



**DRAFT FINAL STRATEGIC
ANALYSIS REPORT**

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Local and Regional Bike Sharing Organizational Models

INITIATED BY COMMISSIONER AVALOS

SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY



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Executive Summary

This report investigates the strengths and tradeoffs of various organizational models for the expansion of bike sharing in San Francisco and throughout the Bay Area region so that San Francisco can make this emerging mode of transportation as effective as possible within the boundaries of the city while also contributing to regional transportation goals. Data shows that more than 90% of trips on the current Bay Area Bike Share pilot are taken within San Francisco, anchoring the regional program. Since a strong regional bike sharing system benefits both San Francisco and the region, we recommend that San Francisco participate in the establishment of a regional program and that the San Francisco Municipal Transportation Agency (SFMTA) work with regional stakeholders to set standards for such a system, including a seamless regional user interface, consistent pricing, adequate staffing, and appropriate agreements on cost and revenue sharing among agencies and jurisdictions. However, we recognize that the extensive coordination and planning efforts required to define the governance structure and administration/operations model of a regional system could take a fair amount of time. Since SFMTA planning documents call for significant expansion of bike sharing over the next few years, we recommend that the agency continue to pursue growth of its bike sharing system at the local level, while ensuring these decisions do not preclude the ability to meet regional standards. At the same time, we urge SFMTA to further define its local goals for bike sharing and develop an evaluation strategy that ensures achievement of those goals. San Francisco should also maintain flexibility, keeping open the possibility of shifting some

governance functions to a regional bike sharing program in the future if it makes sense. As Bay Area stakeholders, including San Francisco, work to define how the regional system will be administered and operated, we recommend exploring a hybrid model where a non-profit partnered with a public agency administers the program and a private-sector contractor operates it. This model could leverage the experience of a private-sector operator and the administrative and organizational capacity of a public agency while also providing the benefits of a smaller, more nimble non-profit entity, including the ability to focus its mission primarily on the bike sharing effort, to fundraise, and to more easily receive private donations.

1. Background

1.1 ABOUT STRATEGIC ANALYSIS REPORTS: PURPOSE OF THE DOCUMENT

Strategic Analysis Reports (SARs) are prepared periodically by Transportation Authority staff to analyze complex topics and to advise the Transportation Authority Board in developing policy regarding emerging transportation issues. This SAR, initiated at the request of Transportation Authority Board Chair Avalos, analyzes organizational models for local and regional bike sharing to inform upcoming system development decisions at both levels.

As local and regional stakeholders are currently working to define a governance model for a successful regional bike sharing system beyond the initial Bay Area Bike Share pilot program, now is an opportune time to examine the advan-

tages and tradeoffs of various models. This SAR describes the history of bike sharing in the Bay Area and the current status of the regional pilot program. It then analyzes the tradeoffs of the various organizational structures that could be chosen to implement a permanent regional bike sharing program. The report applies a lens of San Francisco's desired outcomes to achieve in the next phase of the bike sharing system: rapid and sustainable expansion, regional user interoperability, and local geographic and social equity to each of the potential models. The report also discusses other potential goal areas and issues to consider as the program matures. Additional information is available from the cited sources, or by contacting the Transportation Authority.

1.2 BASICS OF BIKE SHARING

Bike sharing is a service in which bicycles are made available for shared use to individuals on a very short-term basis. The main purpose is transportation: bike sharing allows people to depart from point A and arrive at point B without the costs or security concerns associated with bicycle ownership. It aims to increase bicycling, provide a first-mile/last-mile connection to transit (particularly regional transit), and offer an easy and convenient way for frequent and occasional riders to make short trips. In some cases, it can also serve as an alternative to transit, reducing peak loads and crowding on an established transit system while also providing the public health benefits of an active transportation alternative. Similar to car sharing, there is a membership fee (annual or short term) and usage fees that are typically paid with a credit card. Trips of 30 minutes typically do not incur an additional usage charge, with costs increasing for use beyond that time frame.

Bike sharing systems were first implemented in the 1960s in Amsterdam with white painted bicycles that could be used by anyone, and did not use any sort of locking/anti-theft technology. Modern bike sharing (so called 3rd generation) systems started appearing more than six years ago with large programs in cities such as Paris, Barcelona, and Shanghai. Numerous domestic systems have launched recently, particularly in the last three years.¹ Examples of the various models are discussed in Section 2 and in Attachment 3. Implementing bike sharing has been a San Francisco priority since the mid-2000s, and the San Francisco Municipal Transportation Agency (SFMTA) has been actively working on ways to bring a program to the city since 2008.

1.3 HISTORY AND CONTEXT OF BAY AREA BIKE SHARE

In 2010, the SFMTA submitted a letter of interest to the Metropolitan Transportation Commission's (MTC) Bay Area Climate Initiatives (BACI) Grants Program for startup pilot funding for a San Francisco bike sharing program. A number of other entities from the region submitted similar requests for funding, including the Valley Transportation Authority, SamTrans, the Bay Area Air Quality and Management District (Air District), and the Bay Area Rapid Transit District

(BART). Upon receipt of the various letters of interest, MTC directed the prospective applicants to develop a proposal for a coordinated regional bike sharing pilot program that would provide advantages such as a single regional interface for users, leveraging the scale of the system in negotiations with a potential vendor, and reducing the burden of startup costs to one entity.

The Air District agreed to be the grantee and overall project lead, and, together with the local agency partners, developed a plan to implement a 1,000 bike pilot system at 100 stations, with 500 bikes and 50 stations in San Francisco and the remaining bicycles and stations in Redwood City, Palo Alto, Mountain View, and San Jose.² In addition to a \$7.1 million BACI grant and other regional funds, which covered the majority of the pilot costs, participating local agencies contributed additional funds. San Francisco contributed more than \$500,000 in locally controlled funds in addition to in-kind staff time. Following negotiation of a regional interagency agreement, procurement and award of a vendor contract, and environmental clearance and permitting, the program launched on August 29, 2013, more than a year after the initially scheduled launch of May 2012. Due to higher-than-anticipated costs, the project launched initially with only 700 bicycles and 70 stations. Of these, 350 of the bicycles and 35 stations are in San Francisco. The Air District, in partnership with the participating jurisdictions, plans to expand the pilot by an additional 300 bicycles in 2014, with 150 of these bicycles and 15 of these stations to be added in San Francisco.

