

birmingham bikeshare

Feasibility Study



RPCGB
REGIONAL PLANNING COMMISSION
OF GREATER BIRMINGHAM



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Executive Summary

Implementation of bikeshare systems throughout the U.S. has exponentially increased in the last few years. Rising costs in transportation and current trends focusing on increasing the livability and creating sense of place have moved cities to embrace innovative mobility approaches to help curve the effects of traffic and to offer better and more cost effective connections to jobs and activities. Bikeshare represents one such approach, ideal for short distance point-to-point trips that allow users to easily connect between self-serve stations and expand the reach of existing transportation options. Bikeshare has also been seen to positively affect how residents, employees, and visitors experience a city. It allows for increased access and connectivity to different parts of the city, replacing single occupancy vehicle trips and promoting an active lifestyle.



Figure 1 - Rendering of Potential Bikeshare Station at Regions Field

The City of Birmingham is a unique community due to its industrial and historic past. Because of the City's focus on livability and redevelopment throughout much of its core, as well as growing trends in bicycling culture, the Regional Planning Commission of Greater Birmingham (RPCGB) is exploring the feasibility of implementing a bikeshare system. A set of goals were defined by the RPCGB and local stakeholders to guide and promote the implementation of a bikeshare system in Birmingham. These goals are:

- **Goal 1 - Livability & Economic Competitiveness:** Develop an innovative transportation system that improves Birmingham's livability and economic competitiveness.
- **Goal 2 - Social & Geographic Equity:** Provide a system that is accessible to a broad cross-section of Birmingham's population.
- **Goal 3 - Health & Safety:** Provide residents and visitors with a safe mode of transportation that promotes active and healthy living.
- **Goal 4 - Finances & Transparency:** Create a system that is financially sustainable and accountable to the public.

With these guiding principles, and based on a comprehensive analysis of population and employment data, review of existing conditions, evaluation of existing plans and regulations, as well as a complete stakeholder engagement and public input process, the implementation of a bikeshare program in Birmingham is found to be FEASIBLE. Some of the reasons behind this recommendation included a flat and easy to navigate downtown area with wide street widths; high population density throughout much of the downtown and neighboring areas; significant employment density to provide increased number of potential bikeshare users; a large number of stakeholders committed to downtown revitalization and the promotion of Birmingham as a livable, walkable and bicycle friendly city, as well

as an emerging residential population that desires increased access and connectivity to jobs and destinations.

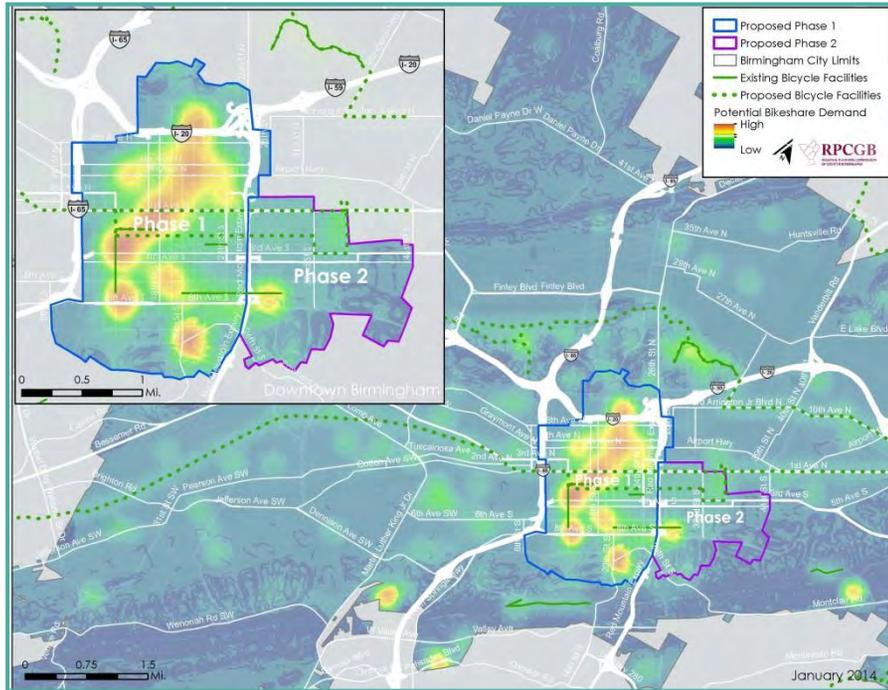


Figure 2 - Proposed Bikeshare Phasing Areas

While the City does exhibit a number of characteristics that are conducive for implementing a bikeshare system, there are also some challenges. Its bicycle infrastructure, while continually growing, is still **not completely developed** and single-occupancy vehicle trips still make up the bulk of transportation in Birmingham. This is encouraged by an abundant supply of free or low cost parking in many areas of the City. Further, there are **concerns about neighborhood connectivity and accessibility** that would be best mitigated by providing a more robust bicycle friendly network of facilities that integrates and complements the existing

transit network. Finally, some **existing local city ordinances** limit what can be placed in the public right-of-way and the use of advertising.

An analysis of existing conditions and needs finds that Birmingham has the potential to support an initial bikeshare system that includes 300-to-400 bicycles and between 30-to-40 stations in two distinct phasing areas. The proposed system would begin implementation in Downtown Birmingham and expand to include the neighborhoods of Avondale, Forest Park, and Highland Park and serve activity and job centers including Pepper Place, Lakeview District and St. Vincent's Hospital. These locations offer the highest potential demand for bikeshare. See map for more information.

	Service Area (per sq. mi.)	Stations	Bicycles	Station Density (per sq. mi.)
Phase 1	3.31	20 – 40	200 – 400	6.04 – 12.08
Phase 2	1.43	5 – 10	50 – 100	3.50 – 8.39
Total	4.74	25 – 50	250 – 500	5.07 – 10.97

Table 1 - Proposed Bikeshare Phasing

Preliminary conversations with stakeholders in the region, as well as a review of programmatic structures and organizational capacity within the RPCGB, indicate that the organization is ideally situated to undertake the management, procurement, and implementation of a bikeshare system. Such management structure will facilitate access to various sources of federal, regional and local funding, while helping enable any potential regional expansion of a bikeshare program. This option will be further investigated in an Implementation Plan for the bikeshare system in Birmingham.

Introduction



Figure 4 - Boulder B-Cycle

Purpose of This Study

This Feasibility Study assesses the readiness of the City of Birmingham for implementing a bikeshare program. In particular, it addresses whether it can be successful and what recommendations can be made to improve the City's readiness and likelihood for success.¹

First, a general background on bikeshare is explained which includes an analysis of the benefits of bikeshare. Then, a peer review of operating practices is provided. Following this introduction, the study

¹ The words bikeshare and bikesharing are used interchangeably throughout this feasibility analysis.

follows the framework outlined in Figure 4 and includes phases for information gathering, goal setting, community analysis, public and stakeholder input, system planning, and evaluation of feasibility.

Each section of the study addresses one of these phases and contains a set of opportunities, challenges, and recommendations for successfully implementing a bikeshare program in Birmingham. After considering the challenges and opportunities, an overall evaluation of the feasibility of launching a bikeshare program is undertaken.

The consultant team was advised through the course of the project by the Regional Planning Commission of Greater Birmingham (RPCGB) staff, regional stakeholders, and members of the community. The feedback received by these groups provided key direction to the study.

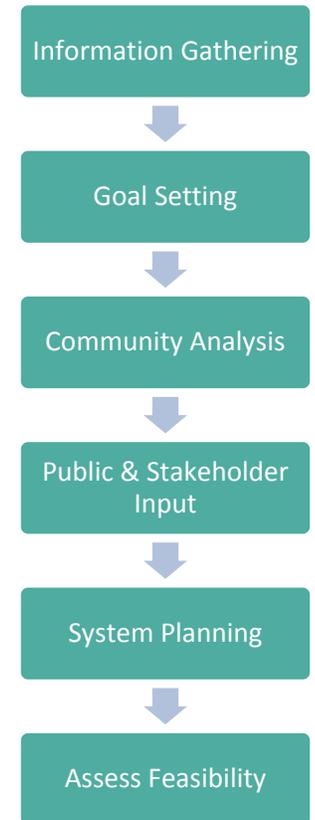


Figure 3 - Framework for the Study

Background

What is Bikeshare?



Figure 5 - Nice Ride.

Bikeshare is a transportation system that allows users to access bicycles located at self-service kiosks located throughout a community. A bikeshare system is typically accessed through a low-cost subscription ranging from one-day access to annual membership.

Bikeshare is ideal for short distance trips. This allows subscribers to make as many trips as often as they like, without additional charges, provided they return the bicycles to any station in the system within 30 to 60 minutes. After that time, most operators charge incrementally increasing fees to encourage users to return

the bicycles when they are not being used, which encourages turnaround for other users.

In cities across the U.S., bikeshare systems have proven popular and provided residents and visitors a fast, affordable, and easy-to-use transportation option to get around town.

Characteristics of a Bikeshare Program

Bikeshare programs are oriented to short-term, point-to-point trip-making. Most U.S. bikeshare trips are between 15 to 20 minutes and between one to three miles. ²

The bicycles are designed to be easy to operate with simple components and adjustable seats. They can be returned to any station - including the original checkout location or any other station. The rental transaction is fully automated and there is no need for on-site staff.

Elements of Bikeshare³

Most programs in the U.S. are self-serve utilizing credit cards and radio frequency identification (RFID) methods for increased user accountability. There are emerging technologies such as "smart-bike" systems, where user accountability and other features are moved onto the bicycles rather than at the stations. These systems provide additional flexibility but are generally untested in large scale municipal bikeshare programs.

The following is a description of the elements of a station-based bikeshare program:

² Bike Sharing in the United States: State of the Practice and Guide to Implementation. Federal Highway Administration. United States Department of Transportation. September 2012.

³ Ibid



Figure 6 - Elements of Bikeshare

- **Station:** collective grouping of the following elements.
 - **Kiosk:** electronic terminal where all rental transactions are made.
 - **Informational Panel:** a display that can be used to provide maps, information about the system, and space for advertising.
 - **Dock:** mechanism that holds the bicycles. Each dock has a mechanized system that locks and releases the bicycles.
 - **Platform:** structure that holds the kiosk, information panel, and docks. Most systems utilize wireless technology and solar power so that intrusion into the surface is not necessary. Most systems are modular, allowing various sizes and arrangements.
- **Bicycle:** bicycles are specifically designed for short trips and constructed of customized components to limit their appeal to theft and vandalism.
- **RFID Card:** Radio Frequency Identification technology, usually in the form of a card or fob, allows users to check

out a bicycle directly from the dock and speeds up transactions. This also provides an added layer of security and accountability to each transaction.

Benefits of Bikeshare

Bikeshare is a relatively inexpensive and quick-to-implement transportation option that can deliver a variety of health, environmental, economic, transportation and mobility, and safety benefits. When combined with other modes of transportation, bikeshare can provide a fundamental shift in the way people move about and make decisions on transportation.

For Birmingham, bikeshare could be a means to:

- Expand and enhance existing transit services.
- Reduce dependence on automobile transportation.
- Introduce new riders to the benefits of bicycling.
- Promote the city to potential employers, residents, and visitors.
- Provide an economic uplift to local businesses.
- Reduce household transportation expenditures.
- Improve physical and mental health and reduce health care costs.
- Reduce greenhouse gas emissions.

These benefits are described in more detail in the sections below.

Health Benefits

Bikeshare systems have become a significant addition to the active transportation options of over 30 cities in the United States. It is well documented that engaging in light to moderate physical activity reduces the risk of heart disease, stroke, and other chronic and life-threatening illnesses and

bikeshare provides one of the best opportunities to increase access to physical activity and to lower health care costs.⁴

Bikeshare is a means for people to incorporate active transportation into their daily lives and lower medical and health care costs. Bicycling for 30 minutes a day, e.g., using bikeshare to go to and from work each day can reduce the risk of heart disease by 82%⁵ and reduce the risk of diabetes by up to 58%.⁶

A study of the *Bicing* bikeshare system in Barcelona, Spain published in the *British Medical Journal* in 2011 compared the benefits of increased physical activity to the additional risks introduced from increased inhalation of air pollutants and increased exposure to traffic crashes. The study found that over 10 deaths were avoided each year due to increased physical activity, offsetting any smaller increases in expected deaths from air pollutant inhalation and traffic crash exposure.⁷

The health benefits of bikeshare are recognized by the health care industry. The federal government, through the Center for Disease Control (CDC), has funded several different systems including in Boston and Nashville. For many existing U.S.

programs, including Nice Ride (Minneapolis / St. Paul, MN), San Antonio B-Cycle, Denver B-Cycle, and Spartanburg B-Cycle, the health benefits of bikeshare have attracted interest from the health care industry (specifically, health care providers) to become major sponsors.

