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Bicycle Sharing in the U.S.A. – State of the Art (Session 3A)

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Introduction

Bike Sharing in the United States (U.S.A) has been on the rise for the last several years. In September 2012, I published an article in the ITE Journal that summarized the latest status of Bike Sharing in the U.S.A. At that time, there were less than 20 programs, but since that time, the number of programs has more than doubled. Bike sharing programs are expanding in the east, mid-west and western portions of the U.S.A at an astounding rate and more are planned in the near future.

I first got interested in Bike Sharing in the Fall of 2007, when I visited Paris, France, and I was introduced to the Vélib' Bicycle Sharing System. At that time, the Vélib' program included approximately 10,000 bicycles with 750 docking stations. Since then, it has expanded to include over 20,000 bicycles with 1,451 docking stations covering the entire City of Paris. Bike Sharing is a short-term bicycle rental system that allows users to make relatively short trips of 30 minutes to an hour, instead of using other modes of transportation (i.e. auto, public transit, taxicab, walking, etc.). Bicycle sharing is not geared towards longer distance recreational trips and generally serves local trips to work, shopping, and nearby destinations.

In an April 2008 article published by WesternITE – a publication of the Western District of the Institute of Transportation Engineers – I provided a detailed discussion of the Vélib' program. At that time, a limited number of bicycle sharing programs were available in the U.S.A.; but numerous cities were contemplating their use in the future. Many cities, including Washington, D.C., wanted to implement similar systems in their communities to

help promote the use of bicycling as an alternative mode of short-term transportation to replace automobiles, public transportation, taxis, and walking.

Between 2007 and 2014, bicycle sharing in the U.S.A has expanded substantially in many cities and universities throughout the country. The growth of existing and planned Bike Sharing programs in the U.S.A has grown exponentially over the past seven years. A summary of the number of Bike Sharing programs over the past seven years is shown in Exhibit A. As can be seen by Exhibit A, bike sharing has increased every year, especially between 2010 to 2014.

The purpose of this paper is to document some of the current and proposed bike sharing programs that are being implemented throughout the U.S.A. This discussion is primarily limited to local public agencies; however, numerous university programs are in operation and are successfully used by students and staff in lieu of other transportation modes.

Most systems in the U.S.A. are currently being run and operated by private companies who provide the physical hardware, bicycle monitoring systems, docking stations, maintenance, and operation administration, and in exchange they collect a portion of the fees collected through subscriber usage of the bicycle sharing systems. Some financial return to the local agencies is also provided on a case-by-case basis.

Currently, there are at least 45 American Bike Sharing programs in operation (including those which will be implemented within Year 2014). A summary of these bicycle sharing programs has been obtained through a survey and is shown in Table 1. In addition, there are numerous university systems in operation, including Kent State University, Ohio; Oakland University, Michigan; University of California, Irvine; University of Mississippi; University of Tennessee; and Washington State University. The advantage of the university bicycle sharing systems is that the travel areas where the bicycles are used are relatively small, so trip lengths are usually shorter than within an entire city. Also, students are accustomed to riding bicycles and have fewer automobiles available to them. The

universities are implementing their own programs for students with university staff which will serve local trips around the universities.

Benefits of a Bicycle Sharing Program

There are numerous benefits that occur as a result of a bicycle sharing program. An effective program will reduce dependency on automobiles and increase mobility to the public. This in turn will improve the environment, by reducing air emissions and Greenhouse Gases. This strategy is in keeping within current policies for sustainable communities and air quality regulations.

Bicycle sharing programs also provide an affordable transportation alternative. Annual subscription fees and usage charges are low and are affordable to all economic sectors, which may not be able to afford other transportation alternatives, such as automobiles, public transit, or taxis. Bicycle sharing reduces the need for individual bike ownership thereby eliminating the need for individuals to purchase, maintain, and store personal bicycles. It also reduces potential theft of individually owned bicycles which can be a deterrent to bicycle use. By limiting automobile trips, especially in the downtown areas, a reduced parking demand can reduce the need for onsite and street parking.

Successful Bicycle Sharing programs will improve air quality and reduce Greenhouse Gas emissions. This will reduce the number of automobile trips and VMT (Vehicle Miles Traveled) in a community, hence help meeting air quality goals.

Bicycle sharing programs also have substantial health benefits to the public. A large portion of the American society is overweight and bike sharing programs provide the opportunity for increased physical activity throughout the day. The use of bicycle transportation also encourages walking to access to the bike sharing docking stations and once a destination is reached.