Because dense areas with numerous destinations in close proximity generate more bike sharing demand,³ the pilot bike share stations are located near cities' downtown areas and, along the Peninsula, near Caltrain stations. San Francisco sited two stations at the 4th and King Caltrain station and established stations throughout its downtown and Civic Center areas. This setup created a first mile/last mile connection for regional commuters using Caltrain among cities piloting the system while also providing local access within downtown San Francisco. Based on a suitability analysis designed to maximize trip making that considered eleven factors, as well as public input in the form of public meetings and crowdsourcing technology, the SFMTA selected the Mission and Upper Market/Castro neighborhoods for the next set of pilot stations, anticipated later in 2014.

Compared to the potential size of a fully built-out system, San Francisco's initial bike sharing pilot is relatively small in size. Research shows it is important for expansion to occur quickly so the San Francisco system can reach a size where stations and bicycles are located in enough places to become a viable option (also known as "critical mass") to travel to and from major trip attractors—a necessary condition for the system to succeed and reach financial sustainability.⁴

1 Examples of U.S. cities with large bike sharing systems include: New York, NY; Chicago, IL; Washington, DC; Boston, MA; Chattanooga, TN; Denver, CO; and Miami, FL.

2 BART was not part of the final consortium, but has expressed interest in the future expansion of the existing pilot.

3 Source: Mineta Transportation Institute, 2012; Toole Design Group, 2013

4 Source: *ibid*

BIKE SHARING AND BIKE RENTAL COMPANIES

~~The Bay Area Bike Share pilot has highlighted the need to be sensitive to the interplay of the system with bicycle rental companies in San Francisco. Bicycle rentals generally serve a different market than bike sharing, with minimal overlap. Most customers of rental companies in San Francisco take the bicycles for longer rides over the Golden Gate Bridge or around the city, often exceeding the standard 30-minute free window for bike sharing usage. Nevertheless, clear signage designating the different pricing structures and intended usage, along with efforts to educate hotels, the San Francisco Tourism Bureau, and local businesses will be critical for the two markets to thrive in parallel, particularly as the city considers expanding bike sharing towards areas with more tourism such as Fisherman's Wharf and the Marina.~~

The Bay Area Bike Share pilot has highlighted the need to be sensitive to the interplay of the system with bicycle rental companies in San Francisco. Bike sharing is designed, and priced, to complement the city's transit system and serve users making short trips, with the vast majority of trips 1) lasting less than 30 minutes and 2) being taken by annual subscribers, not visitors.* Traditional bicycle rentals are designed to serve longer time periods, from several hours to several days. For instance, a three hour ride across the Golden Gate Bridge on a Bay Area Bike Share bicycle would cost more than \$40, while the same trip from a traditional bicycle rental company would cost significantly less, around \$30.* As the city considers expanding bike sharing towards areas with more tourism such as Fisherman's Wharf and the Marina, it will be critical to provide clear signage designating the different pricing structures and intended usage to ensure tourists understand the difference between the two options. Efforts to educate hotels, the San Francisco Tourism Bureau, and local businesses on how to direct visitors to the best option based on their intended use will also ensure both can thrive in parallel.

* SOURCE: Tyler Field, Bay Area Bike Share Data Challenge (<http://thfield.github.io/babs/>)

The SFMTA has completed the required environmental review to install an additional 500 bicycles beyond the amount allotted through the Air District's initial Bay Area Bike Share pilot, for a total of 1,000 bicycles in San Francisco, and its long-term desire is to continue to expand the system to 3,000 bicycles and 300 stations (see Rapid Expansion goal in Section 1.3).⁵ The regional pilot is scheduled to end in August 2015, but the SFMTA may seek to expand beyond its allotted 500 bicycles before then, either by amending the Air District's contract or through a separate agreement with the regional program vendor (Alta Bike Share).

In spite of its relatively small size, bike sharing has had significant use in across the region, with more than 140,000 miles ridden by users through February 2014.⁶ Thus far, the vast majority (around 90%) of Bay Area Bike Share trips have been on bicycles located in San Francisco,⁷ likely due to the higher number of bicycles, the city's density, its diverse

land uses, and its robust bicycle infrastructure compared to the other participating jurisdictions.

1.4 EXPANSION CONSIDERATIONS

A permanent bike sharing system in San Francisco would benefit from integration with a regional system. However, the success of a regional system will also likely depend on a healthy and robust bike sharing system in San Francisco. There are more than four times as many annual memberships in San Francisco than any other Bay Area county, but as an indication of the regional demand for bike sharing, Alameda County has the third highest number of memberships in Bay Area Bike

Share, after San Francisco and Santa Clara counties, even though there is currently no bike sharing infrastructure in the East Bay.⁸ A regional system could be a cost effective way to complete the first and last mile of reaching regional transit destinations, removing a final barrier for those wishing to take transit into San Francisco rather than drive, thereby reducing congestion on freeways and local streets. Studies have shown that bike sharing is often used for this purpose in lower density, outlying areas near regional transit.⁹ Similar studies have shown that bike sharing can reduce crush loads on transit in the inner core of urban areas, another challenge for SFMTA and BART service in downtown San Francisco.¹⁰

The Air District plans to evaluate the initial Bay Area Bike Share pilot on its ability to reduce criteria pollutants and carbon dioxide emissions, and to provide alternatives to driving that have a lower impact on air quality. Defining success in the context of a permanent system should be informed by a number of other local and regional goals. The organizational structure of the existing pilot is only one of many possible ways to achieve the benefits of a regional program, and the experience with the existing program has raised concerns, including financial viability, how equity is addressed, and the matter of local control.

