Initiating Bicycle Sharing in Hawai‘i: Lessons Learned from a Small Pilot Bike Share Program

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INSIGHTS IN PUBLIC HEALTH

Abstract
In 2011, a small pilot bike share program was established in the town core of Kailua, Hawai‘i, with funding from the Hawai‘i State Department of Health. The Kailua system consisted of two stations with 12 bicycles, and the goal was to secure additional funding to expand the station network in the future. Community feedback consistently indicated support for the bike share program. However, system metrics showed low levels of usage, averaging 41.5 rides per month (2011-2014). From observational data, users were primarily tourists. With minimal local staff, the bike share program had limited resources for promotion and education, which may have hindered potential use by local residents. Management of station operations and bike maintenance were additional, ongoing barriers to success. Despite the challenges, the pilot bike share program was valuable in several ways. It introduced the bike share concept to Hawai‘i, thereby helping to build awareness and connect an initial network of stakeholders. Furthermore, the pilot bike share program informed the development of a larger bike share system for urban Honolulu. As limited information exists in the literature about the experiences of smaller bike share programs and their unique considerations, this article shares lessons learned for other communities interested in starting similar bike share programs.

Keywords
bicycling, bike share program, active transportation, suburban community

Bike share programs are proliferating across the United States and constitute the most rapidly growing form of public transportation.1 Bike share systems provide a network of bicycles for short-term rental so that users can make relatively short trips to work, shopping, and other destinations.2 Larger bike share programs, such as Citi Bike in New York City, are typically located in urban areas with a sufficient population base to make the systems economically feasible. However, the bike share concept has also been implemented in smaller systems that serve towns and universities. Of the 68 US bike share systems that were on the ground in 2014, there were 26 systems (38.2%) with five or fewer stations and 21 systems (30.9%) with 50 bicycles or fewer.3 Compared to the literature available about large bike share systems, not as much is known about the experiences of smaller bike share programs and their unique considerations. The purpose of this article is to share the experiences and lessons that have been learned from a small pilot bike share program in the town of Kailua, Hawai‘i.

Background
The bike share concept was first introduced in the state of Hawai‘i when the Department of Health, Healthy Hawai‘i Initiative (HHI) provided funding to establish a pilot program in 2009. Through a competitive Request for Proposal process, Hawai‘i B-cycle was awarded $100,000 to install and maintain two stations with a total of 12 bicycles, conduct community outreach and educational activities, and secure sponsorship that would add two to four new stations to the system. At the time, Hawai‘i B-cycle consisted of B-cycle, LLC, a national provider of bike share systems located in Wisconsin, and Momentum MultiSport, the designated local operator based out of a Honolulu bike shop business.

Kailua Town was selected for the pilot bike share system based on the results of a community needs assessment and favorable geographic characteristics (eg, relatively flat topography and short commute distances between destinations such as stores and parks). Kailua had an existing network of bicycle lanes, routes, and paths to support bicycling. Moreover, the major landowner in Kailua Town, Kaneohe Ranch Management Limited, was supportive of the pilot project and donated sites on their commercial property for the two bike share stations. Approximately 38,635 people live in Kailua. Compared to the state of Hawai‘i overall, Kailua has a higher proportion of Caucasians (44.0% vs 24.7%) and a higher median household income ($95,190 vs $67,492).4 Kailua, with its beautiful beaches and small-town charm, is also an attractive destination for tourists.