Reducing the use of automobiles also has benefits in minimizing traffic congestion, especially in high density areas, which currently have traffic capacity issues. Bike sharing programs also create new jobs to both provide the service and maintain the bicycle systems. Finally, the program introduces people to the use of bicycles who would not typically utilize bicycles as an alternate means of transportation.

One of the major benefits of Bicycle Sharing is that it improves access to places where public transit cannot reach and acts as a distribution system for other forms of transportation. It will compliment public transit by giving additional opportunities to reach transit stations and bus stops which are out of reach by walking.

Bicycle Sharing programs can also improve the image and popularity of bike riding by opening it up to more people who do not currently use bicycling as a means of transportation.

Components of a Bike Sharing System

There are four main components of a Bike Sharing System. The primary component is the Bikes themselves. These consist of heavy duty bikes with adjustable seats, fenders for protection from water on the road, chain guards, multiple gears to negotiate grades, baskets to carry items, heavy duty tires to resist flats and ideally a GPS tracking system to keep track of the bikes. A photo of the Chicago program's bikes and docking stations is included in Exhibits B and C.

The next major component is the docking station and individual docks. These are the location where the bikes are stored when not in use and are located throughout the Bike Sharing Network. A photo of the Nashville Tennessee docking station system is included in Exhibit D. They include locking devices to secure the bikes when not in use and in some cases can be electronically monitored to inventory the system. Typically they will include parking for about 10 to 20 bikes at one location and will usually have more docks than bikes to insure that there is always room for a bike to be parked at a docking station.

At each of the docking stations, there is a directory which is used to activate the locks at the docking station. It is electronically linked to the docking station and central control system to monitor bikes being used and to confirm a user is being properly charged for the use of the bike sharing system. It will accept the Bike Sharing system card or other type of credit card which is used to identify the user and make the proper charges to the users account. A photo of a Nashville Tennessee directory is shown in Exhibit E.

There is also the need for a maintenance program for all of the bikes and system components. This includes vehicles to pick-up and distribute repaired bikes. They also monitor the various docking stations to review the condition of bikes and make the necessary adjustments to both bikes and docking stations. A central repair facility is needed in the event that repairs cannot be accomplished in the field. This facility needs to include spare bikes, parts, tires, etc. to keep the system running.

Finally there is a need for a central control system to interface with all of the docking stations and bikes in the system. It monitors the charges for the use of the bikes and maintains an inventory of all of the bikes in the system. It is used to maintain the records of members in the system and use of the bikes and charges to all of the subscribers in the system.

Operational Characteristics

Table 1 provides a list of the bicycle sharing programs, year initiated, and available information on the number of bicycles / docking stations, bicycles per station, population/area served, and number of daily trips for each program. The number of bicycles currently in operation or planned varies tremendously between each of the programs. The number of bicycles is as low as 12-28 in the Hawaii B-Cycle (Kailua, Hawaii) and Spartanburg B-Cycle (Spartanburg, South Carolina) programs to as many as 4,752 bicycles currently in the New York City Bike Share program. The New York program is projected to have 10,000 bicycles in their system. The number of stations also varies considerably among the programs. There are as few as two (2) docking stations in the

Sun Valley (Idaho), the Hawaii B-Cycle and Savannah (Georgia) programs and as many as 300 stations in the New York City and Washington D.C. Bike Share programs. Typically, there are approximately ten (10) to twenty (20) bicycles per station for most of the Bicycle Sharing Programs. Photos of typical bicycle stations operated by Chicago B-Cycle (Chicago, IL) are shown in Exhibit B (Downtown Chicago) and Exhibit C (Lake Michigan). A comparison of the U.S.A. bicycle sharing programs to the very successful Paris Vélib' system is also included in Table 1. As shown in this table, the Vélib' system provides a much more intense number of bicycles/docking stations and their usage is substantially greater than any of the existing or planned American systems. This is primarily due to population density, traditional use of bicycles for commuting, and the fewer number of automobiles per person in the Paris area.

It should be noted that many of the American systems close during inclement weather periods in the winter months. This usually occurs between the months of December and March to avoid the cold, wet, and snowy seasons in some areas of the U.S.A. During these conditions, the use of bicycles is not as feasible given the adverse weather conditions. The Paris system also sees a drop in usage during inclement weather, but they are still open during these periods.

The average number of trips in the American bike sharing programs varies substantially by the size of the program. A low of less than ten (10) trips per day was reported from the Des Moines B-Cycle (Des Moines, IA) and Greenville (South Carolina) Program; whereas, up to 27,840 trips per day have occurred in the New York City program and approximately 7,161 trips per day have occurred in the Capital Bike Share (Washington, D.C.) program.