Based on discussions with SFMTA staff, local stakeholders and Transportation Authority Commissioners, for a regional bike sharing system to succeed in San Francisco, it would need to meet the following goals:

Thus far, the vast majority of Bay Area Bike Share trips (around 90%) have been on bicycles located in San Francisco, likely due to the higher number bicycles and stations, the city's density, its diverse land uses, and its robust bicycle infrastructure.

5 Source: SFMTA Bicycle Strategy, 2013

6 Source: Bay Area Bike Share (<https://bayareabikeshare.com/>)

7 Ibid

8 Air District staff

9 Mineta Institute, 2012

10 Ibid

- **RAPID EXPANSION** As noted above, the SFMTA would like to expand the system rapidly in San Francisco to meet and cultivate demand. The SFMTA Bicycle Strategy calls for 3,000 bicycles and 300 stations to be implemented over the next few years to reach full build-out in order to achieve the network effects that would make bike sharing a viable transportation option for much of San Francisco. Based on other cities' experience, a system of this size could achieve significant membership (more than 50,000), helping to achieve financial sustainability (see related goal below) and a high number of bike sharing trips (more than 20,000 daily users on average). A build-out of this scale will require rapid expansion compared to the pace of the initial Bay Area Bike Share pilot roll-out. Any regional model selected must support this goal in San Francisco.
- **SEAMLESS USER INTERFACE/REGIONAL INTEROPERABILITY.** Under any organizational model, bike sharing in the Bay Area should provide a system that is consistent, legible and seamless for users as they travel among participating jurisdictions, potentially using the existing

Clipper Card fare media. For example, a customer should maintain a single membership that enables them to use a regional bike share bicycle in any Bay Area location. The user experience and the pricing structure should be the same, regardless of where you ride, as long as you return the bicycle within the same jurisdiction. As the system expands to other jurisdictions, it must provide similar interoperability but must also resolve cost and revenue sharing considerations, such as reimbursing local jurisdictions commensurate with the level of use in each area.

- **GEOGRAPHIC AND SOCIAL EQUITY.** In order to have bike sharing perform as a form of public transportation, its expansion within San Francisco must eventually be accessible to as many potential system users as possible. By removing the obstacles of bicycle ownership, bike sharing should provide an opportunity to expand the number of cyclists in San Francisco, inviting a wider range of ages, cultures, races, and incomes to use this affordable form of transportation. However, existing systems (including Bay Area Bike Share) have identified barriers to use in low-income neighborhoods and communities

GEOGRAPHIC AND SOCIAL EQUITY

As discussed previously, existing systems have had limited success implementing bike sharing in lower density neighborhoods and attracting low income communities and people of color to use the systems. Nevertheless, some strategies employed by other systems have shown promise in achieving these goals. Transportation Authority and SFMTA staff, in partnership with the San Francisco Bicycle Coalition, intend to continue investigating potential solutions to address equity issues. Bicycling data indicate that geographic and social equity are challenges for the bicycling mode as a whole; while bike sharing must do its part to resolve this important issue, it must be coordinated with better and ongoing community outreach efforts that span beyond cycling and across all sustainable transportation modes.

Addressing Geographic Equity: Bike sharing systems achieve the highest ridership when there is a dense network of stations placed relatively close together. Similar to public transit, people use the system more when a station is close enough to access easily from both origins and destinations. While lower density neighborhoods further from downtown may not fit all of the criteria for higher usage, stations in these areas can be successful, especially if strategically located near other bicycle infrastructure (e.g., bike lanes) or regional transit. The costs of these stations can be factored into the business plan for San Francisco bike sharing, and specific public grants or private donations may be needed to help fund the capital and operating costs for stations in these areas.

Addressing Social Equity: The first barrier for potential low income users of bike sharing is the cost. An annual membership for Bay Area Bike Share costs \$85, more than some can afford, particularly in addition to a transit pass. Another barrier is the requirement of a credit card, needed in case the bike is damaged or stolen. Since some low income residents and employees may not have access to a credit card or debit card (known as the "unbanked"). Hubway in Boston addressed these two issues by offering significantly reduced and/or cash memberships, as well as reduced and extended hourly rates (1 hour free) in addition to reversing most overage charges (beyond an hour) for low income users. People report their income (400% above poverty line) based on the honor system (i.e., no documentation necessary). However, San Francisco has various programs (e.g., Lifeline Muni Pass) that could pre-qualify these potential members. While the cash membership option is offered to anyone, it is not advertised prominently on Hubway's website so only people who truly need it would take advantage of it. Based on conversations with Hubway staff, the subsidized membership program has not had issues with stolen or damaged bicycles. Other systems have worked with credit unions and local banks to help "unbanked" populations get access to credit cards or to underwrite their membership.

A final issue is a lack of cultural acceptance and understanding of the system. Bike sharing is a relatively new mode of transportation, and has been marketed mostly towards more technology savvy users with smart phones (to find out status of bicycles at the stations) or at least an internet connection to sign up. Many of these users are already cyclists, and often higher income, a higher proportion of males, and a higher proportion who indicate their race as white than the general area population. Hubway in Boston found that a concerted effort was needed in order to get low income users in communities of color to sign up and use the system. The program allowed sign-ups via telephone in addition to the internet. Staff performed direct, door-to-door outreach, including helping people complete the signup process and showing them how to check out the bikes and return them. Since this effort began, Hubway has seen a significant increase in low income members, and has found that they are using the system in a similar way to other users.

A targeted effort, with dedicated staffing and funding resources, along with specific goals for growth in these target populations is essential for success. Various strategies should be undertaken to find ones that work best in San Francisco.

of color such as credit card requirements, insufficient bicycling infrastructure, security concerns, and below average cycling familiarity. In addition, lower densities in outlying neighborhoods of San Francisco may require a higher level of subsidy due to lower potential revenues from sponsorships (one of the major funding sources for operations) as well as lower attraction of short-term (daily and weekly) memberships, which often generate higher revenues to help offset the lower cost-recovery of annual memberships. The selected organizational model should prioritize San Francisco's ability to achieve these geographic and social equity goals.