Launch
The Kailua pilot bike share system was officially launched in April 2011 with the installation of two stations in Kailua’s town core. To celebrate the new pilot program, elected officials, partner organizations, and local media were invited to a May 2011 event that allowed attendees to ride the bike share bicycles. In addition to earned media coverage, Hawai‘i B-cycle also gave presentations to community groups like the Kailua Neighborhood Board to build awareness of and support for the Kailua pilot bike share program. However, Hawai‘i B-cycle was not able to pay for any advertising activities.
System Usage

Metrics generated from the Hawai’i B-cycle system revealed that virtually all of the users purchased short-term 24-hour passes (rather than monthly or yearly passes). From observational data, the majority of riders appeared to be Japanese tourists. Table 1 presents the monthly average number of rides by year for Hawai’i B-cycle. Ridership started off at a relatively high level, declining in the second year on-the-ground when the system was without a coordinator to oversee operations. Ridership began to increase again in 2013, perhaps reflecting the strong tourism market during this period. However, ridership began to drop again at the end of 2013 after the loss of the part-time mechanic who helped to maintain the bicycles and the relocation of one of the stations. Ridership remained low throughout 2014.

The overall average number of rides taken per month was 41.5 for Hawai’i B-cycle. These usage numbers are significantly lower than that of a comparably sized system in Spartanburg, SC. With a total of two stations and 14 bicycles, the Spartanburg system averaged nine rides per day, which would equate to 270 rides per month.2 Although the number of rides is low, the average ride duration was 160 minutes for Hawai’i B-cycle. With the additional fees incurred for longer rides, a 160-minute ride would cost a tourist $17.50 ($5 membership fee for the 24-hour pass, plus $12.50 in additional usage charges). In contrast, a local user could pay $50 for an annual membership that would cover an unlimited number of short rides (ie, less than 30 minutes) throughout the year.

Lesson Learned #1: The importance of a clearly-defined organizational structure

The first lesson learned from the experience of Hawai’i B-cycle is the need for a well-defined organizational structure. Many of the challenges experienced by Hawai’i B-cycle could have been ameliorated by the existence of a distinct organization. In the case of Hawai’i B-cycle, the State Department of Health, HHI, provided funding to establish Hawai’i B-cycle. Yet, Hawai’i B-cycle had a nebulous organizational form in which B-cycle, LLC, was the primary organization receiving the contract from HHI. In turn, B-cycle, LLC, subcontracted the bike shop, Momentum Multisport, to be the local lead in ensuring operations, outreach and promotion. When Momentum Multisport closed business and the coordinator resigned from Hawai’i B-cycle in November 2011, Hawai’i B-cycle floundered. The Wisconsin-based B-cycle LLC had no local point-of-contact in Hawai’i who could take on responsibility of system operations. Therefore, it relied on the HHI contract manager, who had no specific job-related responsibilities towards bike share system operations, to help with issues such as resetting a station when it went offline. The system existed for almost a year without a dedicated staff person to oversee maintenance and build awareness of Hawai’i B-Cycle, a critical period in which focusing on promotional activities and community outreach may have helped to ensure the success of the pilot program.

Table 1. 2011-2014 Ridership metrics for Hawai’i B-cycle: Kailua pilot bike share project.

<table>
<thead>
<tr>
<th>Year</th>
<th>Average number of rides per month (SD)</th>
<th>Total number of rides per year</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011*</td>
<td>67.7 (32.3)</td>
<td>609</td>
</tr>
<tr>
<td>2012</td>
<td>41.8 (16.5)</td>
<td>502</td>
</tr>
<tr>
<td>2013</td>
<td>52.5 (25.7)</td>
<td>630</td>
</tr>
<tr>
<td>2014</td>
<td>10.6 (5.3)</td>
<td>127</td>
</tr>
<tr>
<td>Overall</td>
<td>41.5 (29.4)</td>
<td>1,868</td>
</tr>
</tbody>
</table>

*Partial year (April – December)

The HHI contract with B-cycle, LLC, officially ended in December 2012. Some of the contract deliverables regarding community education, partnership development with local businesses and community groups, and awareness building and promotion had been unfulfilled. Nevertheless, both HHI and B-cycle, LLC, were committed to the success of the pilot project and wanted to sustain the system. However, it was unclear who “owned” the bike share system and thus had responsibility for managing operations. Multiple conversations between the two parties were required to work out the details for continuing the pilot project. B-cycle, LLC, continued to provide liability insurance coverage and operate the system software and website. Using revenue generated from usage fees, a part-time bike mechanic was hired by B-cycle, LLC.