One interesting operating system characteristic is the number of trips per bicycle per day for each of the bike sharing programs. On the low end, a trip rate of less than 0.30 trips per bicycle per day has occurred in the several programs; (Boise, Broward County, Fort Worth, and Greenville) whereas, over 2.5 trips per bicycle per day have occurred in the Boston, Houston, Miami, Milwaukee New York, Portland, Tulsa and Washington Bike Share

programs, respectively. The New York program has the highest utilization at 5.9 trips per bike per day. As can be seen in Table 1, the utilization rates for most U.S.A. systems are still substantially lower than the trip rates being achieved in the Paris Vélib' system which has produced nearly 6.8 trips per bicycle per day. Almost all of the bicycle sharing programs are in their infancy and not yet producing results which would significantly reduce the use of other modes of travel (i.e. automobiles). However as more bicycles and docking stations are provided, greater usage is expected.

Bicycle safety is stressed by the various programs. Safety criteria are posted on the various program websites which require compliance with local safety rules including the use of bicycle helmets. Many programs will also provide helmets if the user does not have one. Many programs (i.e. Chicago B-Cycle) show the potentially safest bicycle routes that interconnect the various docking stations.

Measures of Effectiveness

There are a number of factors that are used to determine the effectiveness of a Bike Sharing program. The two main factors include average number of daily uses per bike and the average daily trips per resident per day in the service area. These two factors have an inverse relationship, because a high number of trips per day could mean the service area is under served with the number of bikes that are available for the population served. A balancing of both factors will yield a better, well balanced system which will be economically viable.

Ideally the daily usage per bike should be in the range of four to eight trips per bike per day. This requires a relatively high turnover of bikes throughout the system. Most of the American systems have not reached this level of usage because they are new and have not developed a strong patronage at this early stage of development. Many of the older systems outside of the U.S.A (i.e. Paris, Mexico City, etc.) have a more mature program that has achieved this range of usage. As the American systems mature and expand, the usage factors should grow to significantly higher levels.

The average trips per day per population served is a measure of the penetration of the market served. Systems that are achieving one daily trip per twenty to forty residents is an indication of a high degree of market acceptance and the system is actually providing a significant benefit to the community being served. A summary of various U.S.A performance criteria is shown in Table 2.

Planning for an effective bike sharing system requires balancing these two performance characteristics. A high usage per bike per day without a significant average trip per resident per day rate indicates that there are too few bikes in the system and there is a need to serve a greater population base. Whereas, a low usage factor per bike with a larger trips per population served rate indicates an inefficient use of the bikes and very likely an excess amount of bikes in the system. As the American systems mature, there will be a need to fine tune these factors to optimize the number of trips per bike while also serving a greater number of trips per population served rate.

What Makes for a Successful Bike Sharing Program?

The success of a local bike sharing program is dependent upon a number of factors that can be increased through proper planning and implementation of the bike sharing system. Not all programs serve similar communities, therefore, local conditions need to be considered in implementing any bicycle sharing program. It is the author's opinion that the following twelve (12) items generally increase the success to a potential program:

1. There must be ample coverage of docking stations and bicycles throughout the service area. A station density of about 26 to 41 stations per square mile and 10-30 bikes for every 1,000 residents served desirable. Many U.S.A programs are still below these levels of development with their programs. There should be about 2-2.5 docking spaces per bike in the system. The minimum service area should be about 4 miles square to provide an effective service area. The system can be phased over time; however, high usage areas should be identified early in the planning process. Key

high density residential and destination areas, such as employment and retail centers, need to be serviced in the program.

2. Bikes should be sturdy, well-constructed and comfortable to ride. Additional amenities such as easily adjustable seats, lights, baskets, chain guards, fenders and locks should be provided with the bikes. Docking stations must be lockable and easy to use.
3. A tracking system (GPS) or other wireless system to keep track of the bikes is desirable for both security and the need to insure that bikes are available throughout the bike sharing network.
4. The area should be served by a good system of bicycle paths, on-street bicycle lanes, and bicycle routes within the community. There should be connectivity throughout a community where the bike sharing program is implemented.
5. Terrain must be considered in the bike sharing service area. Since most bicycles used have limited capabilities with respect to gearing and their weight, hilly communities may not be best served by bike sharing systems.
6. Higher density population areas – employment and other attractions – must be served. A review of demographics within the service areas need to be considered in advance of implementing any programs.
7. Use of the system must be simple and should charge relatively low fees for both the annual subscription and user charges to attract the most possible users within the service areas. Most systems have a membership fee for a certain number of days which entitles the member to use the bicycle for some short period of time (i.e. one hour) and then additional usage charges would apply for extra hours. Many programs allow the users to sign up for a specific membership card where the user

can charge directly to that card as the bicycles are used. In addition, the use of a credit card can be an option for temporary use.