- **FINANCIAL SUSTAINABILITY.** In contrast to transit operations, bike sharing systems in the first generation of North American cities and metropolitan areas have been able to recover a higher percentage of costs for operations through user fees (up to 97% cost recovery in Washington DC, although often significantly less).¹¹ Nevertheless, similar to transit, bike sharing requires significant up front capital costs as well as ongoing maintenance and replacement costs. For the long-term success of any bike sharing system, the potential for a

PUBLIC SUBSIDY

From Paris, France's advertising-based funding for its Velib system to New York's fully sponsored CitiBike program to Capital Bikeshare's high operating cost recovery ratio, there is an impression that bike sharing systems can pay for themselves. However, these claims often overlook some of the public subsidy that these systems require, including the provision of public right of way and dedication of public agency staff resources.

If San Francisco conceives of its bike sharing system as an extension of public transit, then public subsidy (both locally and for the regional system) may be warranted for some portion of capital infrastructure costs, operations, and maintenance. It should be noted that the cost of providing an extensive bike sharing network is likely to be significantly lower than the cost of extending transit service into new areas or increasing transit service frequency or capacity. Note that detailed cost and revenue data was not available at the time of writing, so we do not know the level of operational subsidy required for the existing Bay Area Bike Share pilot. When these data are available, we will be better able to estimate the ongoing subsidy required for system expansion.

By clearly defining the goals for bike sharing, San Francisco decision-makers can determine the right level of subsidy and the proper mix of funding sources.

particular organizational model to provide or achieve financial sustainability is paramount, whether the particular system requires a locally acceptable-level of ongoing public subsidy or not. Making bike sharing as financially sustainable as possible will necessitate careful planning and, almost certainly, the application of non-traditional funding sources—such as private sponsorships—in addition to user fees and public grants. This could indicate

the applicability of a phased organizational approach that recognizes the need for more support and stability in the start-up phase, particularly for capital infrastructure, leading to a more independent and self-sustaining model as the program matures.

The purpose of this SAR is not to determine precisely how San Francisco should achieve the goals listed above; rather, it evaluates the various organizational structures on how well they provide a way for San Francisco (and the region) to address these primary goals. As bike sharing develops in San Francisco and the Bay Area region, other local and regional goals such as mobility, air quality/healthy environment, mode shift, and transit crowding reduction should also be considered (see Section 3 for next steps and recommendations).

2. Strategic Analysis

The analysis of San Francisco's preferred bike sharing governance and administration/operations structures hinges on two key sets of decisions:

1. How much local control and responsibility does San Francisco want in the governance functions of bike sharing in San Francisco versus having some or all of these delegated to a regional body?
2. What types of organizational models are available in terms of who owns, governs and operates bike sharing in San Francisco and/or the overall region, and what are the relative advantages, tradeoffs and concerns?

2.1 LOCAL SAN FRANCISCO GOVERNANCE VERSUS CENTRALIZED REGIONAL GOVERNANCE

Given the goal of a seamless user interface and general interoperability, some degree of regional coordination is necessary, at a minimum to identify a set of reasonable regional standards for coordination among other bike sharing entities in the region, including a payment mechanism that works with all systems and a pricing structure that would grant reciprocity to users who buy their memberships from the San Francisco system and use bicycles somewhere other than San Francisco, and vice-versa. Ideally, the look and feel of the system would vary minimally between jurisdictions. However, many other aspects of the system could be managed at either the local or regional level (e.g. location siting, level of public subsidy, some technology choices, sponsorship, and vendor contracting). This paper does not analyze a more extreme local model, where San Francisco would develop its own bike sharing system independent of other regional efforts and without consideration of a seamless user interface and regional interoperability.

Attachment 1 outlines the advantages and tradeoffs of a more locally controlled model with regional standards versus a more regionally controlled model. Obviously, there are many hybrid variations incorporating aspects of each of these models, but the pure form of each is useful for contrasting purposes.

¹¹ Institute for Transportation and Development Policy, 2013

Capital Bikeshare in Washington, DC provides a good example of how a locally controlled system with regional coordination could work (see Attachment 3 for more detail). Even though there are four different entities participating in the program (Washington DC; Arlington, VA; Alexandria, VA; and Montgomery County, MD), the user experiences a unified Capital Bikeshare program—his or her membership can be seamlessly used at bicycles in any of the Capital Bikeshare locations under a universal cost structure. Each jurisdiction is responsible for securing funding for the capital costs of its new bicycles and stations. In place of significant regional administrative coordination, all jurisdictions participate in a Master Contract that, through a regional Council of Governments rider, allows jurisdictions to be added and/or negotiate their own contract separately with the same vendor without a formal procurement process. If the Bay Area system pursues a similar model, it would be possible for San Francisco and other jurisdictions to independently buy into a regional system and maintain local control over implementation while adhering to agreed-upon regional standards such as fee structure, appearance, and interoperability. Depending on the level of independence other jurisdictions desire, it could also be possible to go a step further and have separate vendor procurement processes, and possibly even different technology, as long as the regional business or functional standards are met.

The existing Bay Area Bike Share pilot serves as an example of a more centralized regional model, where the Air District is responsible for procurement and administration of the contract, overseeing the vendor, and ensuring sufficient funding for the program to ensure contractual solvency. In turn, each of the local jurisdictions is responsible for providing its share of the funding, siting of stations, and local permitting/approvals, all codified through a memorandum of agreement. The Air District could continue to manage a regional bike sharing program, or it could transfer the next phase of expansion and management of the existing infrastructure to another regional entity such as MTC. (See section 2.2).

The main advantages of local San Francisco governance (e.g. the Capital BikeShare model) are related to flexibility and control over sponsorship/fundraising, local policy decisions (such as those related to geographic and social equity), and vendor procurement and oversight to ensure the program meets local goals, standards, and operational requirements in a timely manner. One of the key potential sources of funding, particularly for operations, is system sponsorship. For instance, CitiBike in New York was able to cover much of its up-front capital and ongoing operations costs through a combination of membership and usage revenues and a title sponsorship with Citibank and MasterCard. Of all jurisdictions in the region, San Francisco likely has one of the strongest markets to support such an arrangement, so a local sponsorship agreement, as well as direct oversight of the vendor, would ensure that San Francisco would be able to realize the full value of the San Francisco portion of

the system and apply those funds to operations and expansion in the way that best suits the needs of San Francisco stakeholders.