Recognizing the need to fill the vacant coordinator position, HHI used funding from a Cooperative Agreement with the Centers for Disease Control and Prevention to hire a part-time coordinator in April 2013. One of the newly-hired coordinator’s primary duties was to manage the relocation of one bike station to a new site nearby because the landowner was redeveloping the original site. Again, discussions were required to determine who would bear the costs of relocation. The second major duty was securing funding to expand the station network. Activities geared towards expansion included approaching local businesses about willingness to sponsor additional stations and submitting one grant application to a foundation. Because Hawai’i B-cycle did not obtain status as a stand-alone non-profit, the coordinator needed to secure a non-profit fiscal sponsor in order to apply for the foundation grant. Unfortunately, even after securing a fiscal sponsor, based on the fact that B-cycle, LLC, was the primary operator of Hawai’i B-cycle, the foundation considered Hawai’i B-cycle a for-profit entity and did not fund the application. Thus, the unclear organizational structure was a major barrier to both system operations and expansion.

Lesson Learned #2: The challenge of bike maintenance for a small system

Properly maintaining the bicycles in bike share systems has been identified as an important factor affecting system usage.2 Hawai’i B-cycle learned that maintenance can be extra challenging for a small bike share system — especially one that is located on a geographically-isolated island — for three main reasons:
Economies of scale. It is not as cost-effective or efficient to maintain the bicycles on a small system compared to a larger system. Hawai‘i B-cycle had trouble finding a bike mechanic who was willing to service the bicycles on a part-time basis—which typically 1-3 hours per week. Given the lack of a warehouse or repair facility for Hawai‘i B-cycle, the part-time mechanic also had to provide the space to house tools and inoperable bicycles, as well as a vehicle capable of transporting bicycles between bike stations and the place where repairs were made. Although the coordinator reached out to local bike shops, the limited funding made it unfeasible for the bike shops to take on the responsibility for maintenance. An innovative solution to bike maintenance was reached in January 2014 through a partnership with the Kalihi Valley Instructional Bike Exchange (KVIBE), a program of Kokua Kalihi Valley Health Center. KVIBE youth participants volunteered to help service the bicycles and were able to make most of the needed repairs to bike share bicycles throughout 2014. Through this service project, the youth gained vocational skills in repairing complicated bike share bicycles.

Length of time to make repairs. When the bike share system malfunctioned, such as the docking station going offline because of a faulty wireless card, it took a significant amount of time to fix the problem because parts needed to be shipped between Hawai‘i and Wisconsin (ie, the headquarters of B-cycle, LLC) for repair or replacement. During that time, the bike share system was not usable. An additional challenge was the time difference between Hawai‘i and the continental US, which required extra effort to coordinate communication about repairs and system operations.

Rust. Both bike share stations were located within a mile of the ocean. The salt in the air and high levels of humidity caused the bike share docking stations and bicycles to rust more quickly than anticipated. Within a year of being installed, B-cycle, LLC, replaced the docking stations with a more rust-resistant model. Maintenance repairs included changing out rusty baskets located in the front of the bicycles and replacing rusty bolts. For the case of Hawai‘i’s B-cycle, LLC, learned that establishing a proactive maintenance program for the bike share equipment was critical.

The most common maintenance issues were keeping tires inflated, replacing tubes, and replacing sticky handlebar grips. The casings on some of the wires also began to split, and though it did not make the bicycles inoperable, it contributed to the appearance of a lack of maintenance. Importantly, by the 18th month on the ground, the locks for all of the bicycles needed to be replaced; the cables for the locks on all of the bicycles were cut through and/or keys were missing or inoperable because of rust. The lack of functional locks prevents users from being able to secure the bicycles if they stop at places without a docking station (eg, stores, beaches, parks, etc.). Hawai‘i B-cycle experienced other minor issues with vandalism, such as graffiti on the docking stations.

