The Protocol establishes a common format for the collection and storage of metrics relating to people moving and staying in public space. Now used by over 250 cities around the world, the Protocol outlines a series of data collection approaches to public spaces that maps hub elements and counts multimodal activity to answer whether the mobility hub achieves its goals at the site. Tools include people moving counts, age and gender counts, stationary activity mapping, and intercept surveys. [The Gehl website](#) offers Public Life Data Protocol guides including criteria, tallies, mapping.

Data Partnerships

Where data cannot be required of permitted or contracted providers, you should develop data partnerships with mobility providers using memoranda of understanding (MOU). MOUs should be developed to clearly specify and collect anonymized data including:

- Origin and destination pairs
- Miles traveled per trip, on average, or a gross total
- Unique user counts
- Number of repeat users

Privacy and competitive concerns may prevent the ability to present all this data to the general public, but the dashboard can remain internal to the mobility hub manager and decision-makers. Multimodal volume counts can also be structured for easy upload to the data platform.

Pilot-to-Permanence Decision-Making & Scaling

Making performance-driven design and operational changes will create a direct link between hub features, use, and alignment against stated outcomes. Hubs are intended to be flexible and adapt to surrounding conditions. For tactical pilot project installations, where performance data provides a case for successfully meeting goals, funding for permanent features should be pursued.

Performance-driven design and flexibility also allows for hubs to be scaled – in size or mix of elements – as demand increases or as hub contexts evolve. An Emerging Urban District Hub may transition to an Urban District hub as residential or employment density increases with development. KPIs may indicate that shared micromobility stations and bike stations with end-of-trip facilities may further increase bicycle mode share and reduce VMT.

When building your initial hub design, you should factor in elements that can be scaled or enhanced over time to ensure seamless improvements and positive hub performance over the long-term.