Bikeshare can also have a positive impact on mental health. Users in other cities have expressed that bike share has positively contributed to an improved outlook, increased recreation, and improved sociability.⁸

Environmental Benefits

Bikeshare programs have minimal negative impact on the environment. Most third generation systems are solar powered creating no emissions associated with operating the stations. However, there can be emissions associated with redistributing the bicycles, which is typically conducted with vans and a fleet of vehicles. Some cities are using cargo bicycles or electric vehicles to move bicycles from station to station to reduce this impact (see Figure 7).



Figure 7 - Redistribution vehicle in San Antonio B-Cycle

Bikeshare programs have helped reduce emissions by shifting some trips from private automobile. In communities where bikeshare is an active transportation option, surveys have shown that approximately 20-to-40 percent of annual member

⁴ Health benefits of Bicycling. Pedestrian and Bicycle Information Center. Accessed from http://www.bicyclinginfo.org/why/benefits_health.cfm on April 30, 2013.

⁵ British Medical Association (1992). *Cycling Towards Health and Safety*. Oxford University Press.

⁶ Lindström, J. et al. *The Finnish Diabetes Prevention Study: Lifestyle intervention and 3-year results on diet and physical activity*. *Diabetes Care*, December 2002, vol. 26 no. 12 3230-3236. Accessed online at <http://care.diabetesjournals.org/content/26/12/3230.full> on December 13, 2013.

⁷ Rojas-Rueda, D. et. al. (2011). *The Health Risks and Benefits of Cycling in Urban Environments Compared with Car Use: Health Impact Assessment Study*. *British Medical Journal* 2011; 343:d4521. Accessed online at: <http://www.bmj.com/content/343/bmj.d4521> on January 2, 2014. Statistics reported are based on the sensitivity analysis that assumes 10% of Bicing trips replace car trips.

⁸ *Capital Bikeshare 2013 Member Survey Report*. Accessed from <http://capitalbikeshare.com/assets/pdf/CABI-2013SurveyReport.pdf> on January 3rd, 2014.

bikeshare trips replace what would have been an automobile trip. A survey of Capital Bikeshare members in Washington D.C. in 2011 showed that bikeshare trips had replaced approximately 4.4 million vehicle miles, representing a four (4) percent decrease in the city's annual driving mileage.⁹

In its first season of operation, Denver B-Cycle users took over 100,000 trips and rode more than 200,000 miles. A survey of members showed that over 40% of trips replaced a vehicle trip, resulting in nearly a 16,000 gallons savings in gasoline consumption and avoiding over 300,000 pounds of greenhouse gas emissions. Furthermore, in 2011, San Antonio B-Cycle and Denver B-Cycle reported an offset of over 1 million pounds of CO₂ combined.¹⁰

Bikeshare ties in with the City's proposed Sustainability and Green Spaces goals outlined in their Comprehensive Master Plan. These goals include energy efficiency for city operations, incorporation of sustainable planning and design at regional, city, neighborhood and project levels, and the reduction of air pollution.¹¹

Economic Benefits

Compared to other transportation modes, bikeshare programs are relatively inexpensive and quick to implement. The relative cost of

implementing a bikeshare program is less than other transportation investments (see Table 2).¹²

Item	Capital Cost
One lane-mile of urban highway	\$2.4 million to \$6.9 mil. ¹³
One transit bus	\$371,000 to 533,000 ¹⁴
Entire Chattanooga bikeshare system (33 stations)	\$1.5 million ¹⁵

Table 2 - Average Costs of Transportation Projects

Cities with existing programs have also benefited from the flexibility and ease of implementation of bikeshare programs. Many cities have been able to plan, implement and launch a bikeshare system in under two years, which is typically less lead time than other major transportation projects.¹⁶

For users, bikeshare programs have been able to reduce the personal cost of urban transportation, becoming one of the cheapest ways to get around.¹⁷ The cost usually includes a membership fee, between \$5 to \$10 per day or usually \$50 to \$100 per year. Ridership is typically free if the user returns the

⁹ LDA Consulting (2012). *Capital Bikeshare 2011 Member Survey Report*. Accessed online at <http://capitalbikeshare.com/assets/pdf/Capital%20Bikeshare-SurveyReport-Final.pdf> on December 3, 2013

¹⁰ 2011 Annual Report. B-Cycle Denver. Retrieved from http://www.denverbikesharing.org/files/DBS_2011_Annual_Report.pdf on May 1st, 2013

¹¹ City of Birmingham Comprehensive Master Plan Part II, Chapter 6 (Sustainability and Green Practices). Accessed from http://www.birminghamcomprehensiveplan.com/wp-content/uploads/2012/10/CH6_Sustainability-LO.pdf on November 1, 2013.

¹² Hernandez, Mauricio. Multimodal debate – Cost comparison of implementing a bike share program vs. a bus rapid transit system. University of Maryland. December 2011.

¹³ Rails To trails – Cost of constructing one mile of highway. Retrieved from <http://www.railstotrails.org/resources/documents/whatwedo/policy/07-29-2008%20Generic%20Response%20to%20Cost%20per%20Lane%20Mile%20for%20widening%20and%20new%20construction.pdf> on August 21, 2013.

¹⁴ Transit Bus Life Cycle Cost and Year 2007 Emissions Estimation Federal Transit Administration. U.S. Department Of Transportation. Retrieved from http://www.fta.dot.gov/documents/WVU_FTA_LCC_Final_Report_07-23-2007.pdf on August 21, 2013.

¹⁵ Interview with Stefanie deOlloqui, MS MCHES Associate Director. Active Living and Transportation Network.

¹⁶ Bike Sharing in the United States: State of the Practice and Guide to Implementation. Federal Highway Administration. United States Department of Transportation. September 2012.

¹⁷ Capital Bikeshare commuters share why they ride — and its drawbacks. Retrieved from http://www.washingtonpost.com/local/capital-bikeshare-commuters-share-why-they-ride--and-its-drawbacks/2012/01/26/gIQAQzdGjQ_story.html. Washington Post online. March 2013.

bicycle within the 30-to-60 minute grace period, but following that period, fees increase depending how long the bike is checked out (see Table 3 for an example of the fee schedule for Bike Chattanooga). This compares to the annual costs of running and maintaining a car which are around \$7,000 to \$10,000.¹⁸

For cities, existing U.S. bikeshare programs have experienced good rates of “farebox recovery” (i.e., the proportion of operating costs recouped by user revenues) compared to other modes of transportation (i.e., bus, rail), relying less on local subsidies and funding, and making them more cost-effective transportation alternatives. For comparison, the Birmingham Transit bus service has an operating recovery rate of 13 percent¹⁹ compared to Boulder B-Cycle (the bikeshare program in Boulder, CO) which recovered approximately 35 percent of its operating costs through user revenues in 2012. Cities have been successful in leveraging sponsorship and advertising agreements and other fundraising activities to fill the gap in operating funds.

A bikeshare system can help a community attract and retain residents. Many communities see bikeshare as part of a revitalization effort for their downtown area. In addition, it provides a new and different way for tourists to see a city, helping attract more tourists and their spending power.

Table 3 - Chattanooga Membership and Usage Fees

Membership	Cost
Yearly	\$75
Corporate	\$50
24 hour/Daily	\$6
Usage Fees	Cost
0 – 59:59 min	\$0
60:00 – 89:59 min	\$5
90:00 – 119:59 min	\$10
2:00:00 – 2:29:59 hours	\$15
2:30:00 – 2:59:59 hours	\$20
3:00:00 – 3:29:59 hours	\$25
3:30:00 – 3:59:59 hours	\$30
4:00:00 – 4:29:59 hours	\$35
4:30:00 – 4:59:59 hours	\$40
5:00:00 – 5:29:59 hours	\$45
5:30:00 – 5:59:59 hours	\$50
6:00:00 – 6:29:59 hours	\$55
6:30:00 – 6:59:59 hours	\$60
7:00:00 – 7:29:59 hours	\$65
7:30:00 – 7:59:59 hours	\$70
8:00:00 – 8:29:59 hours	\$75
8:30:00 – 8:59:59 hours	\$80
9:00:00 – 9:29:59 hours	\$85
9:30:00 – 9:59:59 hours	\$90
10:00:00 – 10:29:59 hours	\$95
10:30:00 – 10:59:59 hours	\$100
11:00:00 – 23:59:59 hours	\$100 max. fee

The amount of national and international press coverage generated by a bikeshare system promotes the city to visitors, businesses, and employers. For example, the launch of Charlotte B-Cycle in North Carolina received exposure in 18 newspapers including the New York Times.²⁰ A bikeshare system also creates a small number of local jobs linked to the operations and maintenance of the system.

¹⁸ What that car really costs to own. Knowing a vehicle's cost over time can save you thousands in the long haul <http://www.consumerreports.org/cro/2012/12/what-that-car-really-costs-to-own/index.htm>

¹⁹ Comprehensive Transit Development Plan. Birmingham-Jefferson County Transit Authority. July 2008. Pg. 27 Accessed from <http://www.bjcta.org/wp-content/uploads/2012/12/MAX-TDP-Final-Report-July08-large.pdf> on December 3, 2013.

²⁰ *From the Sponsor's Perspective* (2013). Accessed online at www.bikeshare.com on December 12, 2013.

Bikeshare can also bring economic development through increased economic activity within the service areas.²¹ Recent studies have indicated that there is increased economic activity at businesses located in the vicinity of bikeshare stations.²² This phenomenon has been observed in Miami Beach, where around 80% of Deco Bike users reported to be more likely to patronize a business with a bikeshare station in the vicinity²³ and in Minneapolis/St. Paul, where bikeshare users spent an additional \$150,000 at businesses located in the vicinity of a bikeshare station over the course of one season.²⁴

Transportation / Mobility Benefits

Bikeshare increases mobility and access throughout the community by adding transportation options. Bikeshare trips tend to be short – one to two miles in length and about 20 minutes in duration. As a result, they provide an option for trips too far to walk and trips too short to wait for transit, and provide a perfect first-mile/last-mile solution to access public transit. Additionally, bikeshare programs tend to improve connectivity to different parts of the city where transit does not reach. In a customer survey, 64 percent of Capital Bikeshare respondents reported that they would not have otherwise made a trip if bikeshare was not available²⁵. By offering a first- and last-mile option that extends the reach of

existing fixed-route services, bikeshare tends to help connect transit lines that do not cross, and adds capacity to already congested transit routes. Following are some examples of how bikeshare has augmented transit in other cities:

- In New York City, two-thirds of Citi Bike users link their bikeshare trips with transit, with the busiest stations clustered near transit hubs.²⁶ An example of bike share's role in extending transit can be seen on the Lower East Side. These stations provide a first- and last-mile connection for an area currently underserved by mass transit. Daily usage patterns at these stations follow an outward flow of bicycles from the neighborhood in the morning and a reverse of this pattern in the afternoon.²⁷
- Several cities, including New York City and Vancouver, Canada, have identified bikeshare as a means to alleviate over-capacity transit routes by providing an option for bicycling to less crowded stops or to replace certain transit trips altogether.^{28,29}
- In Washington D.C. over half (54 percent) of respondents to Capital Bikeshare's member survey stated that at least one of their bikeshare trips in the previous month started or ended at a Metrorail station and about a quarter (23

²¹ Capital Bikeshare becoming an economic development tool. Accessed from http://washingtonexaminer.com/capital-bikeshare-becoming-an-economic-development-tool/article/2531458?custom_click=rss on June 10, 2013.

²² Schoner, Jessica E.; Harrison, Andrew; Wang, Xize; Lindsey, Greg. Sharing to Grow: Economic Activity Associated with Nice Ride Bike Share Stations. Technical Report. September 2012

²³ Colby Reese. Deco Bike president. ProWalk ProBike 2012 presentation.

²⁴ Schoner, J.E., Harrison, A. and Wang, X. (2012). *Sharing to Grow: Economic Activity Associated with Nice Ride Bike Share Stations*. Humphrey School of Public Affairs, University of Minnesota.

²⁵ 2011 Capital Bikeshare Customer Survey. Retrieved from <http://capitalbikeshare.com/assets/pdf/Capital%20Bikeshare-SurveyReport-Final.pdf> on April 28, 2013.

²⁶ New York City Department of Transportation Press Release (December 12, 2013). *After First 200 Days of Citi Bike, NYC DOT Releases New Data Showing that Significant Number of New Yorkers are Biking, Complementing Transit System*.

²⁷ For example, view the E 10th Street & Avenue A bike share station in New York: <http://bikes.oobrien.com/newyork/>.

²⁸ New York City (2009). *Bike Share Opportunities in New York City*. Accessed online at: http://www.nyc.gov/html/dcp/pdf/transportation/bike_share_complete.pdf on January 2, 2014.