Lesson Learned #3: Making the best of a limited capacity for promotion and education
Promotion, outreach, and education are important to increase bike share system ridership and build community support for the bike share program. Since the coordinator for the Kailua pilot program was only funded part-time, there was limited capacity to conduct promotional and educational activities. Most of the coordinator’s time was devoted to managing bike share operations. Nevertheless, the coordinator carried out several efforts:

- Approached local Kailua businesses to share information about the bike share system and assess interest in collaboration and sponsoring additional stations;
- Participated in multiple community events to highlight the pilot bike share program;
- Through a partnership with the Hawai‘i Bicycling League, offered a Cycle 101 class to adults interested in becoming more comfortable riding a bike; and
- Maintained the Hawai‘i B-cycle Facebook page.

Partnerships with other community organizations were essential to carrying out the majority of the promotional and educational activities. The bike share project was valuable to partners who care about increasing bicycling and active transportation because they could share an example of something that was actually on-the-ground. Participating in community outreach and promotional events helped to increase awareness of the pilot bike share program, but did not directly result in increased usage.

Next Steps
As a pilot program, a primary goal of Hawai‘i B-cycle was “proof of concept.” Although many challenges were faced in trying to establish and sustain the pilot program, the viability of bike sharing in Hawai‘i was demonstrated. Lessons learned from the Kailua pilot bike share program were shared with
stakeholders throughout the development of Bikeshare Hawai‘i, a non-profit organization established in 2014 with support from Honolulu City & County, as well as, state, federal, and private-sector agencies. Bikeshare Hawai‘i leaders are seeking a mix of public and private funding to launch a large system with 200 stations and 2,000 bicycles throughout urban Honolulu in 2016. The Kailua pilot program coordinator’s insights were shared with Bikeshare Hawai‘i leaders in meetings and during program planning activities. For example, the Kailua pilot program coordinator determined that ensuring that the bike share system is usable and attractive to Japanese tourists would entail: (1) Japanese-language capability on bike share station kiosks; (2) accommodation of the JCB credit card, which is a popular Japan-based credit card; and (3) promotion in Japanese-visitor advertising publications and social media.

At the end of 2014, B-cycle, LLC, decided to remove the bike share system from Kailua. The bicycles and docking stations were donated to Better Tomorrows at the Towers of Kuhio Park, a non-profit organization serving a mixed-income housing project in urban Honolulu. Better Tomorrows took on the bike share equipment to increase the transportation options of residents—given that many do not own cars. The staff of Better Tomorrows envisioned a system in which residents would be able to check out a bicycle for short-term use, whether it be to get to a grocery store or a doctor’s appointment. Locks were provided by B-cycle, LLC, so that residents would have a way of securing the bicycles, and helmets and safety vests were provided by the Queen’s Medical Center Injury Prevention Branch. However, before residents are able to start using the bicycles, Better Tomorrows is pursuing several actions: (1) securing maintenance and repair support to bring all bicycles back into operational condition; and (2) providing bicycle education classes to interested residents so that they learn how to ride a bicycle safely and within confidence. Until all bicycles are back in operational condition, the maintenance staff at the Towers of Kuhio Park currently use several of the bicycles to get around the 18-acre housing site and carry out their work.

Most of the maintenance staff are also residents at the Towers of Kuhio Park, and they are helping to promote the visibility of the bike share bicycles until they become available for wider use by residents.

Conclusion
As plans to bring bike sharing to urban Honolulu move forward, the Kailua pilot bike share project provided several valuable lessons for stakeholders to consider, especially in identifying practical challenges (eg, organizational structure and maintenance), the critical role of initial and ongoing program promotion and outreach, and considerations for relevant user groups such as Japanese-speaking tourists. Despite the low usage of the system, as a pilot program, Hawai‘i B-cycle introduced the concept of bike sharing to Hawai‘i and served as an on-the-ground example of how bike sharing has the potential to work in Hawai‘i.

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