The most concerning tradeoff for local San Francisco governance, especially if it is able to expand its bike sharing system rapidly, is that the region could make different decisions pertaining to technology, pricing, and vendor selection. Without strong coordination this could result in a lower-quality user experience throughout the regional system. Without San Francisco and the region reaching agreement on technology, cost and revenue sharing, along with minimum standards, this model risks an expansion similar to Bay Area public transit agencies—confusing, fragmented, and frustrating to users. These risks can be minimized, but deliberate efforts must be made early in the process to avoid them.

The main advantage of a centralized regional model is that it can guarantee a seamless user interface and interoperability, assuming it encompasses all jurisdictions in the region into one system. It could also encourage expansion to jurisdictions that otherwise wouldn't have sufficient local resources to implement a bike sharing system on their own.

The main tradeoff is that local policy decisions could be superseded or delayed from implementation by regional interests. For example, under a centralized regional model, expansion within San Francisco could be weighed against the desire of other jurisdictions to grow or launch bike sharing. Similarly, stations and programs that address San Francisco's geographic and social equity goals may not fully align with regional goals, resulting in lower performance of the system by local standards. In addition, the effort to reach consensus among a great number of stakeholders will likely result in a slower implementation that San Francisco desires.

The local/regional decision does not have to be absolute; a hybrid model could be developed where San Francisco would have stronger local control (allowing the City to more readily meet expansion and equity goals which may be more aggressive than the rest of the region's) while other jurisdictions would operate under a more centralized regional model. Based on experiences in other cities, San Francisco's density, land uses, and bicycle infrastructure mean that bike sharing would likely generate more users and trips per bicycle than other jurisdictions in the region. Unlike many smaller jurisdictions, SFMTA has staffing and procurement capacity, so with an adequate level of funding it may be able to proceed more quickly than other jurisdictions in the region without such resources. The latter may prefer to participate in a regional program to take advantage of the contracting and planning capacity of an organization like the Air District, MTC, or a regional non-profit. However, in order to capitalize on the success of the pilot and build a robust regional bike sharing system, both SFMTA and whichever agency accepts the role of the regional administrator must commit sufficient dedicated staff to the bike sharing effort.

In addition, due to the lack of a clear decision on expansion of the regional bike sharing program beyond the pilot, SFMTA may be able to proceed more quickly than a regional entity in the near term by identifying and securing its own funding sources and then completing its own vendor procurement process. A hybrid model could allow San Francisco to enjoy the greater level of autonomy inherent to a local governance structure, while still allowing direct coordination and interoperability with a consolidated regional system. In addition, with flexibility in its approach, San Francisco could choose to transfer some of the governance responsibilities (e.g. contracting) to the region at a later point if a permanent regional structure is formed. While this SAR is focused on San Francisco's needs, other local jurisdictions similarly should not be excluded from moving forward in advance of the establishment of a regional bike sharing system if they are able to identify sufficient funding to start up and operate their own systems, as long as they follow regional standards to ensure interoperability and a seamless user interface.

2.2 TYPE OF ORGANIZATION(S) ADMINISTERING AND OPERATING LOCAL AND REGIONAL BIKE SHARING

Another key decision point for the expansion of bike sharing in San Francisco is how the on-the-ground system will be administered and operated. For this SAR, we define administration as the overall planning and management of the system, including securing funding, making location and expansion decisions, establishing a governance structure, procuring or identifying the system operator, setting regional or local standards and policies, defining a fare structure, and evaluating system performance. By operation we mean the day-to-day implementation of the program including installation, bike balancing (i.e., moving bikes from fuller stations to empty ones), maintenance, and revenue collection. Whether governance happens at the local or regional level, there are at least four applicable administrator/operator models for bike sharing in the Bay Area:

1. Non-Profit Administrator/Operator
2. Non-Profit Administrator, Operated by Private-Sector Contractor
3. Privately Administered and Operated
4. Publicly Administered, Operated by Private-Sector Contractor

A fifth potential model, where the bike sharing system would be both administered and operated by the public sector, has not been proposed since there are no examples of this model currently in the United States.

For the Bay Area, the decision of which administrator/operator model to pursue will likely vary under a local versus regional governance structure. Under all of the administrator/operator models, however, there will need to be public sector involvement even if the system is administered and operated by a private or non-profit entity in order to en-

sure public goals are met, in particular with respect to regional interoperability, siting decisions, and equity. If the system uses public right-of-way, public agency support will be needed to secure environmental clearance and the appropriate permits. Attachment 2 outlines the advantages, tradeoffs, and considerations for each model.

NON-PROFIT ADMINISTRATOR/OPERATOR This model assumes a Non-Profit Organization (NPO) is formed or repurposed with a mission to create a bike sharing system. The NPO undertakes all aspects of implementing and operating the system. Nice Ride Minnesota (Minneapolis) and Denver B-Cycle use this model.¹² In the Bay Area, assuming missions are aligned and capacity can be added as needed, existing non-profits such as City CarShare or the Bay Area Bicycle Coalition potentially could serve this role or a new non-profit could be formed. Locally, other existing non-profits such as the San Francisco Bicycle Coalition potentially could run a San Francisco system or a new non-profit could be formed.

This model has the advantage of being able to easily fundraise and receive private funding in the form of tax-deductible charitable contributions. Traditionally, this has been more difficult for a public sector operator to accomplish, although San Francisco has recently demonstrated its ability to secure private funding for its Muni low-income youth pass program.¹³ This model also may be more nimble and responsive compared to a typical public agency since it would be able to focus its mission primarily on bike sharing and fully dedicate its staff to the effort. However, as stated earlier, public agencies and jurisdictions would still need to have some level of involvement in decision-making and implementation. The main tradeoff is that there could be a steep learning curve for a non-profit that has not operated a bike sharing system previously, or does not have sufficient prior experience receiving public funds and complying with the requirements that accompany them. Thus, there are risks of slower initial deployment, poorer operations and customer support, and financial challenges (e.g., potential bankruptcy) due to administrative learning curves and underestimation of efforts and costs. At this point, it is not clear if an existing Bay Area NPO has the institutional or administrative capacity to run a regional bike sharing program.