The Capital Bike Share program (Washington, D.C.) uses a fee program very similar to the Vélib' system in Paris. Daily passes can be purchased for seven dollars or an annual pass for 75 dollars. Capital Bike Share allows the first 30 minutes of usage free of charge, a second 30 minutes is charged at \$1.50, and the third 30 minutes is charged at three dollars. This structure encourages the use of short trips primarily for work and errands.

8. The system must be well-maintained to ensure that the bicycles are always available within the community. An affective maintenance program is essential since poorly maintained bicycles will definitely affect usage of the system.
9. Within some service areas, there may be the need to redistribute bicycles if there is a high directional demand occurring during certain hours. In this case, the supply of bicycles needs to be adjusted throughout the day to meet the changing demand within the service area. This has been employed in the Paris Vélib' system.
10. An active public information program of the bicycle sharing system is imperative. Real-time electronic information systems are an important element of the system to allow users to locate available bikes and stations in their area. A public information program should identify the location of the docking stations where bicycles are available and how the system works. This requires an active marketing program in the community and web-based information systems are vital. The use of "smartphone" applications, to provide information on the availability of bicycles and location of docking stations, is an important component of a successful system.
11. There is a need to have a plan-phased expansion of the program, to show how the system will serve other areas of the community in the future. A small area system can

be implemented; however, information on future expansion should be disseminated to the public to show how the system will serve the community in the future.

12. A key element to a successful bike sharing program is ensuring that an experienced, well-funded system operator runs the system. At the present time, there are a number of these companies that have successfully implemented bike sharing systems throughout the Country.

These factors will all help maximize the use of the bike sharing system and its future success. It should be noted that several of the programs shown in Table 1 are very small and may not meet all of the criteria listed above, especially Item #1.

Feedback From Existing Programs

Based upon the survey of existing bicycle sharing programs, a number of issues were raised by the operators with respect to enhancing bicycle sharing opportunities. Some of these comments are as follows:

1. Provide greater flexibility of funding for bicycle sharing programs based upon governmental grants.
2. Enhance the flexibility to allow for bicycle use credits within the system. Unused minutes of bike sharing time could be applied to other uses of the bicycle sharing system.
3. Allow for specific governmental transportation grants for bicycle sharing start-up systems.
4. Provide for more software enhancements to manage the operation of bicycle sharing systems.

5. Provide for additional protected bike lanes integrated with transit systems.
6. Provide one charge card for use of bicycle sharing systems that can be used for both bicycles and public transit.
7. Provide for better mobile applications to be used in conjunction with bicycle sharing systems.
8. Provide better GPS and more bike infrastructure to support bicycle sharing systems.
9. Provide additional integration of bicycle sharing with public transit.
10. Continue to enhance technology for both bicycle docking stations and central control systems with respect to bicycle sharing.

Over time these items can be integrated into bicycle sharing programs to make them more effective. As noted a major item has to do with funding and providing additional grants and flexible funding for start-ups of bicycle sharing systems.

Where Are the Bike Sharing Programs Going?

Bike sharing programs are continuing to expand substantially in the U.S.A. Since 2007, when hardly any programs were in existence, bike sharing programs have expanded in many metropolitan areas to 45 programs by the end of Year 2014. Substantially more programs currently exist at various universities throughout the country. As noted in Table 1, several programs are in the pre-launch phase and may be in operation during 2014. Additional operational data regarding these programs will most likely be available by the end of 2014.

As people become more familiar with the bicycle sharing systems and a greater number of bicycles become available, their usage will substantially increase. Also, as the programs

expand, the number of trips per bicycle per day will increase over time. Since the urban density in most U.S. communities (typically 10,000 to 26,400 people per square mile) is not nearly as high as in Paris, France (which has 53,883 people per square mile) or many other European cities, usage levels may not reach the higher levels currently being seen in these high density cities. However, it is anticipated that through program expansion, additional marketing efforts, and increased system coverage, bicycle sharing in the U.S.A. will substantially expand in the near future.

Funding of bicycle sharing programs is another way to support the successful operation of new programs. This could include improvements in bicycle infrastructure (i.e. construction of bike lanes), through highway safety improvement programs, safe routes to school, and other transportation enhancement programs. Prototype systems can also be used to initiate new programs. The Orange County Transportation Authority (OCTA), located in Southern California, has just established a trial program which may be implemented in the near future. Funding for this feasibility study has come from the OCTA Transportation Planning Funds.