²⁹ Johnston, S. (July 2013). Presentation to Vancouver City Council: *City of Vancouver Public Bike Share System*. Accessed online at: <http://vancouver.ca/files/cov/public-bike-share-staff-presentation-to-council-07232013.pdf> on January 2, 2014.

percent) of respondents used bikeshare to access the bus in the previous month.³⁰

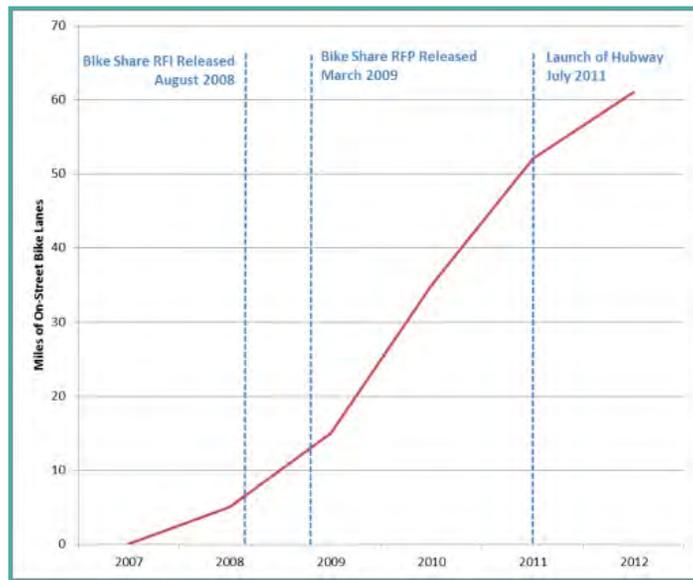


Figure 8 – Bikeshare and Implementation Bicycle Infrastructure in Boston

Bikeshare has also proven one of the most effective ways of quickly and affordably introducing new riders to bicycling using the momentum around bikeshare to drive further investment in active transportation. In addition, bikeshare is often coupled with an increase in bicycle infrastructure. Figure 8 shows an example of how the City of Boston increased the amount of on-street bikeways in conjunction with the implementation and launch of bikeshare. While the exact correlation between bikeshare and investment in bikeways

has not been studied, it is clear that utilization of bikeshare increases the desire for a more comfortable riding environment and may prompt increased investment in the bicycling network as a result of public demand.

Safety Benefits

Although there is only a relatively short period of data available on crash statistics, most existing U.S. bikeshare programs have reported very low crash rates. To date, there have been no fatalities on bikeshare bicycles in the United States, and crash and injury rates are generally lower than crashes and injuries among bicyclists riding their personal bikes.³¹

For example, as of summer 2013, the three largest systems in the U.S. (i.e., Citi Bike in New York City, Capital Bikeshare in Washington D.C., and Divvy in Chicago) reported just 20 crashes. This may be explained by the “safety in numbers” effect. A study published in *Injury Prevention* in 2003 showed that the “likelihood of a person walking or bicycling being struck by a motorist varies inversely with the amount of walking and bicycling.”³² The injury rate referred to as “relative risk index” exponentially reduces with the number of cyclists using the road system (in this case using journey to work mode share as a proxy for the overall amount of cycling).

³⁰ LDA Consulting (2013). 2013 Capital Bikeshare Member Survey Report. Accessed online at <http://capitalbikeshare.com/assets/pdf/CABI-2013SurveyReport.pdf> on December 13, 2013.

³¹ Bike Sharing in the United States: State of the Practice and Guide to Implementation. Federal Highway Administration. United States Department of Transportation. September 2012.

³² Jacobsen, P.L. (2003). Safety in Numbers: More Walkers and Bicyclists, Safer Walking and Bicycling. *Injury Prevention* 2003;9:205-209.

Other factors contributing to bikeshare's safety record include:³³

- Heavier bicycles with more robust tires and gearing, causing riders to go at slower speeds.
- Drum brakes on most bikeshare bicycles which make slowing more efficient.
- Integrated flashing lights in every bicycle.
- Design of the bicycle - with low step over height which makes it easier for the user to regain their balance quickly.
- Regular bicycle safety inspections by the bikeshare program operator.



Figure 9 – Bike Chattanooga

Comparable Cities

Four peer systems were identified from among active U.S. bikeshare systems based on similarities in geographic size and population scale. These programs were also selected to highlight different operational and ownership models and to share the experiences of various market sizes. The cities included:

- **Boulder B-Cycle** (Boulder, CO)
Boulder B-Cycle was one of the first bikeshare programs to be launched in smaller jurisdictions in May 2011. With 22 stations and 125 bicycles, the program serves a population of just over 100,000 according to the latest census figures.

The program is owned and operated by Boulder B-Cycle, a nonprofit organization specifically created to administer the program.

- **Charlotte B-Cycle** (Charlotte, NC)
Charlotte B-Cycle operates a 21-station, 200 bicycle system throughout downtown Charlotte. It was launched for the Democratic National Convention with private funding. With operations starting on July 2012, Charlotte B-Cycle was one of the first bikeshare systems operating in the southeastern United States. This system connects many of the City's 755,202 residents to various destinations around downtown. The program is owned and operated by a local Charlotte nonprofit organization.
- **Chattanooga Bicycle Transit System** (Chattanooga, TN)
This system was funded by \$2 million of federal funding, is owned by the City of Chattanooga and operated by Alta Bicycle Share (a private bikeshare operator). It was implemented in July 2012 with 31 stations and 300 bicycles and serves a population of over 170,000 people. This system has a partnership with the University of Tennessee Chattanooga.
- **Denver B-Cycle** (Denver, CO)
The system is managed and owned by Denver Bike Sharing, a non-profit organization created with the express intention of managing this 52 station and 520 bicycle system. Most stations are located throughout downtown Denver and the surrounding neighborhoods.

The matrix below presents additional information and summarizes the most important characteristics of these four programs.

³³ Bike Sharing in the United States: State of the Practice and Guide to Implementation. Federal Highway Administration. United States Department of Transportation. September 2012.

Program Profiles⁺

	Boulder, CO	Charlotte, NC	Chattanooga, TN	Denver, CO
System Name	Boulder B-Cycle	Charlotte B-Cycle	Bike Chattanooga	Denver B-Cycle
Web Address	boulder.bcycle.com	charlotte.bcycle.com	bikechattanooga.com	denver.bcycle.com
Start Date	20-May-11	31-Jul-2012	23-Jul-12	20-Apr-10
Number of Bikes	125	200	250	520
Number of Stations	22	21	31	52
<i>Bikes per station</i>	5.7	10	8.1	10
<i>Service Area (Sq. Mi.)*</i>	10.6	11.0	2.0	12.57
<i>Station Density**</i>	2.1	1.8	15.2	4.14
<i>Core Operating Area (Sq. Mi.) ***</i>	10.0	3.1	2.0	10.25
<i>Core Operating Stations</i>	15	10	31	40
<i>Core Station Density</i>	7.8	3.2	6.2	8.2
Casual Membership	9,059	11,216	5,054	41,000
Annual Membership	869	511	566	2,750
Annual Subscriber Trips	13,568	n/a	16,184	75,798
Annual Casual Trips	11,786	n/a	15,816	131,176
Total Annual Trips	25,354	32,000	32,000	206,974
<i>Annual Trips per Bike</i>	203	87.67	69	376.32
<i>Average Trips per member (casual)</i>	1.30	1.2	1.7	1.8
<i>Annual Trips per member (annual)</i>	15.6	36.3-	15.5	47.7
<i>Average Trips per Day</i>	93.90	87.6	47	899.89
<i>Average Trips per Bike per Day</i>	0.75	0.44	0.2	1.6
Membership Fees				
<i>Annual Membership</i>	\$65	\$65	\$75	\$80
<i>30 Day Membership</i>	Not Available	Not Available	Not Available	\$30
<i>Weekly Membership</i>	\$20	Not Available	Not Available	\$20
<i>3 Day Membership</i>	Not Available	Not Available	Not Available	Not Available
<i>Daily Casual</i>	\$7	\$8	\$6	\$8
<i>First Half-Hour</i>	Not Available	\$0	\$5	\$0
<i>Second Half-Hour</i>	Not Available	\$4	\$10	\$1
<i>Third Half-Hour</i>	\$4.50	\$4	\$15	\$4
Reported Bikeshare Thefts	0	0	0	0
Reported Bikeshare Crash	0	0	0	0
Operating Practices	Seasonal	Year-Round	Year-Round	Seasonal
	5 am - Midnight	7 am – 10 pm	24 hrs. a day	5 am – Midnight
Days Operating	270	365	365	270
Average Summer Temp	70 ^o F	84 ^o F	80 ^o F	85 ^o F
Average Winter Temp	35 ^o F	31.5 ^o F	41 ^o F	17 ^o F
Average Monthly Precipitation Summer	1.94 inches	3.88 inches	4.91 inches	1.91 inches
Average Monthly Precipitation Winter	0.85 inches	3.26 inches	4.9 inches	0.73 inches
Equipment ownership	Non Profit owned	Non Profit owned	Jurisdiction owned	Non Profit owned
Business Model	Non Profit Managed	Non Profit Managed	Municipally Owned/ Private Operator	Non Profit Managed

Table 4 - Existing Programs in Comparable Cities

+ Most recent data available. (Reported 2012 or 2013)

* Service area refers to the area of the city in which bikeshare stations are located

** Number of stations per square mile within the service area

*** Refers to the area of the city where the highest density and majority of bikeshare stations are located

Program Goals

An important component of determining the feasibility of a bikeshare program is to understand the program's role in the community, decide what benefits are considered most valuable, and determine what will be considered a successful system. To this end, the consultants met with RPCGB staff and key regional stakeholders to understand the transportation needs of Birmingham and to develop a set of goals and objectives for the bikeshare program. The following list provides a complete description of the proposed goals for the bikeshare program resulting from these conversations.

Goal 1 - Livability & Economic Competitiveness

Develop an innovative transportation system that improves Birmingham's livability and economic competitiveness.

- *Objective 1* - Ensure that bikeshare is an affordable transportation alternative that remains competitive and complementary to other modes.
- *Objective 2* - Optimize the number of destinations that can be served by a bikeshare system with a focus on connecting neighborhoods and destinations.
- *Objective 3* - Attract and retain talent for the City's employers and raise the attractiveness of Birmingham for business investment and tourism.

Goal 2 - Social & Geographic Equity

Provide a system that is accessible to a broad cross-section of Birmingham's population.

- *Objective 1* - Provide a system that engages and serves users in minority and low-income communities and can help improve their access to jobs, recreation, and healthy nutrition.

- *Objective 2* - Implement a bikeshare program that serves as a complement to the existing transit network in Birmingham.
- *Objective 3* - Focus station planning and growth on expanding the geographic coverage of the system to include various neighborhoods and communities around the City.
- *Objective 4* - Utilize existing partnerships to leverage programmatic outreach and marketing to minority and low-income communities.

Goal 3 - Health & Safety

Provide residents and visitors with a safe mode of transportation that promotes active and healthy living.

- *Objective 1* - Foster an active lifestyle by increasing the share of bicycling and walking in the community.
- *Objective 2* - Promote a culture of safety among bikeshare system users by educating the general public about the use of helmets and the "rules of the road."
- *Objective 3* - Support other public health initiatives such as improved access to fresh foods and access to green space.
- *Objective 4* - Reduce the environmental impact of transportation consistent with the framework for Sustainability and Green Spaces delineated in the Comprehensive Master Plan.

Goal 4 - Finances & Transparency

Create a system that is financially sustainable and accountable to the public.

- *Objective 1* - Plan for and ensure sufficient capital funding for system growth and ongoing equipment replacement.
- *Objective 2* - Cover all operating expenses with limited assistance from the City by utilizing a wide range of private, state and federal funding sources.

These goals will be used to shape the direction of the program and guide the completion of the program's implementation plan.

Community Analysis



Figure 10 - Downtown Birmingham

Understanding the conditions and context into which a bikeshare program would be introduced is an important component of assessing the feasibility of a bikeshare program. This section evaluates the physical, demographic, and transportation environments, and identifies opportunities and challenges for a bikeshare program in Birmingham. These are summarized at the end of the chapter.

Geography, Climate and Land Use

Birmingham is the largest city in Alabama with a rich industrial history. The city is characterized by a flat downtown with wide streets organized in a grid-like pattern. Such a downtown is conducive to cycling, as the wide, easy-to-navigate streets lend a feeling of safety, even without significant bicycle infrastructure. However, parts of the city have a more challenging topography that includes large hills, as the city sits in Jones Valley between mountain ridges. As an industry and railroad town, Birmingham is bisected by large railroad corridors, both active and abandoned, and highways which have affected connectivity between some neighborhoods.

Birmingham has a humid subtropical climate characterized by hot summers and mild winters, with temperatures ranging from 30°F to 100°F throughout the year. Birmingham is located in the heart of Dixie Alley, an area in Central Alabama that experiences frequent tornadoes. Further, in the late summer and fall, the City experiences occasional tropical storms and hurricanes due to its proximity to the Central Gulf Coast.

Challenges:

- Areas of the city experience difficult topography characterized by significant hills.
- Hot summers.
- Neighborhood connectivity is impacted in some areas by railroads and highways.

Opportunities:

- Flat topography in Downtown.
- Relatively well distributed grid-like street pattern.
- Wide streets conducive to cycling and potential future bicycle infrastructure.

Conclusions/Recommendations:

The challenges outlined are similar to those exhibited in peer cities, and are not viewed as impediments to introducing bikeshare to Birmingham.