NON-PROFIT ADMINISTRATOR, OPERATED BY PRIVATE-SECTOR CONTRACTOR Under this model, which is currently being deployed in King County (Seattle), WA, an NPO is formed (or an existing one is repurposed) whose mission is to create and oversee a bike sharing system.¹⁴ The NPO establishes and accepts ongoing administration of the system but hires a private contractor to implement and operate the system rather than performing that duty itself. The breakdown of ongoing tasks related to system could vary based on the

¹² www.niceridemn.org, denver.bicycle.com

¹³ San Francisco Chronicle, February 28, 2014 (www.sfgate.com/news/article/Google-says-6-8-million-for-youth-Muni-passes-5273937.php)

¹⁴ pugetsoundbikeshare.org

contract; e.g., activities such as marketing, outreach, or project evaluation could either be undertaken by the administering non-profit or contracted out to a third party.

The main advantage of this model versus the non-profit administrator/operator model is that it would allow the selection of a contractor with demonstrated experience and expertise operating bike sharing systems rather than requiring the non-profit administrator to build that capacity in-house. Otherwise, the advantages and tradeoffs are similar to the first model described.

PRIVATELY ADMINISTERED AND OPERATED Similar to Miami Beach Decobike and New York CitiBike, in this model a private-sector concessionaire funds and operates the system, usually in exchange for operating revenue and, in most cases, sponsorship and advertising rights.¹⁵ The role of public sector involvement in decision-making is negotiated on a case-by-case basis, but could be as limited as providing access to public right-of-way or as extensive as selecting installation sites, approving the visual impact of the system, and setting other standards for the system.

The main advantage of this model is that it has the greatest potential for rapid expansion and innovation, and also could, depending on the market, result in the implementation and operation of a bike sharing system without significant investment of public funding, but it's not fool-proof. Challenges with the launch of Bike Nation in Los Angeles highlight this risk. The privately run program has not been able to implement advertising (nor realize related revenues) as planned, and therefore no bicycles have been deployed. The main tradeoff is that local policy priorities (such as geographic and social equity or local advertising restrictions) may be at odds with profitability or other goals of the private administrator/operator. In addition, the long term financial sustainability of this model is the least proven.

PUBLICLY ADMINISTERED, OPERATED BY PRIVATE-SECTOR CONTRACTOR In this model, used by Capital Bikeshare (Washington, D.C.) and Hubway (Boston), a public agency administers the program but contracts out the system's operation similar to the non-profit administrator model (see Attachment 3 for more detail on these two systems, which are the only permanent multi-jurisdictional systems currently operating in North America). The Bay Area Bike Share pilot also functions under this model—the Air District serves as the public-sector owner and administrator of the system and contracts out operations to Alta Bike Share. If a centralized regional model were to be chosen for the permanent program, the Air District or MTC would likely be the administering agency.

The main advantage of this model is that it potentially has the most oversight and involvement of public entities which are best able to understand the unique needs and challenges of the bike sharing system's service area. In addition, public agencies have more proven administrative capacity to receive and comply with public funding requirements, often

¹⁵ www.decobike.com, citibikenyc.com

a key revenue source for the infrastructure component of bike sharing.

This model is used by the two permanent regional systems in the United States—Capital BikeShare in Washington D.C. area and Hubway in the Boston area. These programs include the added flexibility of allowing multiple municipalities within the same region to contract directly with a single operator, reducing administrative burden, allowing for better coordination across jurisdictions, and creating potential costs savings by bundling purchases into larger orders. In the Washington, D.C. and Boston examples, a separate Memorandum of Agreement governs each individual jurisdiction's responsibility for its share of the system.¹⁶ There are no formal joint powers authorities established, but instead they reach consensus on regional standards and system-wide administrative decisions (such as defining a fare structure) through ad hoc committees comprised of the participating jurisdictions. Each jurisdiction secures its own funding and manages its own cost and revenue sharing agreements with the private operator, while complying with regional standards.

The main tradeoff would be the typically longer lead times required for contract procurement and administration by public agencies. Also, these agencies often have greater difficulty seeking and receiving private funding, but this tradeoff could be mitigated by the formation of a non-profit fundraising organization or the establishment of another mechanism allowing for the solicitation of private grants and donations.

3. Next Steps/Recommendations

Regional interoperability and a seamless user interface are important to the success of bike sharing, both in San Francisco and regionally. However, it will likely take some time for the region to agree upon and implement a permanent regional bike sharing governance structure for the Bay Area. Thus, in order to support development of a permanent regional system while balancing San Francisco's desire to rapidly expand the system within San Francisco, we recommend that San Francisco participate in parallel efforts to build the system within San Francisco while helping to define the regional standards.

- 1. SFMTA should set goals for San Francisco's bike sharing system and evaluate how expansion plans would work toward those goals.** These should include measures for:
 - Enhanced mobility
 - Increase in bicycle mode share
 - Geographic and social equity
- 2. Given the clear benefits of a regional bike sharing system, SFMTA, the Air District, MTC, and other stakeholders should agree upon standards for a regional system beyond the current Bay Area Bike Share pilot, including:**

¹⁶ www.thehubway.com, capitalbikeshare.com

- Seamless user experience including a universal pricing structure and user interface
- Interoperable technology
- Clear financial standards for a jurisdiction to participate in the regional system, including how to fund initial capital investment, ongoing operations and maintenance, and eventual capital (infrastructure) replacement
- Equitable cost and revenue sharing for participating local systems
- Contract management that works for local jurisdictions if the administrator and/or operator role is at the regional level
- Adequate committed staffing at the local and regional level to ensure the program has adequate support for operations and expansion

BEST PRACTICES/NEEDS FOR REGIONAL BIKE SHARING PROGRAM

Regardless of the organizational structure chosen, the regional bike sharing program should include the elements listed below.