Marketing of the bicycle sharing programs is very important to their successful operation. Radio/television ads will enhance the understanding of the systems, but web-based and social media marketing is also critical in publicizing the program to potential users. All of the current/proposed U.S.A bicycle sharing programs have active websites to provide critical information to potential users of the system. This includes the number of bicycles/docking stations, how to use the system, location of the docking stations, and other frequently asked questions. Potentially, the best marketing practice is operation of the bike sharing program itself. As bicycles and docking stations appear in a community, they will act as their own advertising system to the local potential users who take interest in the program. The expansion of the program will then allow an added level of convenience and availability with an increased number of bicycles and docking stations within their community. This marketing technique is the main reason for Vélib's success, since their

bicycles are visible everywhere in the City. Likewise, as more bicycle sharing programs are expanded, increased usage will occur throughout the U.S.A.

Resources Used For This Study

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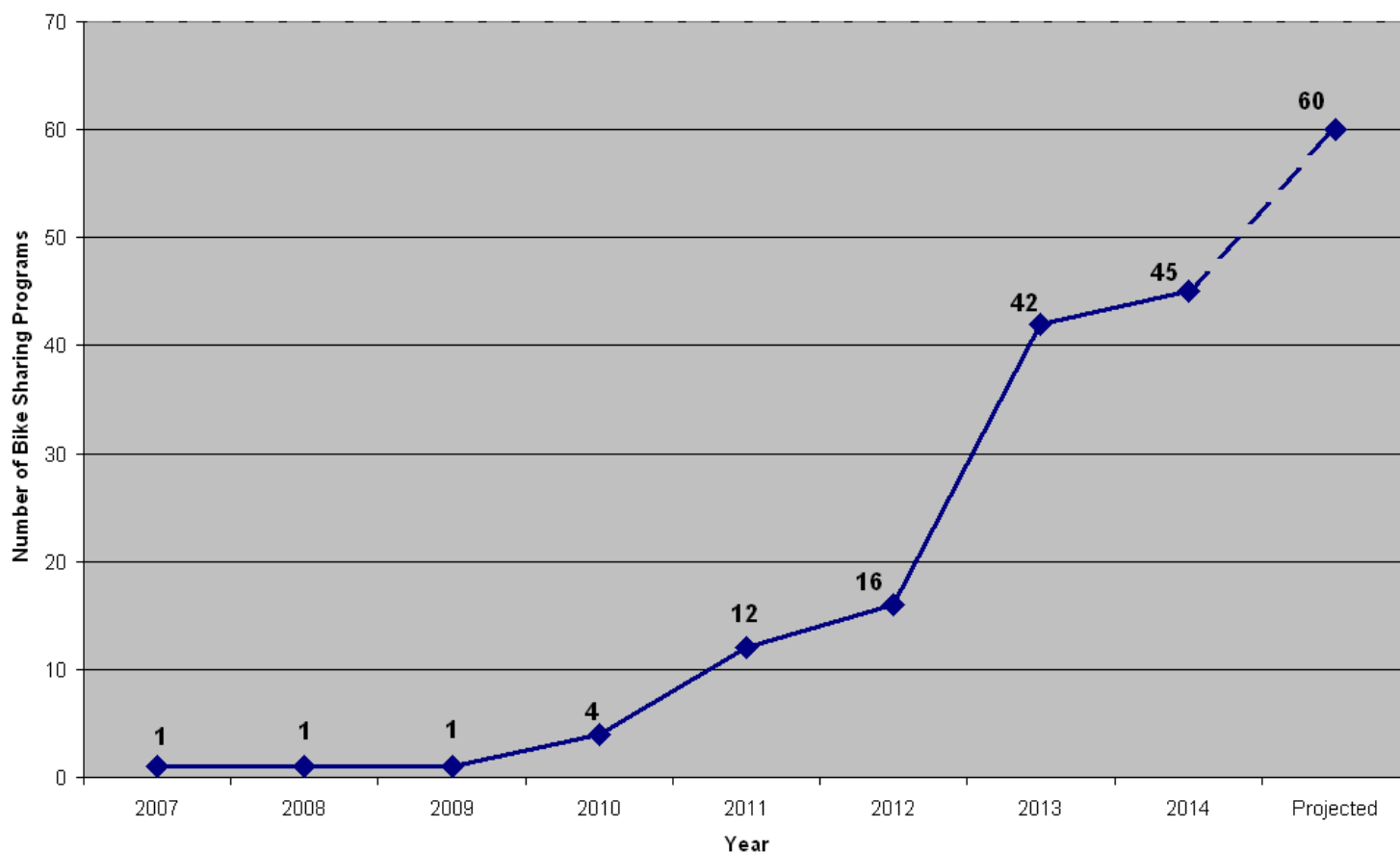
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Exhibits