Demographics and Employment



Figure 11 – Downtown Birmingham as seen from Regions Field

Bikeshare demand is influenced by a number of factors with the density of population and employment, and the mix of land uses being important factors. The City has numerous neighborhoods where the mix of population and employment is ideally suited for short bikeshare trips. Downtown, Civic Center, Loft, Five Points South and Parkside districts are neighborhoods with considerable density and a mix of housing and employment.

Population Density

Situated in the middle of Alabama, Birmingham is the county seat of Jefferson County and the largest city in the state. The City is home to approximately 213,000 people according to the 2012 U.S. Census.³⁴ Birmingham's city-wide population density is approximately 1,401 people per square mile, which is comparable to other small to medium sized southeastern cities with existing bikeshare programs such as Chattanooga, TN. Table 5 shows a comparison of the area, population, and density of peer cities.

While the overall population of Birmingham decreased by around 13 percent in the period between 2000 and 2010, areas located in and around Downtown have seen their population increase by 20-to-50 percent during that same period. In particular, those areas close to the University of Alabama at Birmingham (UAB) have densities in the order of 3,000 people per square mile (higher than double the city average of 1,395 people per square mile).³⁵

	Area (mi)	Population	Density (Sq. Mi.)
Birmingham	151.9	212,835	1,401
Boulder	25.7	101,808	3,961
Charlotte	297.7	775,202	2,604
Chattanooga	142.2	171,279	1,204
Denver	154.9	634,265	4,094

Table 5 – Comparison of Size, Population, and Density of Peer Cities.

³⁴ US Census Bureau. 2012 Population Estimates. Accessed from http://factfinder2.census.gov/faces/nav/jsf/pages/community_facts.xhtml#none on October 19, 2013

³⁵ US Census Bureau. 2010 American Community Survey. File S2301.

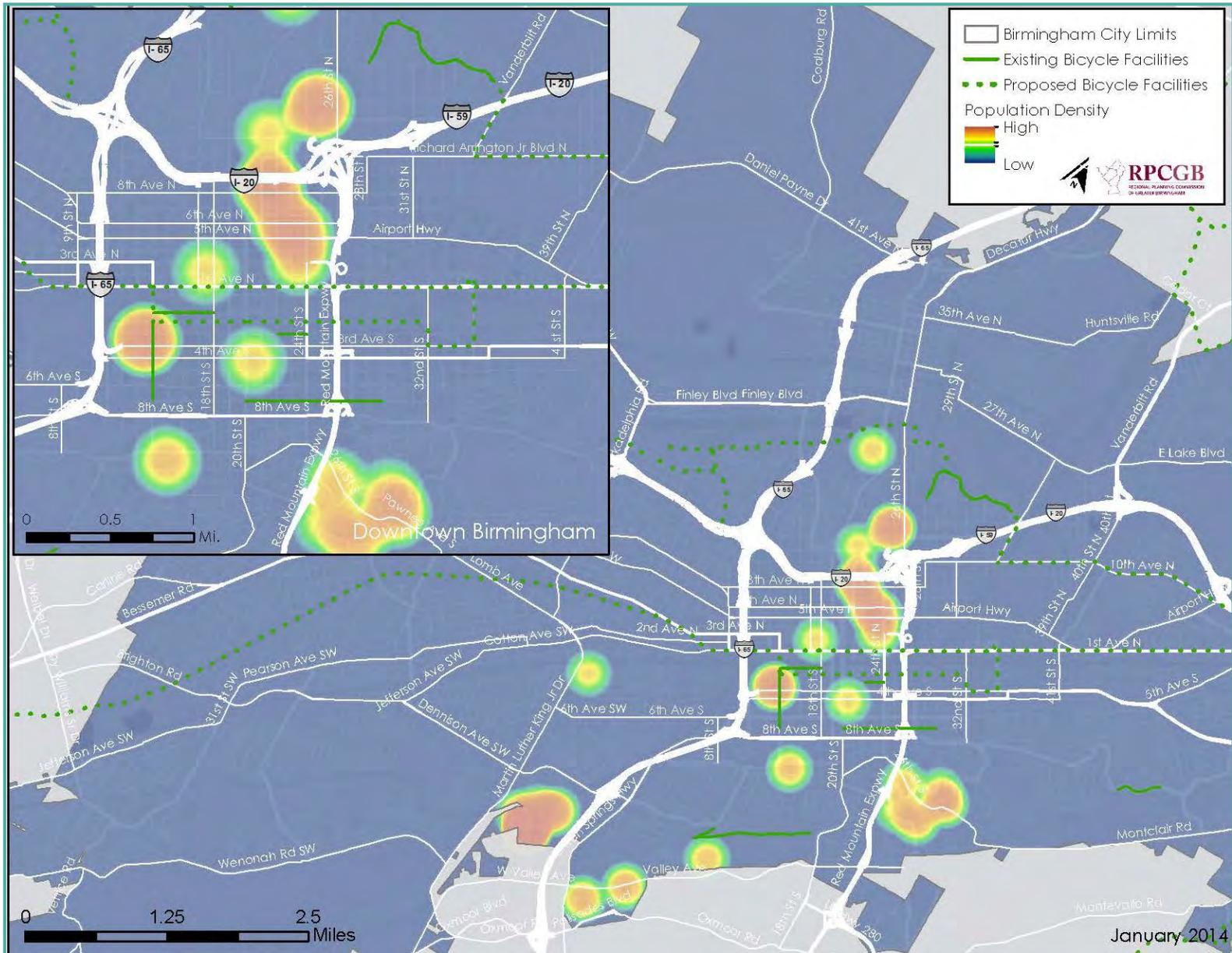


Figure 12 – Birmingham Population Density

There are, however, large areas throughout the city where the population density is low and may not be conducive to implementing a bikeshare program. This can be seen in Figure 12, where the blue areas represent low density neighborhoods.

Neighborhood revitalization and sustainability have been at the forefront of Birmingham's downtown population increase and economic growth. The Birmingham-Jefferson Convention Complex (BJCC) was recently expanded and has brought revitalization efforts to the area just north of downtown and I-20.

With over 1,000 hotel rooms split between two of the area's largest hotels (Sheraton Birmingham and Westin Birmingham), and an average occupancy rate of 49 percent, the BJCC represents one of the largest activity centers and major employers in the area. The combined number of full time employees for the BJCC/Westin/Sheraton is 550. During special event days, employees can increase to 1,000 depending on the number of events. Furthermore, the area hosted a total of 862 events ranging from concerts to fashion shows, indicating increased activity.³⁶ The Parkside District has also undergone recent redevelopment.

More than 4,000 residents live in this area in primarily loft-type residences, which have been made even more attractive by their proximity to Railroad Park, a 19-acre "green space" located within an easy walk of the Central Business District (CBD) and UAB. The redevelopment of this area was complemented by the construction of Regions Field, the new minor league baseball stadium and home to the Birmingham Barons. The ballpark opened in April 2013 and has generated significant interest and foot traffic. Numerous restaurants and breweries have also opened.

³⁶ Susette N. Hunter, Director of Sales and Marketing, Birmingham-Jefferson Convention Complex.

The federal government has played a part in the redevelopment of the downtown area with federal offices developed on the northern edge of Birmingham's CBD. A complex consisting of regional offices for the U.S. Bureau of Alcohol, Tobacco, Firearms and Explosives, the Federal Bureau of Investigation, and the Social Security Administration have been built in the last couple of years and a Treasury building is being constructed.

Neighborhood revitalization and an increasingly larger and denser population throughout the CBD create a significant opportunity for bikeshare. In many cities, bikeshare is part of the strategy to bring residents back downtown and create another transportation option in multi-use neighborhoods.



Figure 13 - Regions Field is a major employment hub major destination that could be a popular spot for a bikeshare station

Demographics

The City's overall population tends to be young with a median age of 36 years, according to the latest census data (see Figure 14 for complete age distribution). It is split almost equally by gender, with 46 percent male and 53 percent female. The City's population is strongly influenced by UAB with an enrollment of over 18,000 students and 20,000 faculty and staff.

With regard to age, bikeshare users are generally younger than the average population. As shown in Figure 14, 30 percent of all City residents are between the ages of 20 and 40.

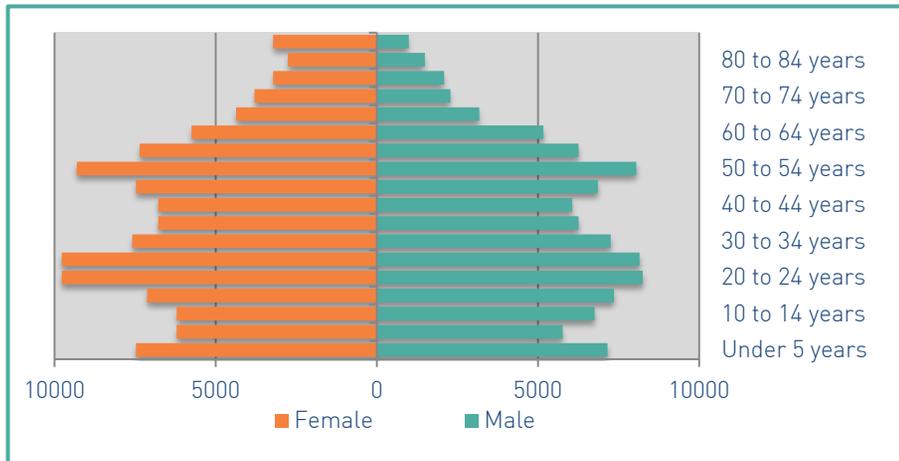


Figure 14 - Demographic Distribution

The median household income is approximately \$32,000, which is comparable to other Southeastern cities with existing bikeshare programs, e.g., Chattanooga (\$37,000) and Spartanburg (\$33,000).

The age, gender and income composition of the City pose no barriers for bikeshare in Birmingham. Statistics have shown that younger male populations are more likely to be users of bikeshare.

For example, 63 percent of members of Capital Bikeshare in Washington D.C. were under the age of 35 (compared to only 17 percent of the regional employee population being within this age range).³⁷ Of these, 57 percent self-reported as being male compared to 43 percent women. Therefore, a younger population in the downtown area is an advantage for bikeshare in Birmingham.

The demographic composition of the City of Birmingham is similar to other cities in the Southeast. The City is over 73 percent African American, 21 percent Caucasian, 2.8 percent Hispanic/Latino, and around 1 percent Native American and Asian combined (see Figure 15).

Social equity has been identified as an important goal of the program (Goal #2), geographic distribution of various demographic and income levels were analyzed for the study. A spatial analysis of two variables was undertaken: 1) percentage of minority population by census block and 2) percentage of low income population (under \$15,000 per year). The highest occurrences are reflected in Figure 16 as a combined "composite equity map."

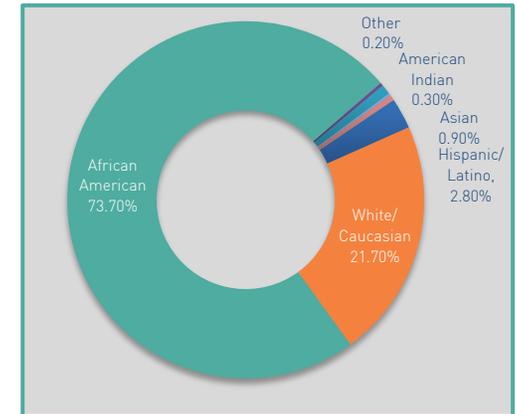


Figure 15 - Birmingham's Demographic Composition

This map shows that there are significant minority and low-income populations on the north side of downtown. This distribution

³⁷ LDA Consulting (2013). 2013 Capital Bikeshare Member Survey Report. Accessed online at <http://capitalbikeshare.com/assets/pdf/CABI-2013SurveyReport.pdf> on January 6, 2014.

presents an opportunity for a bikeshare program that includes these neighborhoods in the core part of the system.

Transportation Mode Share

Single-occupant vehicle trips still make up the bulk of transportation in Birmingham, with approximately 84% of commuter trips. This is encouraged by an abundant supply of free or low cost parking in many areas of the City. Parking fees can be as low as 25 cents per hour.³⁸

The proportion of residents who utilize non-automobile modes of transportation to commute to work is low at approximately six percent (public transportation represents 1.81 percent; walking 1.76 percent; bicycling 0.38 percent; and telework 1.92 percent). However, existing programs such as CommuteSmart continue to expand the mode share of people utilizing vanpool/carpool services (around 10 percent).³⁹

As pointed out in the 2008 Regional Planning Commission of Greater Birmingham Transit District Parking Plan, there is an overabundance of parking in the Downtown area, which is priced very low (in some cases \$0.25 per hour). This low cost and high availability of parking encourages car use even for short-distance trips.

The prevalence of the single-occupancy vehicle as the predominant means of transportation is the major challenge in obtaining significant membership and ridership even in downtown Birmingham.

³⁸ Birmingham Jefferson County Transit Authority website. Fare Structure and Cost. Accessed from <http://www.bjcta.org/> on November 15, 2013.

