

Bike Share Research Brief

What is bike sharing?

Depending on the format of the bike share, can be comparable to public transit (docked) or ride share (dockless). Up to the municipality to determine how to define success for the chosen model of bike share.

Types of Bike Share:

Docking (e.g. Bixi, CitiBike)

- Users must seek a docking station with available bikes to acquire a bicycle, and must return the bicycle to a docking station at the end of their trip.
- Limitations include arriving at a destination with no available docking spaces.
- Advantages include better tracking, designated parking areas for bikes, visual concentration of bicycles, secure locking is more theft-proof, and allows for sponsorship branding.
- Challenges include rapidly scaling up to provide ideal coverage and inventory immediately or shortly after launching (failures/near failures include Seattle's Pronto and Toronto's Bixi early years). Docking stations are vulnerable to defects, technology glitches, vandalism – each lock is a point of failure.

Dockless (e.g. Lime)

- Almost half of bikeshares in US are now dockless
- Benefits: flexibility, lower cost, cheaper for users, no capital investment from cities
- Challenges: use of ROW, user predictability, long-term viability, equity (e.g. requires access to smart phones, credit cards)
- 7 metrics of demand: density, demographics 25-44 yo, employment density, mode share, network connectivity, transit service
- Chicago used tape and geofencing by vendors to define parking zones in the RoW, or added parking in the pavement where available.
- Municipalities can tighten up parking requirements in contracts to create a little more order to the system (ie parked in clearly designated areas)
 - Washington DC Terms and Conditions as part of Public ROW Occupancy Permit to regulate dockless bikeshare in pilot project
 - Data requirements for evaluation and planning, specifications, where they can and cannot park: [see this interesting article about the value of requiring data](#).

- Seattle created **permit application** for dockless after their own docked bikeshare failed
- Indiana town signed MOU with LimeBike in creative partnership with Universities, transportation, etc , including data requirements
 - No RfP, not exclusive to LB
- LimeBike always sees ridership peak after launch excitement and precipitous drop 6 months in, followed by evening out; experiencing higher ridership of e-bikes, despite higher fees: expect bikeshares to get out of the pedal bike business
- E-scooters (skateboards with handles) a huge new market to reach people who aren't interested in biking
- Challenges include: Hoarding bikes (taking the bike inside your apartment, workplace, out of public access); GPS inaccuracies; Theft and vandalism

Hybrid (e.g. SoBi Hamilton, Blue Bikes New Orleans)

Designated hubs for SoBi so that bikes are visually concentrated in a location, but not constrained to being parked in a "dock" that could be full. Users pay convenience fee for locking "out of hub".

- New Orleans' bike share system is owned and operated by JUMP.
- Previously \$1.00 "convenience fee" charged for locking out-of-hub; \$0.75 credit given for returning an out-of-hub bike into hub.
- Out-of-hub fee removed in effort to reduce financial barriers, improve access to alternative transport, and ensure vulnerable users could safely travel to their end destination without penalization.
- Now, \$1 credit for returning an out-of-hub bike to a hub, reducing the redistribution costs. 19% of trips end out of hub.

Bike features

- Theft/vandalism-proof: Integrated components (no exposed parts, chains, etc)
- Reverse-pedal braking
- GPS
- Puncture-proof tires
- Electric pedal-assist attractive option for Guelph due to topography

Benefits of Bikeshares:

Mode Shifts:

In suburbs and small- to medium-sized cities, where public transit can be sparse, bikesharing complements transit and provides better access to and from existing

lines. In these places, bikesharing serves as an important first- and last-mile connector and increases public transit use.

[Unraveling the Modal Impacts of Bikesharing](#)

One-way travel has, in particular, unlocked new travel options that result in modal shifts among bikeshare users. For example, a person might bikeshare in the morning to get to work and then take the bus home.

The survey responses suggest that bikesharing, especially its ease of one-way travel, results in different travel behavior than traditional cycling. Bikeshare members in Montreal, Toronto, and Washington, DC shifted away from cars, buses, and rail. In Minneapolis-Saint Paul, bikesharers shifted away from buses but toward rail: five times more bikesharers increased their rail travel than decreased it. And in contrast to members in the other cities, more bikesharers in Minneapolis-Saint Paul increased their number of walking trips (38 percent) than decreased them (23 percent).

Among all cities, on average 40% of bike sharers drive less as a result of the bikeshare.

Governance Models

The public-private model:

This is the model that is probably the most common and most diverse in the details of its implementation. In this model a public entity such as a municipality provides support for a bike share system that can be owned and operated by a private company, or partially owned by the municipality and operated by a business or not-for-profit organization. As the owner of the public right-of-way (ROW), municipalities have a significant stake in determining who may operate public bike share on the ROW and under what terms. Also within this form of model, municipalities may choose to provide start-up or ongoing financial support to a bike share partner. The degree to which a municipality or other public entity is involved can vary from being the owner of assets, to primary financial sponsor, to simply licensing access to the ROW for a selected bike share partner(s). Examples of the public-private model include Sobi Hamilton, Mobi in Vancouver and Bike Share Toronto.

The public ownership and operation model:

In this model a public entity such as a municipality, utility or statutory corporation owns and operates the bike share system in a manner similar to the provision of public parking or transit. Purchase of bicycles, stations and technology is done through capital budgets. Operating budgets rely upon revenues from user memberships and rental fees, and often require subsidy from the public owner. Grants for capital funds from upper levels of government or government agencies are often available to purchase equipment and fund the start-up of bike share

programs. The availability of additional grants for operating expenses or fleet replacement is less common. Examples of this model include the Santander Cycle system in London, England.

Commercial or not-for-profit ownership and operation:

In this model the community bike share system is owned and operated by a for-profit or not-for profit organization with lesser or no financial support from the municipality. This model of ownership and operation can exist with and without municipal permissions (licenses) to operate. There has recently been concern expressed by some municipalities where “rogue” bike share companies have attempted to operate within the municipal ROW without proper consultation with the municipality (San Francisco, Chicago, Austin).

- Source: [Community Bike Share and DropBike Pilot Agreement Council Report](#)
- Non-profit downfall : city may not have much say over operational matters (Pronto, Seattle experience)

Risks and Liability

All

- Success may look different to different stakeholders: e.g. revenue neutral? Equitable access? High ridership?
- Helmet debate

Docked

- Liability of injury during use
- Vandalism/damage to docking stations or bicycles are a cost risk
- Costs and resources required to regularly rebalance/redistribute bikes
- Cost of equipment
- Cost recovery will not be 100% from revenues. Estimate subsidizing the cost

Dockless

- Liability of bicycles obstructing public rights of way (AODA, trip hazards, obstructing sight lines, etc)
- Risk of public reputation being damaged by “messy” public spaces
- Risk of injury or harm if bicycles obstruct roadways walkways or other areas where people could run into them
- Operational costs to put bicycles in appropriate/designated areas
- If you don’t have adequate bike parking throughout the city, you run risk of bikes ending up in garages, on porches, in backyards inaccessible to other users
- Start-up nature of these companies makes them vulnerable to disappearing or being unable to keep up their service level agreements

Hybrid

- Administration and/or operational component is resource intensive (e.g. SoBi)
- Risk of being saddled with outdated assets (docked bikeshare bicycles) that no one wants to purchase if move to a different format
- Cost of equipment
- Cost recovery will not be 100% from revenues. Estimate subsidizing the cost