- Defined regional standards for a seamless user experience (see Section 3, Recommendation 2)
- Clear guidelines for prioritization of regional funds
- Sufficient and dedicated staff to administer and grow the system, including the ability pursue sponsorships and respond to private-sector inquiries about participating in the system
- Bylaws that adhere to local rules governing advertising
- Mechanism for developers to include bike sharing on-site, consistent with local policies, that connects with the regional system as part of a Transportation Demand Management Strategy

3. In the near term, we recommend that San Francisco pursue an organizational model for bike sharing where the bulk of decision-making happens at the local level while ensuring these decisions do not preclude the ability to meet regional standards described in Recommendation 2. San Francisco should maintain local control of operational and funding decision-making to ensure that the local system can expand quickly and meet other local goals. At the same time, San Francisco should maintain flexibility in this approach, and the local governing body may consider shifting some governance functions to a regional bike sharing entity if becomes desirable in the future.

- ~~SFMTA should continue its station site planning~~ SFMTA should continue studying station siting options and develop a business model that shows how the proposed expansion can reach financial sustainability through the commitment of public funding, private sponsorship, user revenues, or a combination of all these sources.

- San Francisco should also actively pursue private-sector sponsorship opportunities, both locally and in partnership with the Air District and MTC for the region. Some level of subsidy for the regional system may be warranted in order to ensure it meets the regional standards, but it cannot happen at expense of meeting San Francisco's goals, especially since the city's market will likely drive any sponsorship program. San Francisco should also ensure that any advertisement rights granted as part of a private sponsorship deal are sensitive to and consistent with local rules governing advertising. Furthermore, sponsorship must be negotiated in a way that will allow San Francisco to meet its other goals, such as for geographic and social equity.

4. For the region, we recommend a hybrid model where a non-profit associated with or managed by a public agency administers the program and contracts with a private-sector operator. Similar to how the region's 511 program operates in partnership with MTC, this structure could blend the desire for public control over siting and service decisions; familiarity with public funding, infrastructure, and administration; the ability to easily accept private money; and the efficiency of an experienced system operator. The contract with the private-sector operator could be held either by a regional administrator or a local jurisdiction. The regional system will likely take a while to establish, so jurisdictions such as San Francisco that are interested in moving forward with expansion earlier should maintain the choice to opt into the regional system once it is in place.

While there are tradeoffs for each of the administration/operations models, most of them could be mitigated with careful planning. For instance, the inability to control station siting or aesthetic impact that raises concern with a private administrator/operator (such as the CitiBike example in New York) could be mitigated with contract language that requires these details be negotiated with the City.

In April, MTC and the Air District released a proposal for the next phase of the Bay Area Bike Share pilot expansion. If approved by their respective boards, the two agencies would commit a total of \$8.7 million in BACI funding to expand bike sharing to Berkeley, Oakland, and Emeryville and provide additional operations, maintenance, and expansion support to the initial pilot cities. MTC staff has also indicated it will seek new funding from the state's new Active Transportation Program for further expansion and operation of regional bike sharing. Over the next several months, MTC has proposed to work with the Air District to develop a strategy to transition future program management to MTC, including contract management, planning, staffing, and a criteria-based strategy for expansion. We anticipate that expansion into the East Bay will complement the suc-

cess of San Francisco's system. The growth of the system in both areas (and beyond) is critical for the success of Bay Area Bike Share.

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ATTACHMENT 1. Advantages and Tradeoffs of Local San Francisco Governance vs. Centralized Regional Governance

		RAPID SF EXPANSION	REGIONAL INTEROPERABILITY/ SEAMLESS USER INTERFACE	SF GEOGRAPHIC AND SOCIAL EQUITY	FINANCIAL SUSTAINABILITY
Local San Francisco Governance					
Advantages	• Local fundraising and pursuit of sponsorship	✓			✓
	• SF funds directed to SF infrastructure and/or operations	✓			✓
	• Direct control of vendor, procurement, and infrastructure siting	✓		✓	✓
	• Greatest flexibility to set and achieve local goals; can make local policy decisions without third party agreement			✓	
Tradeoffs	• May have limited or no access to regional fund sources				✓
	• Higher potential for fragmented and disconnected systems around regions		✓		
	• Without a robust regional system, usage would be lower in SF		✓		✓
Considerations	• Requires strong commitment to coordinate with other entities and/or regional operator				
Centralized Regional Governance					
Advantages	• Guarantees seamless user experience across region		✓		
	• Access to both regional and local fund sources				✓
	• May reduce contracting administrative burden for SF	✓			✓
Tradeoffs	• Potential for slower expansion in SF to accommodate expansion of other jurisdictions	✓		✓	
	• Potential for revenues and private contributions raised in San Francisco to subsidize rest of the system	✓			✓
	• Less direct control over vendor, procurement			✓	✓
	• Third party involved in local SF policy decisions, resulting in less flexibility to set and achieve local goals			✓	
Considerations	• Would need clear and agreed-upon expansion planning guidelines				
	• SF would need to ensure minimum standards and requirements adequate to minimize risks and tradeoffs and allow it to meet its local goals				