³⁹ US. Census Bureau. 2012 American Community Survey 1-Year Estimates Means of Transportation To work by Age (File B08101) Workers 16 years and over more information

Employment

The amount and density of employment has a strong influence on bikeshare system success. Bikeshare can create opportunities for commuting as well as day trips such as off-site meetings, errands, lunch, and breaks.

Birmingham's diverse economy benefits from a range of businesses including finance, healthcare and institutions of higher learning. This economic well-being has translated to a comparatively low unemployment rate. According to the 2012 City of Birmingham Comprehensive Annual Financial Report, the Metro Area unemployment rate was 7.0 percent compared to the State of Alabama's unemployment rate of 8.1 percent, and overall United States' rate of 7.9 percent.

UAB is the largest employer in the city and plays a pivotal role in its economy, with over 20,000 people directly employed. The University expects to grow the number of faculty and staff to more than 30,000 by 2020.⁴⁰

The healthcare economy is strong in the City, not only with new developments at UAB's Medical Center, but also with facility expansion occurring at St. Vincent's Hospital, Princeton Baptist Medical Center, and the Birmingham VA Medical Center. Additionally, Children's Hospital opened a state-of-the art facility, recently increasing the number of employees at its Downtown site.

Birmingham's banking sector is diversifying with a number of medium-sized and smaller banks continuing to expand throughout the area.

⁴⁰ Stakeholders meetings. UAB Campus Planning. Conducted October 28, 2013.



Figure 16 - Social Equity Analysis (minority and low income populations)

Birmingham is home to Regions, the City's second largest employer with 6,000 employees. With 27,000 employees nationally it is the only Fortune 500 company based in Birmingham. BBVA Compass employs over 2,000 people (see Table 6 for more details).

Table 6 - Top Employers in Birmingham⁴¹

Employer	Estimated Employees
University of Alabama in Birmingham	21,550
Regions	6,000
Bellsouth/AT&T	7,500
St. Vincent's Health System	4,703
Baptist Health System	3,652
Southern Nuclear Operating Company	3,200
Blue Cross-Blue Shield of Alabama	3,000
BBVA Compass	2,804
Brookwood Medical Center	2,600
Southern Company Generation	2,500
American Cast Iron Pipe	2,400
US Steel Fairfield Works	2,400

The strong employment base in Birmingham's CBD provides a strong opportunity to bring an additional transportation option for employees during the day. It also provides sponsorship and corporate membership opportunities, as detailed in the stakeholder engagement section.

Challenges:

- Lower densities in various areas of the city may present a challenge for implementing bikeshare outside of the Downtown, CBD and UAB.
- There is a high dependency on single-occupancy automobile transportation, which creates a challenge for strong membership and ridership adoption of bikeshare.

Opportunities:

- The population density of Birmingham is comparable to other southeastern cities that have implemented bikeshare. In particular, the Downtown and UAB areas have a population density more than twice the city average.
- UAB represents a large student population and employment hub. These residents are likely to be early adopters of the system.
- There is significant neighborhood revitalization in Downtown Birmingham, especially within the Loft, Parkside and Five Points South districts, with an effort to bring residents Downtown.
- Low income and minority populations in the vicinity of downtown represent an opportunity to provide bikeshare for these underserved populations, addressing an important goal of the program.
- Several large employers Downtown provide membership and ridership opportunities, as well as potential sponsors.

Conclusions/Recommendations:

Although the largest challenge is overcoming the existing car culture in Birmingham, downtown revitalization provides a strong opportunity for successful uptake of bikeshare, as well as a transportation solution for low-income and minority populations in the Downtown area.

Bicycle Infrastructure

Birmingham continues to attract investment and population to its CBD. While some changes have been implemented to accommodate the new and changing population, implementation of increased bicycle infrastructure has not matched the city's transformation and redevelopment. Figure 17 shows the existing and proposed network of bicycle facilities in Downtown Birmingham, which currently includes 11 miles of separated facilities.

⁴¹ City of Birmingham 2012 Comprehensive Annual Financial Report. Accessed from <http://www.informationbirmingham.com/pdf/finance/CAFR/cafr%202012%20FINAL.pdf> on October 23, 2013.

Despite the low number of separated facilities, the Birmingham street network has some inherent strong advantages. It is generally laid out in a grid pattern, making easy connectivity between neighborhoods and streets. Local streets and collectors, as well as some arterials, tend to be wide, with at least four distinct travel lanes plus parking lanes on both sides, and a low Average Annual Daily Traffic or AADT. For example, AADT on 1st Avenue N and 19th Street N is around 11,676,⁴² which can be considered low for a five-lane roadway with parking lanes on both sides. On roadways that experienced higher AADT (24th Street at 1st Avenue South has an AADT of 9,146), the extended width of the roadway make it more conducive for bicyclists and motorists to share. Low AADT and extended width of roadways may be able to help make the bicyclist perception of a particular roadway more positive, with short bicycle trips (½ mile to 3 miles) more comfortable.

Birmingham's most significant investment for bicycling in the past couple of years has been the completion of the Red Rock Ridge and Valley Trail System Master Plan, which calls for the creation of a regional greenway system connecting communities throughout Jefferson County. The plan identifies over 200 miles of greenways and paths along six main corridors, as well as over 600 miles of connector greenways and paths (see the Local and Regional Plans and Regulations section for more information). Other additional investments include the development of Rotary Trail on the unused railroad bed that runs along 1st Avenue South between 20th and 24th Streets (providing east-west connectivity for pedestrians and bicyclists), as well as sharrows and bike lanes

⁴² Birmingham Metropolitan Planning Organization. Traffic Count Database System (TCDS). 2010-2011 data. Accessed from <http://bhammpo.ms2soft.com/tcnds/tsearch.asp?loc=Bhammpo&mod=> on November 19, 2013.

around Railroad Park and throughout the Lakeview District (see Figure 17 for more details)

While there are still a low number of separated bicycle facilities (11 miles of existing bicycle facilities compared to 8,546 miles of total vehicle roadways), the City has a strong and growing bicycling culture. The city's bicycle mode share, while still low (less than one percent as of 2012), has steadily been increasing along with walking (1.76 percent) and carpooling (10 percent). Additionally, a growing number of bicycle shops, grassroots events, and increased participation in Bike-to-Work Day have helped increase its bicycle mode share. Additionally, the City is home to increasing advocacy and education efforts by the Alabama Bicycle Coalition (ABC).

Lack of a strong existing network of bicycle friendly facilities is not necessarily a deterrent to bikeshare. Almost every city that has implemented a system has built out their bicycle infrastructure parallel to building a bikeshare system. Refer back to the Boston example in Figure 8. However, providing a core network of low-stress bikeways that connect various neighborhoods helps the success of the system, as safety is a large factor in people's willingness to try bikeshare. There may be opportunities to expand the city's bicycle network along some of the wider, lower volume streets in Downtown.

The implementation of a bikeshare system in Birmingham should support investments in safe and bicycle friendly facilities that provide convenient connections within and between neighborhoods, including overcoming barriers such as freeways (I-20, I-65 and the Red Mountain Expressway) and railway corridors that separate communities.



Figure 17 - Existing and Proposed Bicycle Facilities

While east-west connections will be complemented by planned on-street bikeways (see Red Rock Ridge and Valley Trail System Master Plan), Birmingham officials should continue to promote the implementation of low stress connections between the north side and south side of Downtown. Bikeshare systems have been shown to give additional impetus to increasing investment in bicycle infrastructure.⁴³

Challenges

- The existing bicycle network is limited (see Figure 17).
- There are difficult north-south connections between activity centers (CBD and Southside) with no dedicated bicycle facilities. Several barriers including freeways and rail corridors must be overcome to connect between neighborhoods.

Opportunities:

- Wide street width and an easy-to-navigate grid within Downtown Birmingham provide a current opportunity for safe cycling and future opportunity for expansion of bicycle friendly infrastructure.
- Birmingham has an emerging bicycling culture – with increasing participation in bicycling programs, increased advocacy, and a growing number of bicycle retailers.
- Birmingham can develop its bicycle infrastructure in parallel with a bikeshare program, as many communities have done.

Conclusions/Recommendations:

- It is recommended that the RPCGB and the City of Birmingham consider the short, medium and long-term development of bicycle infrastructure in the Downtown area and utilize bikeshare as an impetus.

⁴³ Bike Sharing in the United States: State of the Practice and Guide to Implementation. Federal Highway Administration. United States Department of Transportation. September 2012.

Tourism

Tourists can provide an important revenue stream for bikeshare systems, with approximately two-thirds (2/3) of user-generated revenues in most systems. These users are more inclined to pay a higher access fee and more often go beyond the free ride period and incur trip fees.

According to the Greater Birmingham Convention and Visitors Bureau, tourism continues to play a major role in the City's economy. The most recent tourism data estimated that the total contribution of overnight visitors was four million people spending more than \$1.5 billion in 2012. Furthermore, the Jefferson County tourism industry generated over 36,000 jobs in 2012.⁴⁴

Local attractions include the Alabama Sports Hall of Fame, Birmingham Art Museum, Regions Field, Birmingham Civil Rights Institute and District, Vulcan Park, Railroad Park, and Sloss Furnaces. There is more than 220,000 square feet of exhibition space and 14,000 guest rooms in the City. In addition, Birmingham hosts a large schedule of meetings and conventions.⁴⁵ According to the

⁴⁴ Greater Birmingham Convention and Visitors Bureau. Press Release May 2013.

⁴⁵ Meeting Planners Guide to Birmingham. Greater Birmingham Convention and Visitors Bureau. Accessed from <http://birminghamal.org/MeetingPlannersGuide/data/document.pdf> on November 18, 2013.

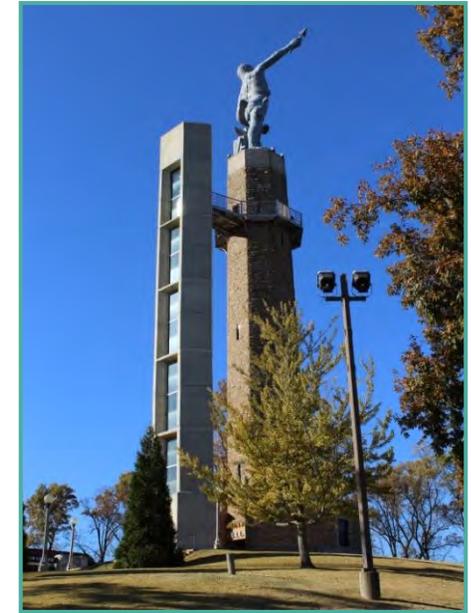


Figure 18 – The Vulcan is one of Birmingham's most visited tourist attractions

Birmingham-Jefferson Convention Complex, there were 966 events and over one million people who visited the Convention Complex in 2012.⁴⁶

Deploying bikeshare stations in areas of the City with high numbers of tourists is recommended as it may provide significant revenues that can help to support the system from a financial standpoint, especially in lower demand areas.

Marketing to the tourist population can be challenging because each tourist must be educated anew when they arrive in Birmingham. Further, marketing to tourists can be expensive, because digital media is not as effective for transient tourist populations. Such marketing requires more manual outreach to hotels and concierges, as well as print materials and potentially even Street Teams. Local partnerships can assist with this outreach.

Challenges:

- Marketing to the tourist population can be more difficult and expensive than standard digital marketing to the local population.

Opportunities

- Birmingham has a significant tourist population, as well as a thriving convention complex, with over one million convention attendees on an annual basis, potentially providing valuable revenue to a bikeshare system.

Conclusions/Recommendations:

The RPCGB should promote partnerships between the BJCC, Convention and Visitors Bureau, Railroad Park, REV Birmingham and the Birmingham Business Alliance, to capitalize on the

⁴⁶ Birmingham-Jefferson Convention Complex. Accessed from http://www.bjcc.org/our_impact.php on November 15, 2013.

opportunity for bikeshare to connect local attractions and solidify Birmingham as an exciting destination for active and historical tourism.

Public Transit

The Birmingham-Jefferson County Transit Authority (BJCTA) is the public transportation operator in the City. It currently operates a fleet of 68 buses on 35 different routes (see Figure 19 for more details on routes).

Public transit in Birmingham is mainly composed of bus services. MAX service operates throughout the region at relatively infrequent times (anywhere from 30 minutes to 1 ½ hours) from the hours of 5 a.m. through 10 p.m., Monday through Friday, and from 6 a.m. to 10 p.m. on Saturday on many routes with no Sunday service. This makes it difficult for community members without cars to connect to different areas of the City. Furthermore, existing bus routes tend to focus on connecting neighborhoods to Downtown (see Figure 19 for details) rather than directly connecting neighborhoods to other neighborhoods. This makes the bus routing feel circuitous and long, and may in turn deter some people from utilizing the service.

The BJCTA also operates the DART circulator throughout Downtown, which connects activity centers including the BJCC, City Hall, UAB, Birmingham Water Works, Railroad Park, Regions Field, and Five Points South. This service has a frequency of every 20 minutes Monday through Saturday, with no service on Sundays.

To increase the availability and use of transit in the Birmingham region, the RPCGB conducted the In-Town Transit Partnership (ITP) Project. The study focused on evaluating various options to provide quality transit services in Downtown Birmingham and UAB.