Growth in USA Bicycle Sharing Programs

Growth in USA Bike Sharing Programs



Legend:

- = Active Programs
- - - = Pre-launched Programs



Exhibit B
Chicago Bicycle Sharing - Bikes



Chicago Bicycle Sharing - Docking Station



Nashville Bicycle Sharing - Bikes and Docking Station



Exhibit E
Nashville Bicycle Sharing - Directory



Tables

**Table 1
USA Bicycle Sharing Programs¹**

Operator	City	State	System Status ³	Start Date	# Bikes	# of Stations	# of Spaces	Square Miles Served	Population Size Served size served	Average Trips Per Day	Annual Operating Cost	# Out of Service	# Inoperable
B-Cycle	Ann Arbor ²	MI	Pre-Launch	June 2014	140	14							
We-Cycle	Aspen	CO	Active	6/5/13	100	13				55			
B-Cycle	Austin	TX	Active	12/21/13	110	11							
Alta Bicycle Share	Bay Area (adjacent)	CA	Active	8/29/13	620	69	1,223	7.5	125,402	799	N/A	N/A	N/A
Alta Bicycle Share	Mountain View	CA	Active										
Alta Bicycle Share	Palo Alto	CA	Active										
Alta Bicycle Share	Redwood City	CA	Active										
Alta Bicycle Share	San Francisco	CA	Active										
Alta Bicycle Share	San Jose	CA	Active										
Social Cyclist	Boise ²	ID	Pre-Launch	Fall 2014	140	14	210	2.0	62,500	40	\$350,000	N/A	N/A
Alta Bicycle Share	Boston (adjacent)	MA	Active	7/28/11	1,123	125	2,184	16.7	347,527	3,406	N/A	N/A	N/A
Alta Bicycle Share	Boston	MA	Active										
Alta Bicycle Share	Brookline	MA	Active										
Alta Bicycle Share	Cambridge	MA	Active										
Alta Bicycle Share	Somerville	MA	Active										
B-Cycle	Boulder	CO	Active	5/20/11	150	22	275	7.0	100,000	82	\$400,000	10	0
B-Cycle	Broward County	FL	Active	12/14/11	275	27				74			
B-Cycle	Charlotte	NC	Active	7/12/12	200	21							
Alta Bicycle Share	Chattanooga	TN	Active	7/23/12	300	33	545	3.0	172,000	118	N/A	N/A	N/A
Alta Bicycle Share	Chicago	IL	Active	7/28/13	2,035	300	5,088	47.8	786,590	4,072	N/A	N/A	N/A
B-Cycle	Cincinnati ²	OH	Pre-Launch	Summer 2014	200	20							
To be determined	Cleveland ²	OH	Pre-Launch	2015	1,100	110	2,090	17.5		2,329	\$1.5 mil -\$2.0 mil	N/A	N/A
CoGo bike share	Columbus	OH	Active	7/30/13	215	30	429	4.8	14,037	180	N/A		
Denver Bike Sharing	Denver	CO	Active	4/22/10	709	82	1,233	12.5	600,000	913	\$1.5 million	10-20	2
B-Cycle	Des Moines	IA	Active	9/8/10	18	4				8			
B-Cycle	Fort Worth	TX	Active	4/22/13	300	34	450	18.0	778,000	70	\$450,000	12	2
BikeNation USA	Fullerton	CA	Active	1/6/14	70	10							