ATTACHMENT 2. Advantages and Tradeoffs of Various Administrator/Operator Models

		RAPID SF EXPANSION	REGIONAL INTEROPERABILITY/ SEAMLESS USER INTERFACE	SF GEOGRAPHIC AND SOCIAL EQUITY	FINANCIAL SUSTAINABILITY
Non-Profit Administrator/Operator					
Advantages	• Potentially more nimble and quicker to act with focused mission and dedicated staff	✓			
	• Easy to receive private funding in the form of tax deductible charitable contributions				✓
Tradeoffs	• More challenging to receive and comply with public grant requirements				✓
	• Potentially long learning curve for operations versus contracting with an experienced vendor	✓			
Considerations	• Less ability to ensure SF and regional priorities are met		✓	✓	
	• Strong government oversight can minimize risks of this model				
	• None of the considered Bay Area non-profitS have experience managing such a complex system				
Non-Profit Administrator, Operated by Private-Sector Contractor					
Advantages	• Potentially less bureaucracy than public model	✓			
	• Easy to receive private funding in the form of tax deductible charitable contributions				✓
Tradeoffs	• Can employ a vendor with demonstrated operations experience				✓
	• More challenging to receive and comply with public grant requirements				✓
Considerations	• Less ability to ensure SF and regional priorities are met		✓	✓	
	• Strong government oversight can minimize risks of this model				
Privately Administered and Operated					
Advantages	• Little to no government involvement—potentially quick implementation	✓			
	• Lower public investment				✓
Tradeoffs	• Expansion and operations are market driven; hardest to meet SF and regional goals		✓	✓	
	• Limited public oversight		✓	✓	
Considerations	• Little to no security that system will continue to operate if it does not prove profitable		✓		✓
	• Clear, strong standards written by agencies could ensure concessionaire's decisions work toward local or regional goals				
Publicly Administered, Operated by Private-Sector Contractor					
Advantages	• Most direct control over design and implementation of system; easiest to achieve SF and regional goals		✓	✓	
	• Familiarity with receiving and complying with public grant requirements	✓			✓
Tradeoffs	• Operational revenues fund operations and expansion	✓			✓
	• Typically longer lead times for procurement and contracting	✓			
Considerations	• More challenging to directly receive private, tax-deductible charitable contributions	✓			✓
	• If this model were to be employed, private fundraising could be led by independent non-profit or other mechanism within the public agency				



PHOTOS: SAM KITTNER/CAPITAL BIKESHARE

ATTACHMENT 3. Bike Sharing Case Studies

Capital Bikeshare | Washington, DC

PARTICIPATING JURISDICTIONS: Capital Bikeshare initially began in 2010 as a system serving Washington, DC and Arlington, VA residents and visitors. The system now encompasses the two initial jurisdictions as well as Alexandria, VA (joined in 2012) and Montgomery County, MD (joined in 2013). Even with participating partners comprising an array of county and local governments, Capital Bikeshare has operated without a formalized regional governance structure.

PROCUREMENT: Through a rider clause, all jurisdictions participate in the Council of Governments’ Master Contract. This rider allows jurisdictions to be added and/or negotiate their own contract separately with the same vendor without a formal procurement process. Within this, each partner participating in Capital Bikeshare is responsible for securing funding for the capital costs of new bicycles and station pods. Since the jurisdictions represent three different states, there are three separate statewide distributions of federal funding to the project, meaning the jurisdictions are not competing with one another over the same source.

COST-SHARING, REVENUE DISTRIBUTION, AND DECISION-MAKING: In the Capital Bikeshare system, informal agreements among jurisdictions define how costs and revenues are divided through formulas based on the number of docking points and where individual trips begin and end. Revenues from the purchase of short term memberships are based on the dock location for the purchase. The vendor, Alta Bike Share, distributes the revenues according to the



agreed upon formulas at the end of each month after subtracting each jurisdiction’s costs. This function is embedded in the Master Contract. All decisions regarding changes to cost sharing and revenue attribution, along with other decisions that impact the system, are resolved through consensus among partner jurisdictions.

OVERVIEW
Capital Bikeshare

- Total bikes:** 2,500
- Total stations:** 300
- Annual membership:** \$75
- Monthly membership:** \$25

- Year operations began:** 2010
- Participating jurisdictions:** Washington, DC (2010), Arlington County, VA (2012), Montgomery County, MD (2013)



ATTACHMENT 3. Bike Sharing Case Studies
Hubway | Boston, MA

PUBLIC PARTNERS: From the start, Hubway was designed as regional system, intended to serve populations across the metropolitan Boston area. The program opened in Boston in July of 2011, and the three partner municipalities of Brookline, Cambridge, and Somerville started their operations in summer of 2012.

Coordination was accomplished through a memorandum of agreement (MOA) between the partners that provided a clear structure of responsibility for the system at the outset and allowed the regional Massachusetts Area Planning Council (MAPC) to perform the vendor procurement. This MOA now serves as an operational guide for the system. Recognizing that each partner would have an individual contract with the same bike share operator, it explicitly linked the individual contracts through revenue distribution and cost-sharing principles.

PROCUREMENT: MAPC performed the procurement on behalf of the local municipalities. Massachusetts state law allows other jurisdictions to use a regional entity’s procurement process when purchasing a variety of services, and this was applicable for bike sharing operational services. Each jurisdiction negotiated its own contract with the vendor, Alta Bike Share, and is subject to the requirements of the MOA. Alta Bike Share is a co-signatory of the MOA.

COST-SHARING, REVENUE DISTRIBUTION, AND DECISION-MAKING: Through the MOA, the costs of operating the system are distributed among the partners using a formula based on docking points. Each month, a percentage of the total cost of operations is attributed to each partner municipality using the percentage of docking points within each municipality. Similarly, revenue from annual subscriber memberships and usage fees are returned to the partner municipali-

ties using the same formula. Revenue from casual memberships and usage fees are distributed differently, though. Revenue from casual subscriber membership fees (daily users) is returned to the municipality where the membership was purchased. Usage fees from casual subscribers (fees incurred when a daily rider borrows a bike longer than 30 minutes), are returned to the partner “in whose jurisdiction the trip generating such Usage Fees originated.”



Operating decisions within the Hubway system are initially made through consensus and include the amount of membership and usage fees, significant changes to the website, contacts of members for survey or other purposes, and the exercise of any participating municipality’s rights, privileges, or authority as a signatory of the Revenue Account. However, when consensus cannot be reached, Hubway’s partners use a voting system, where the number of docks in a municipality determines that partner’s voting power. Each partnering municipality receives 1 vote per 20 stations.

OVERVIEW
Hubway

Total bikes: 1,100
Total stations: 126
Annual membership: \$85
Monthly membership: \$20
Year operations began: 2011

Participating jurisdictions: City of Boston (2011), Town of Brookline (2012), City of Cambridge (2012), City of Somerville (2012)
Other Public Partners: Massachusetts Department of Transportation, Massachusetts Bay Transportation Authority