As part of the project the RPCGB reviewed various alternatives and vehicle types. RPCGB tentatively selected a bus rapid transit (BRT) option connecting the BJCC, the City's central business district, and Birmingham's Southside. The service could help increase connectivity between neighborhoods as well as help curb the use of single occupancy vehicles.

Another component of the proposed network of transit services is Birmingham's multimodal transit hub to be located at the corner of Morris Avenue and 18th Street North. This new station will include connections to local bus services, rail (Amtrak), and regional bus services (Greyhound). Construction of the hub is expected to begin in 2014 and continue for about two years.

An additional element of Birmingham's transit system is the RPCGB's CommuteSmart program, which offers ride matching, carpool, and vanpool services for individuals. The program also works with private companies to develop and implement commuter programs that help curb the use of single occupancy vehicles. CommuteSmart operates in the counties of Jefferson and Shelby with a total of 36 vans on the road



A potential bikeshare system could be promoted through the existing network of 21,889 commuters and 10,750 employers registered to the program.

As the second objective to the proposed Livability and Economic Competitiveness goal focuses on optimizing the number of interconnected neighborhoods and destinations served, implementation of a bikeshare program will provide a perfect

complement to the existing public transit system. It is strongly recommended that station locations be considered both at and around transit hubs to create first mile/last mile solutions that can increase neighborhood connectivity. Furthermore, a bikeshare system can increase connectivity between downtown neighborhoods while "opening up" new transit markets that are not yet served by existing transit. Finally, because the RPCGB runs the CommuteSmart program, there is an increased opportunity to provide cross-promotion between CommuteSmart and bikeshare and increase the number of people utilizing both programs.

Challenges:

- None observed

Opportunities:

- As existing transit is infrequent, does not offer 24-hour service, only serves only a limited number of routes that make inter-neighborhood connectivity difficult and time consuming, as all routes begin and end Downtown, a bikeshare program could help bridge that service gap.
- Stations should be located close to (visible, where possible) major transit hubs such as the proposed multimodal facility and ITP stops.
- The potential location of bikeshare stations near high ridership bus stops should also be considered, as they may act as feeders, connecting people from neighboring locations to transit.
- The potential implementation of a bikeshare program may help increase connectivity for residents of neighborhoods where transit service is limited.

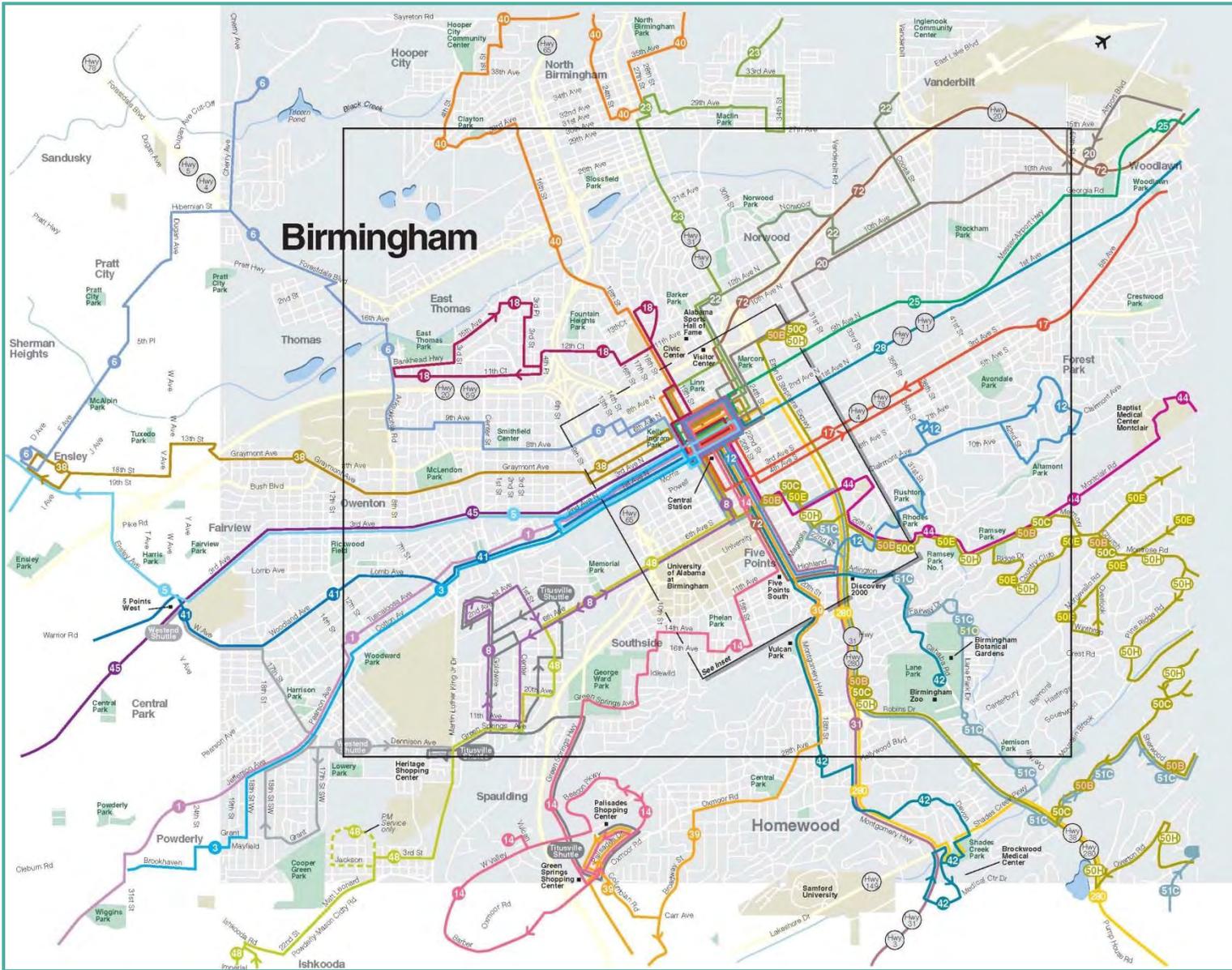


Figure 19 - Existing Transit Network (BJCTA)

Conclusions/Recommendations:

Bikeshare can coordinate with existing and planned public transportation services to connect neighborhoods and overcome some of the existing challenges with limited transit services in some areas and at some times of day. Further, bikeshare station locations should be coordinated with existing and planned transit projects to maximize the use of both. The RPCGB should coordinate with the various agencies to carve out space for a bikeshare station at the new transit hub. Finally, the RPCGB should work to cross-promote CommuteSmart and bikeshare, and help increase ridership and possible revenues.

Local and Regional Plans and Policies

There are a number of plans, policies and statutory regulations that may impact the installation and operation of a bikeshare program in Birmingham. Plans and policies can be important measures of program compatibility with local initiatives, such as goals for encouraging healthy and active transportation, reduced greenhouse gas emissions, or providing low cost transportation options among transit-dependent populations.

The following is a review of existing and future bicycle infrastructure related plans and policies that may influence the implementation of a bikeshare program in Birmingham.

2009 Alabama Bicycle and Pedestrian Master Plan

The statewide plan serves as a guide for decision making and prioritization of bicycle and pedestrian infrastructure, identifies potential statewide linkages for connecting communities, and serves as a resource for planning and designing future infrastructure.⁴⁷ While it does not specifically call for the

⁴⁷ Alabama Bicycle and Pedestrian Plan. October 2009. Page 71.

implementation of bikeshare programs, the Plan does identify bicycle facilities that may have an effect on the number of people bicycling throughout Birmingham. With regard to the Birmingham area, the plan identifies three state bicycle routes (see Figure 20):

- State Bicycle Route EW2 running through the northern tip of Blount County along US 278.
- State Bicycle Route EW3 running through the southern tip of the division along AL 25. This route connects to the Birmingham planned bikeway and greenway system near Columbiana.
- The southern section of State Bicycle Route NS2 is in southern Shelby County on US 31 where it connects to State Bicycle Route EW3 at AL 25. The northern section of NS2 connects with the planned bikeway and greenway system at Avenue C in Birmingham.

The plan also identifies federal and local sources of funding which may be pertinent to the implementation of a bikeshare program in Birmingham including:

- Community Development Block Grants (CDBG)
- Surface Transportation Program (STP)
- National Highway System Funds (NHSF)
- Capital Improvements Program

2014 Regional Planning Commission of Greater Birmingham Active Transportation Plan (DRAFT)

The draft RPCGB Active Transportation Plan introduces general concepts of active transportation, explores the current policy environment, reviews existing programmatic and educational initiatives, and helps inform the implementation and funding processes for pedestrian and bicycle facilities.

While the Plan does not specifically state goals for implementing a bikeshare program, it does provide a set of goals that focus on expanding bicycle and pedestrian infrastructure throughout the region. Furthermore, the Plan provides a timeline for the planning and implementation of various bicycle and pedestrian projects, provides an overview of existing roadway conditions, and bicycle/pedestrian facilities.

The plan also provides guidance of planning, design and policy implementation (following national and state standards); prioritizes implementation of various planned bicycle and pedestrian projects; and provides a toolkit for planning, designing, building and improving facilities for pedestrians and bicyclists alike.

2035 Regional Transportation Plan (RPCGB)

The Regional Planning Commission of Greater Birmingham's 2035 Regional Transportation Plan provides the long-range vision for the transportation network in the Greater Birmingham area which includes the counties of Jefferson and Shelby. There are three distinct goals guiding all principles for this plan: i) Sustainability; ii) Integration and Connectivity; and iii) Community Driven.

The primary goal of the MPO's Active Transportation Program is to provide a comprehensive strategy to develop and maintain a safe and efficient regional network of walkways and bikeways that reduce automobile dependency, air and noise pollution, and traffic congestion.

While much of the allocated funding for transportation has been designated for systems management and operations (43 percent), there has been a commitment to increase investment levels for active transportation (13 percent) and public transportation (18 percent) projects. Much of the funding allocation for alternative

modes of transportation has focused on expanding the existing bus transit system. Other efforts have been focused on the proposed ITP system for downtown, increasing the bicycling accommodations throughout the region, and promoting safer and more walkable communities.

The advent of bikeshare in Birmingham and its potential benefits may help reduce automobile dependency and traffic congestion (all goals of the Plan) while helping increase connectivity between neighborhoods and offering an additional transportation alternative. Furthermore, a potential bikeshare program may be funded under the provisions of the plan, therefore, potentially securing additional funding for its implementation.

2007 Birmingham-Jefferson County Transit Authority (BJCTA) Comprehensive Transit Development Plan

This plan offers a guide to create a better transit system for Greater Birmingham. Through it, the BJCTA proposes a decentralized multi-destination transit system serving multipurpose travel. More specifically, the plan calls for developing transit "super stops" throughout the region including one in North Birmingham, which will serve as places to facilitate transfers between routes without requiring travel downtown or to a park and ride facility, as it currently does (see Figure 19 for more details).

While not explicitly addressing the topic of bikeshare, the Plan calls for the inclusion of bicycle racks at each "super stop", for people connecting to the station via bicycle. It is advisable that the RPCGB coordinate with the BJCTA to locate bikeshare stations in close proximity to high ridership transit stops and in par with the proposed bicycle racks to increase the possibility that bikeshare will be used as a complement service to transit.