B-Cycle	Greenville	SC	Active	4/9/13	28	6	52	1.75	460,000	9	\$54,000	0	0
B-Cycle	Honolulu ²	HI	Pre-Launch	2015	1,700	180							
B-Cycle	Houston	TX	Active	5/2/12	227	29	334	2.7	159,300	1,155	\$325,000	7	4
B-Cycle	Indianapolis ²	IN	Pre-Launch	Spring 2014	250	22							
B-Cycle	Kailua	HI	Active	5/20/2011	18	2							
B-Cycle	Kansas City	MO	Active	7/1/12	90	12							
BikeNation USA	Long Beach ²	CA	Pre-Launch	N/A	2,500	250							
B-Cycle	Madison	WI	Active	5/5/11	350	35	515	7.0	230,000	303	N/A	2-3	1
Decobike	Miami	FL	Active	1/1/13	1,000	100	1,600	6.5	100,000	4,302	N/A	N/A	N/A
B-Cycle	Milwaukee ²	WI	Pre-Launch	2014	1,000	100	2,000	16.0	100,000-150,000	3,500	N/A	N/A	N/A
Nice Ride Minnesota	Minneapolis	MN	Active	6/10/10	1,550	170		27.0	190,242				
B-Cycle	Nashville	TN	Active	12/13/13	200	21							
Alta Bicycle Share	New York City	NY	Active	5/27/13	4,742	330	11,592	15.4	827,307	27,840	N/A	N/A	N/A
Spokies	Oklahoma City	OK	Active	5/18/12	95	7							
B-Cycle	Omaha	NB	Active	6/15/11	35	8							
Social Bicycles	Phoenix ²	AZ	Pre-Launch	4/21/14	500	50							
To be determined	Pittsburgh ²	PA	Pre-Launch	Summer 2014	500	50							
Alta Bicycle Share	Portland ²	OR	Pre-Launch	Spring 2014	750	75	1,350	4.0	N/A	2,250	\$1.2 million	N/A	N/A
Social Bicycles	Providence ²	RI	Pre-Launch	2014	200	20							
B-Cycle	Salt Lake City	UT	Active	4/8/13	100	12							
B-Cycle	San Antonio	TX	Active	5/26/11	450	53	793	4.0	1.3 million	300	\$600,000	15-20	2
Decobike	San Diego ²	CA	Pre-Launch	Spring 2014	1,800	180							
To be determined	Santa Monica	CA	Pre-Launch	2014	350	35							
B-Cycle	Savannah	GA	Active	1/24/14	16	2	22	3.3	136,286	7	N/A	1	0
Alta Bicycle Share	Seattle ²	WA	Pre-Launch	2014	500	50	900						
B-Cycle	Spartanburg	SC	Active	7/7/11	28	4							
Mountain Rides	Sun Valley	ID	Active	7/18/13	18	2							
Social Bicycles	Tampa Bay ²	FL	Pre-Launch	Spring 2014	300	30	450	6.5	10,000	N/A	N/A	N/A	N/A
Tulsa Townies	Tulsa	OK	Active	8/8/07	30	3	48	10.0	400,000	76	N/A	1	1
Alta Bicycle Share	Washington, D.C. (adjacent)	DC	Active	9/20/10	2,649	316	5,232	36.6	470,579	7,161	N/A	N/A	N/A
Alta Bicycle Share	Alexandria	VA	Active										
Alta Bicycle Share	Arlington	VA	Active										
Alta Bicycle Share	Montgomery County	MD	Active										
Alta Bicycle Share	Washington	DC	Active										
JC Decaux	Parris, France	-	Active	7/15/07	20,600	1,451		37.1	1,998,200	140,000			