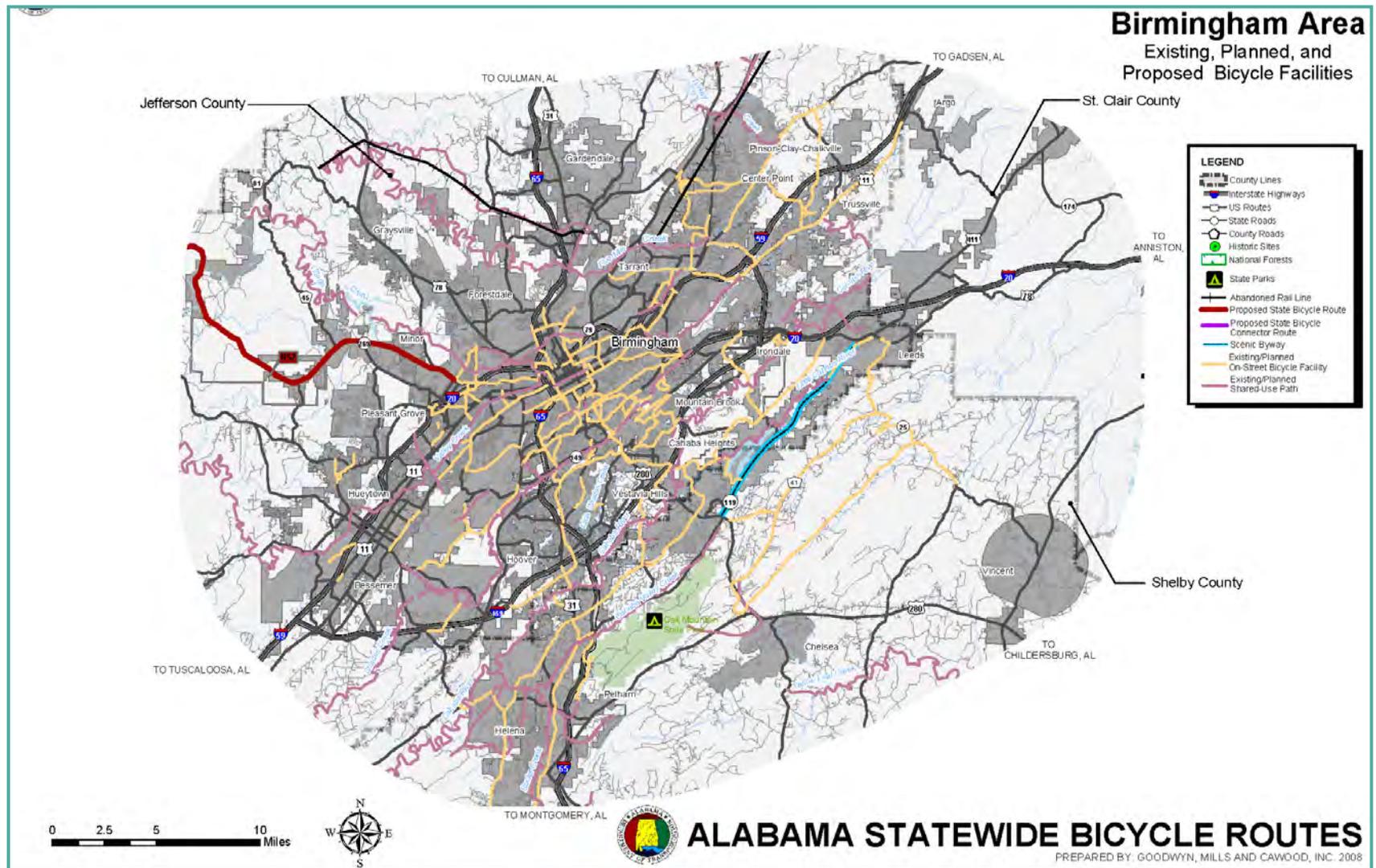


Figure 20 - Existing, planned, and proposed bicycle facilities
(2009 Alabama Bicycle and Pedestrian Master Plan)

The Red Rock Ridge and Valley Trail System Master Plan

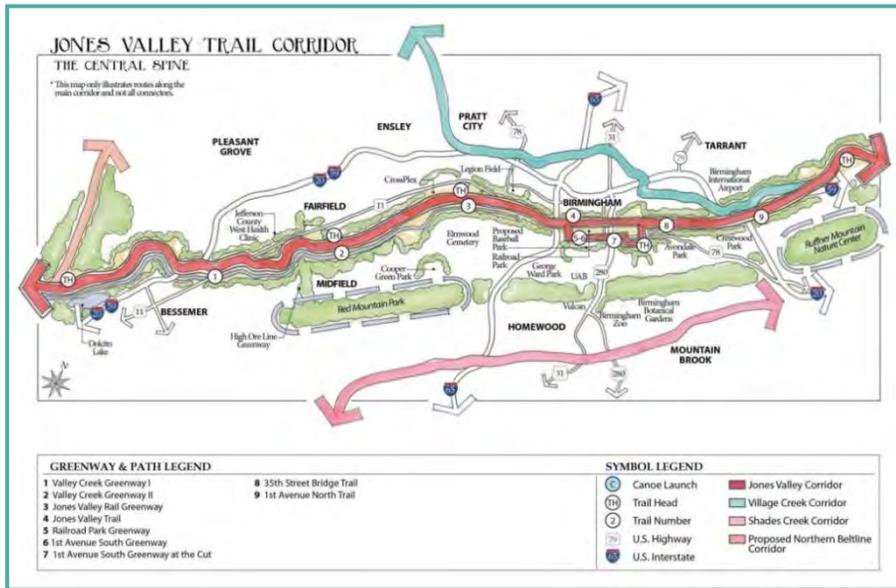


Figure 21 - Jones Valley Trail Corridor (Red Rock Ridge and Valley Trail System)

The plan provides a tool to enable the development of a regional greenway system connecting communities throughout Jefferson County. It identifies over 200 miles of greenways and paths along six main corridors as well as over 600 miles of connector greenways and paths beyond the main corridors.

The Master Plan recommends a spine network of on- and off-road facilities throughout the Jones Valley Corridor, which includes the municipalities of Bessemer, Birmingham, Brighton, Fairfield, and Midfield. This corridor is considered the spine of the regional network and it provides a direct connection from these cities to Downtown Birmingham as well as other connecting trail corridors.

Once constructed, the Jones Valley Trail will provide the most connectivity between activity centers in the city, which may support implementation of a bikeshare program in Birmingham. The Plan recommends prioritizing certain sections of the Jones Valley Trail Corridor for immediate implementation (1-to-5 years) including the Valley Creek Greenway (I and II), the Jones Valley Rail Greenway, the 1st Avenue South Greenway, High Ore Line Greenway, and the Clairmont Trail extension.

Birmingham City Center Master Plan Update

The plan provides recommendations for the design, zoning, and planning of the central part of the City of Birmingham, so as to redevelop the downtown area into a more walkable, bicycle-friendly, and livable place – all goals that may be influenced by the implementation of a bikeshare program. The plan also provides five planning principles to guide development and redevelopment around the City Center.

These principles include enhancing connections and gateways, developing green streets, and reorganizing the highway and street network. Within its transportation section, the Plan calls for improving transit, reconfiguring I-20/59 to better serve the City Center, and updating the character of City Center streets by incorporating small scale traffic improvements, making City Center streets more accessible, and amenable to pedestrians and bicyclists alike.



Figure 22 - Street connectivity (City Center Master Plan Update)

In terms of street and sidewalk design, the plan calls for on-street parking to calm traffic and to enhance the pedestrian experience. There may be an opportunity to use on-street bikeshare stations in a similar way.

The plan also makes recommendations regarding the right-of-way and its projections which must be reviewed and approved by the Design Review Committee. This plan allows for the use of awnings for merchants and restaurants on commercial streets and for entrances to apartment buildings. These regulations may have an effect on the way bikeshare stations are installed in Downtown Birmingham. Bikeshare stations may be allowable under these provisions. Further review of the current regulations is advised.

Birmingham Planning Commission – Complete Streets Resolution

The Birmingham Planning Commission endorsed a Complete Streets policy. The document delineates the following:

- Birmingham will plan, design, construct and maintain all City streets for people of all ages, abilities, and modes.
- All designs, plans, and construction will be consistent with local community needs.
- All retrofit and construction of new facilities in the City will follow Complete Streets principles.
- City will follow the latest adopted design standards delineated in the AASHTO, ITE, NACTO and PROWAG guidelines.

Complete Streets resolutions tend to encourage places where all modes of transportation interact and complement each other. Although not specifically stated in the resolution, the implementation of a bikeshare system in Birmingham will help create more welcoming, friendlier and livable streets.

City of Birmingham Comprehensive Master Plan Update

Chapter 12 of the Comprehensive Master Plan Update is dedicated to transportation and mobility in the City. In it the City sets up the vision for making Birmingham a more walkable, bicycle-friendly and livable city. In particular, the plan sets forth five overarching goals:

- Help Birmingham's transportation system build the City's 21st century economy and a livable urban center for the region.
- Make bicycling and walking in the City comfortable, safe, and convenient.
- Make transit in Birmingham fast, reliable, well-connected, and inviting use by residents and visitors.
- Make streets and sidewalks accessible to all and maintained in good repair.
- Utilize Birmingham's state-of-the-art inter-city passenger travel and freight transportation systems.

These goals are a perfect tie back to bikeshare, as bikeshare directly impacts four of these overarching goals.

The plan identifies some challenges to achieving these goals, including the disproportionate amount of transportation dollars spent on roadway projects outside Birmingham (82 percent); major barriers to bicycle and pedestrian connectivity in the form

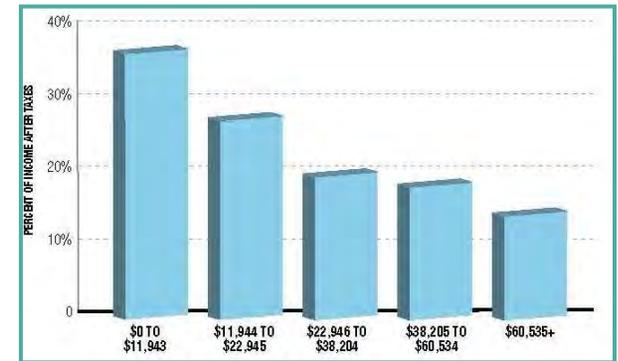


Figure 23 - Household Transportation Spending by Income Group (Birmingham Master Plan Update)

of I-65, I-20 and US 280; the existing over-supply of parking in downtown that encourages private automobile use; and the limited bicycle infrastructure available throughout the City.

The plan delineates the following directives with regards to making bicycling and walking viable of transportation alternatives:

- Increasing street connectivity following Complete Streets principles.
- Utilizing innovative approaches to solving transportation capacity issues.
- Increasing active transportation by increasing the number of off road trails (utilizing rail-to-trail conversion opportunities).
- Supporting investments and programs that provide safe, functional, and attractive pedestrian environments, and walkable districts along transit arterials.
- Supporting the development of a complete network of on-street and off-street bicycle routes and trails.
- Supporting the implementation of the Red Rock Ridge and Valley Trail System, including the on-street pedestrian segments.
- Requiring bicycle parking in commercial and mixed use areas of public and private infrastructure projects.
- Integrating the National Association of City Transportation Officials (NACTO) *Urban Bikeway Design Guide* into roadway design guidance.

Bikeshare may help the City address all aforementioned goals by helping increase transportation options. Bikeshare also represents an opportunity for the City to help increase connectivity between neighborhoods and explore more opportunities for making streets more livable and vibrant.

Policies and City Ordinances

As bikeshare programs are relatively new, the form of equipment, installation, and operations are not typically codified into existing

zoning, permitting, and other ordinances. Birmingham must consider what policies need to be updated to incorporate bikeshare, understand the process for permitting and installation, and to review whether advertising and sponsorship will be allowed at the stations and on the bicycles. A review of existing policies and how they may need to be adapted is included below.

The City of Birmingham Zoning Ordinance

There are several regulations within the City of Birmingham Zoning Ordinance that could have an impact on the potential implementation of a bikeshare system:

Right of Way Encroachment

According to the ordinance, “right-of-way use agreements are needed when a privately owned object encroaches into the public right-of-way.” If right-of-way will be utilized, under the current policy the operating agency will need to go through an agreement permitting process that includes: city engineers reviewing all potential locations, the Planning, Engineering, and Permits Department drafting an agreement and subsequent resolution, the law department approving the agreement, the Public Improvement and Beautification Committee approving the agreement, City Council approving the resolution, and finally obtaining approval from the Mayor in the form of a signed resolution. It is important to note that the regulation is unclear as to what agreement will be needed if the objects are publicly owned. This distinction may affect who owns the assets as opposed to who operates the program. Additional discussions with the City's Engineering Department to understand if there is a way to expedite or change the permitting process are recommended.

Signage

The code specifies that all signs and installations shall require a permit unless exempted or specifically prohibited under the code.⁴⁸ To this extent all off-premise signs (not attached to a building or business) cannot exceed a maximum of 800 square feet or 20 feet high or 50 feet long, and must be at least 100 feet apart when on the same side of the street, or 500 feet apart when on different sides of the street.⁴⁹ Furthermore, no off-premise sign structures shall be located on or project over any public property or right-of-way except as provided by the City Council.⁵⁰ Although bikeshare station map panels and signs will not exceed the maximum size requirements, exceptions may need to be made for their location on public property and in public right-of-way.

For signs located on-premise, each business establishment is limited to 672 square feet of signage and no signs are to block the effective visibility of adjacent signs or impede a motorist's visibility. Furthermore, the sign is not to project onto public right-of-way by more than five feet.⁵¹ Furthermore, product advertising signs shall not exceed 12 square feet in area for any one premise which area shall be included in the total permitted sign area for that premise.⁵² Finally, only one portable sign shall be permitted for each business establishment. These regulations will need to be reviewed with the chosen operator if private property is to be used for stations.

⁴⁸ The City of Birmingham Zoning Ordinance. Subsection 3, PG. 6-12. Obtained from <http://www.birminghamal.gov/pdf/pep/ZONING%20ORD.UPDATED2-8-2012.pdf> on November 19, 2013.

⁴⁹ The City of Birmingham Zoning Ordinance. Subsection 6

⁵⁰ The City of Birmingham Zoning Ordinance. Subsection 6. Part 5, PG. 6-19).

⁵¹ The City of Birmingham Zoning Ordinance. Signs. Subsection 6 Off-Premise Signs PG. 6-21

⁵² The City of Birmingham Zoning Ordinance. Subsection 7 On-Premise Signs (PG. 6-22).