¹ Program data obtained from RK Engineering Group email survey, www.bikesharingworld.com, or the bike share program specific websites.

² This bike sharing system is in the pre-launch phase and therefore, the numbers are projected and not actual.

² There are several other bike share programs that are currently in the pre-launch phase (i.e. feasibility studies are in process or RFPs have been issued) and the programs listed here are a select few of the programs in the pre-launch phase.

Table 2
USA Bike Sharing Program Characteristics and Measures of Performance

Program Characteristics							Measures of Performance		
Operator	City	State	# Bikes Per Station	# Spaces Per Bike	# Stations Per Square Mile	# Bikes Per 1,000 in Population	# Daily Trips Per Bike	# Daily Trips Per 1,000 in Population	# Daily Trips Per Square Mile
B-Cycle	Ann Arbor	MI	10.0	-	-	-	-	-	-
We-Cycle	Aspen	CO	7.7	-	-	-	0.6	-	-
B-Cycle	Austin	TX	10.0	-	-	-	-	-	-
Alta Bicycle Share	Bay Area	CA	9.0	2.0	9.2	4.9	1.3	6.4	107
Alta Bicycle Share	Mountain View	CA	-	-	-	-	-	-	-
Alta Bicycle Share	Palo Alto	CA	-	-	-	-	-	-	-
Alta Bicycle Share	Redwood City	CA	-	-	-	-	-	-	-
Alta Bicycle Share	San Francisco	CA	-	-	-	-	-	-	-
Alta Bicycle Share	San Jose	CA	-	-	-	-	-	-	-
Social Cyclist	Boise	ID	10.0	1.5	7.0	2.2	0.3	0.6	20
Alta Bicycle Share	Boston	MA	9.0	1.9	7.5	3.2	3.0	9.8	204
Alta Bicycle Share	Boston	MA	-	-	-	-	-	-	-
Alta Bicycle Share	Brookline	MA	-	-	-	-	-	-	-
Alta Bicycle Share	Cambridge	MA	-	-	-	-	-	-	-
Alta Bicycle Share	Somerville	MA	-	-	-	-	-	-	-
B-Cycle	Boulder	CO	6.8	1.8	3.1	1.5	0.5	0.8	12
B-Cycle	Broward County	FL	10.2	-	-	-	0.3	-	-
B-Cycle	Charlotte	NC	9.5	-	-	-	-	-	-
Alta Bicycle Share	Chattanooga	TN	9.1	1.8	11.0	1.7	0.4	0.7	39
Alta Bicycle Share	Chicago	IL	6.8	2.5	6.3	2.6	2.0	5.2	85
B-Cycle	Cincinnati	OH	10.0	-	-	-	-	-	-
To be determined	Cleveland	OH	10.0	1.9	6.3	-	2.1	-	133
Cogo bike share	Columbus	OH	7.2	2.0	6.3	15.3	0.8	12.8	38
Denver Bike Sharing	Denver	CO	8.6	1.7	6.6	1.2	1.3	1.5	73
B-Cycle	Des Moines	IA	4.5	-	-	-	0.4	-	-
B-Cycle	Fort Worth	TX	8.8	1.5	1.9	0.4	0.2	0.1	4
BikeNation USA	Fullerton	CA	7.0	-	-	-	-	-	-
B-Cycle	Greenville	SC	4.7	1.9	3.4	0.1	0.3	0.0	5
B-Cycle	Honolulu	HI	9.4	-	-	-	-	-	-
B-Cycle	Houston	TX	7.8	1.5	10.7	1.4	5.1	7.3	428
B-Cycle	Indianapolis	IN	11.4	-	-	-	-	-	-
B-Cycle	Kailua	HI	9.0	-	-	-	-	-	-
B-Cycle	Kansas City	MO	7.5	-	-	-	-	-	-
BikeNation USA	Long Beach	CA	10.0	-	-	-	-	-	-
B-Cycle	Madison	WI	10.0	1.5	5.0	1.5	0.9	1.3	43
Decobike	Miami	FL	10.0	1.6	15.4	10.0	4.3	43.0	662
B-Cycle	Milwaukee	WI	10.0	2.0	6.3	-	3.5	-	219
Nice Ride Minnesota	Minneapolis	MN	9.1	-	6.3	8.1	-	-	-
B-Cycle	Nashville	TN	9.5	-	-	-	-	-	-
Alta Bicycle Share	New York City	NY	14.4	2.4	21.4	5.7	5.9	33.7	1,808
Spokies	Oklahoma City	OK	13.6	-	-	-	-	-	-
B-Cycle	Omaha	NB	4.4	-	-	-	-	-	-
Social Bicycles	Phoenix	AZ	10.0	-	-	-	-	-	-
To be determined	Pittsburgh	PA	10.0	-	-	-	-	-	-
Alta Bicycle Share	Portland	OR	10.0	1.8	18.8	-	3.0	-	563
Social Bicycles	Providence	RI	10.0	-	-	-	-	-	-
B-Cycle	Salt Lake City	UT	8.3	-	-	-	-	-	-
B-Cycle	San Antonio	TX	8.5	1.8	13.3	-	0.7	-	75
Decobike	San Diego	CA	10.0	-	-	-	-	-	-
To be determined	Santa Monica	CA	10.0	-	-	-	-	-	-
B-Cycle	Savannah	GA	8.0	1.4	0.6	0.1	0.4	0.1	2
Alta Bicycle Share	Seattle	WA	10.0	1.8	-	-	-	-	-
B-Cycle	Spartanburg	SC	7.0	-	-	-	-	-	-
Mountain Rides	Sun Valley	ID	9.0	-	-	-	-	-	-
Social Bicycles	Tampa Bay	FL	10.0	1.5	4.6	30.0	-	-	-
Tulsa Townies	Tulsa	OK	10.0	1.6	0.3	0.1	2.5	0.2	8
Alta Bicycle Share	Washington, D.C.	DC	8.4	2.0	8.6	5.6	2.7	15.2	196
Alta Bicycle Share	Alexandria	VA	-	-	-	-	-	-	-
Alta Bicycle Share	Arlington	VA	-	-	-	-	-	-	-
Alta Bicycle Share	Montgomery County	MD	-	-	-	-	-	-	-
Alta Bicycle Share	Washington	DC	-	-	-	-	-	-	-
JC Decaux	Parris, France		14.2	-	39.1	10.3	6.8	70.1	3,774