Highland Park Neighborhood Form-Based Overlay District Regulations

As the implementing agency considers expanding to various neighborhoods, it should also consider the various codes that may exist within. For example the Highland Park Neighborhood has adopted a Form-Based Code which encourages development that complements the existing historic character of the neighborhood.⁵³ This code also requires that “any structure or portion thereof which encroaches into the public right-of-way or its airspace will require an approved right-of-way agreement from the City Council.”⁵⁴

Challenges:

- Zoning ordinances may need to be adjusted or the permitting process expedited to enable placement and installation of stations.
- Zoning ordinances may need to be adjusted to allow sponsorship or advertising on the stations or bicycles.

Opportunities:

- State, county, and City plans include provisions for expanding the bicycle network throughout Birmingham and show support for bicycle initiatives. There is an opportunity to use this momentum to gain support for a bikeshare program.
- There is an increased interest in making Birmingham a more walkable, bicycle-friendly, vibrant and livable community.
- There are opportunities to integrate bikeshare with other initiatives such as proposed transit changes, community

⁵³ The City of Birmingham Zoning Ordinance. Article VI – Supplementary Regulations and Modifications. Section 20. Highland Park Neighborhood Form-Based Overlay District Regulations. PG. 6-109. Obtained from <http://www.birminghamal.gov/pdf/pep/ZONING%20ORD.UPDATED2-8-2012.pdf> on November 19, 2013.

⁵⁴ Highland Park Neighborhood Form-Based Overlay District Regulations. Subsection 7-F (PG 6-123)

building and redevelopment, and Complete Street implementation projects.

Conclusions/Recommendations:

Prior to undertaking system procurement, the RPCGB should further research existing local ordinances and regulations, and work with City officials to decide which, if any, need to be modified to make bikeshare possible. In particular, it will be important to ensure that right-of-way advertising or sponsorship is possible on the stations and bicycles.

With regard to permitting and installation, the RPCGB should involve local planning and engineering staff in general planning and layout of any potential station locations. If possible, the RPCGB should establish an agreement with the City to enable it to access a general permit to expedite the installation of bikeshare stations throughout the City.

Finally, it is recommended that the RPCGB consider requesting the City Council and the Office of the Mayor for exemptions for placing signs/informational panels on potential bikeshare stations.

Existing Organizational Capacity

A significant part of the decision-making process for selecting an appropriate business model is to understand the functions required to organize and implement a bikeshare system and to evaluate the interest and capacity of organizations that might be able to fill these roles. In general, the following functions are required to mobilize and operate a bikeshare system:

- Obtain political, public, and other support.
- Fundraising for initial capital and early operating costs, e.g., multiple years of operating funds.

- Procurement, of the equipment vendor and the operator. Contract administration.
- Ownership of the system and its assets.
- Operations.
- Evaluation and expansion decisions.

These functions could be undertaken by one or more organizations. Preliminary conversations with stakeholders indicated that neither the City nor the County have the programmatic reach to take on the full management and operations of a bikeshare program. However, both institutions in combination with the RPCGB have the technical expertise to produce the final implementation and business model and reflect the political and institutional realities within the City.

Based on these considerations and on additional discussions with regional stakeholders in there are two likely scenarios for possible implementation and management: i) management by an existing or newly created nonprofit organization, or ii) management of the program by the RPCGB. The specifics of each scenario are discussed below.

Nonprofit Organization

The selection of a nonprofit organization specifically charged with managing operations and service of a bikeshare system has been a viable way for small to medium-sized jurisdictions to implement a bikeshare program. A variation on this which has not been implemented is to identify an existing nonprofit to manage the bikeshare program. Funding for equipment typically comes to the nonprofit in the form of public, private and philanthropic sources. The ongoing financial liability for operations and additional equipment falls under the nonprofit organization. This organization is also tasked with fundraising and managing operational revenues. However, due to the nonprofit's constant reliance on intensive fundraising strategies as a

source of revenue, a large percentage of staff time may be consumed by fundraising.

While nonprofit organizations tend to be nimble and adaptive, the creation of such an entity may require additional support from a local government agency that may provide organization and possible financial support to the nonprofit in its first few years. There are also some issues with organizational capacity, as the nonprofit will need to focus not only on operations and potential expansion, but on fundraising and sustainability as previously expressed.

Examples of existing nonprofit organizations of the peer programs selected for this study include are Boulder B-Cycle, Denver B-Cycle and Charlotte B-Cycle.

Regional Planning Commission of Greater Birmingham

Another likely potential implementation structure may be for the RPCGB to directly manage the program. A review of existing programmatic structures within RPCGB indicated that the organization could potentially undertake such task. The existing structure of the organization includes programs like CommuteSmart, the PopUp Project, Safe Routes to School and the Alabama Partners for Clean Air (APCA) programs, which have major components of community outreach as well as public and stakeholder engagement. Furthermore, the RPCGB houses the Metropolitan Planning Organization (MPO) which is responsible for the development of the Region's Long Range Transportation Plan (LRTP), Transportation Improvement Program (TIP), Unified Planning Work Program (UPWP). For example, there are approximately 22,000 commuters and over 10,000 employers registered for the CommuteSmart

program.⁵⁵ This large network of registered users and employers represents a sizeable pool of potential bikeshare riders which may be able to provide additional revenue for the program.

The RPCGB also plays a large role in regional transportation planning and implementation of regionally focused programs such as CommuteSmart. This regional reach may facilitate potential expansion of a bikeshare program into nearby communities. Preliminary conversations with representatives from Homewood and Mountain Brook have indicated increased interest in bringing bikeshare to their communities. By holding and administering one regional agreement, the RPCGB would also be able to facilitate access to the same equipment, pricing and possible funding structures for the various communities within its service area.

While there are various examples of regionally integrated bikeshare systems in the U.S. including Capital Bikeshare and Hubway, none have explicitly started with the intention of being regional. Most jurisdictions have experienced growing pains that included different pricing, different goals, and different internal structures when expanding.

Increased and more streamlined access to various sources of funding makes the RPCGB a good candidate for administering a potential bikeshare program. The RPCGB can access and program various sources of federal funding including congestion mitigation funds (CMAQ), health related grants (such as the Centers for Disease Control) and other Surface Transportation funds. Furthermore, with its existing relationships with local stakeholders, funders, and sponsors the RPCGB may be able to access additional private funding to supplement federal funds to provide increased bikeshare service.

⁵⁵ Ricki Hall. Regional Planning Commission of Greater Birmingham. CommuteSmart Birmingham. Special Projects Coordinator.

An overview of the strengths and weaknesses for each of these organizations to take on management of the bikeshare system is presented in Table 7.

Conclusion/Recommendations:

Review of existing programmatic structures and organizational capacity within the RPCGB suggests that the organization is ideally suited to undertake the management, procurement, and implementation of a bikeshare system. Such management structure will facilitate access to various sources of federal, regional and local funding, while helping enable any potential regional expansion of a bikeshare program. This option will be further investigated in the Implementation Plan.

Public Input and Stakeholder Engagement

The public and stakeholder engagement portion of this project included a number of meetings to introduce the concept of bikeshare and receive feedback on i) what role bikeshare could play in Birmingham, ii) what kind of support (or opposition) there is for a possible program, and iii) where bikeshare stations could be located in the City. The engagement plan included a public meeting, various stakeholder meetings and interviews, an online survey, and an interactive web-based mapping tool to gather feedback on potential bikeshare station locations.

Public Input

The overall feedback received through the community workshop, online survey, project website and stakeholder interviews indicated that there is support for a bikeshare system in the City. This was further emphasized by the results of a recent *Birmingham Business Journal* online survey which indicated that 58 percent of respondents would utilize bikeshare at least occasionally if

implemented.⁵⁶ It is important to note that the survey was conducted by the Journal without the use of a scientific method and responses came from self-selected survey takers.

Community Workshop

A public meeting was held at the Birmingham Chapter of the American Institute of Architects building on November 13th, 2013. The meeting was attended by 43 community members including bicycle advocates and bicycle shop representatives.



Figure 24 - Birmingham residents provide input on where stations could be located

Attendees were given a presentation that outlined the scope of the project, explained the potential benefits of a bikeshare program, and provided preliminary findings of the study. Attendees were invited to participate in a discussion with project staff to ask any questions about bikeshare. Community members were also asked to suggest potential station locations.

Generally, attendees supported the concept of bikeshare, with many conversations revolving around how a bikeshare could be implemented in the City, even though it doesn't have a complete network of bicycle facilities.

⁵⁶ Birmingham Business Journal. Business Pulse - Polls and Surveys. Would you use a bikeshare program in Birmingham? Retrieved from <http://www.bizjournals.com/birmingham/poll/poll/13275582/> on November 26, 2013.

An overview of the strengths and weaknesses for each of these organizations to take on management of the bikeshare system is presented in Table 7 below.

Table 7 - Assessment of Potential Operating Models

Model	Ownership and Capital and Ops Funding	Operations	Potential Funding Sources	Potential for Regional Expansion	Speed / Nimbleness in Implementation	Goal #1: Livability and Economic Competitiveness	Goal #2: Social and Geographic Equity	Goal #3: Health and Safety	Goal #4: Finances and Transparency	Examples
RPCGB-Managed	RPCGB	Either RPCGB or private	● City, state, federal, private, foundations	● As RPCGB is a regional body, can set up regional structure from beginning	● Fastest because no agreements / contracts required	● Can leverage the existing CommuteSmart program to focus on transit aspects of this goal	● Full control over site locations and other aspects of the program to meet this goal	● Full control over safety and education aspects of the program to meet this goal	● Administrative and financial infrastructure already in place at RPCGB to meet this goal.	None for a regional body. City examples are: Capital Bikeshare (Washington DC); Hubway (Boston)
Existing or New Nonprofit	Nonprofit	Either nonprofit or private	● City, state, federal, private, foundations	● Need to create regional relationships and contracts to allow for regional expansion	● Either new nonprofit will need setup, or existing nonprofit must be identified	● Less access to potential public funding, not able to guarantee affordability	● If new nonprofit, would be part of nonprofit's mission	● If new nonprofit, would be part of nonprofit's mission	● Difficult for nonprofit to have administrative overhead for detailed, transparent and accurate financial reporting from beginning	Nice Ride Minnesota, Denver B-Cycle, Charlotte B-Cycle

Legend: ○ least favorable for this category

 ● most favorable for this category

Other questions brought up were whether the system could potentially be expanded to other neighboring jurisdictions, what a bikeshare system would cost, and other logistical and operational considerations.

Community members also supported the idea that a bikeshare program could help change Birmingham's image and attract younger, creative, and a more diverse group of residents, businesses, and employees. The public also agreed that a bikeshare program would increase mobility options for low income and minority people who do not have access to private automobile transportation, while helping decrease the number of people driving. Members of the public proposed that additional bicycle facilities be implemented in conjunction with the bikeshare program to provide a more comfortable environment for new riders.

Online Survey

A brief survey was posted on the project website from September to December 2013 and included twenty-three (23) questions. It was promoted via several media sources including press releases, newspaper, television, and radio interviews, social media outlets, and the project website. The purpose of the survey was to gauge public attitude towards bicycling, understand trip patterns, and gather input on implementing a bikeshare program in Birmingham.

The survey was divided into three major categories: i) current bicycle usage; ii) opinions about bikeshare; and iii) demographic and employment information. A total of 233 complete responses were received. The following sections present a summarized account of responses. A complete account of responses received can be found in Appendix 2 of this document.

Current Bicycle Usage

While the majority of responders had access to a working bicycle (68.9 percent), almost one-third of them (36.7 percent) rode their bicycles a few times a week and 17 percent of them daily. Just over half of respondents identified as seasonal bicyclists (51.1 percent), while most respondents (92.4 percent) used bicycling for recreational purposes.

Opinions on Bikeshare and its Feasibility

According to survey respondents, a grand majority (91.6 percent) think a bikeshare system would be a good idea for Birmingham, although only two in five respondents (42 percent) have had the opportunity to use an existing bikeshare program. Most people responding to the survey indicated they would use the bikeshare program at least once a week (64.3 percent) for social activities including dining and shopping (71 percent). When asked about what prices they would likely pay for annual, weekly and daily memberships, respondents indicated they would pay up to \$85, \$22 and \$15, respectively.

For the question, "Do you think bikeshare is a good idea?", some of the reasons for supporting the system included:

- The potential for a bikeshare program to provide an additional and sustainable transportation option for the City.
- The opportunity to promote healthy living.
- The opportunity to increase awareness about bicycling and walking in Birmingham

Most of the reasons for not supporting the system came down to the issues of safety, maintenance, and weather. There were several concerns expressed about the availability of safe bicycling infrastructure in the City. There were also concerns about who would be performing maintenance of the bicycles and equipment and at what frequency. Finally, some commenters had their doubts about the number of people that would want to bicycle in Birmingham under difficult weather conditions (too hot/too cold).

Demographic and Employment Information

Survey participants were also asked to provide some demographic and employment information. According to the information received, the average age of respondents was 39 and the majority (55 percent) were female. Ninety percent of respondents reported being white and employed with a median household income of \$48,000. The table below provides a breakdown of reported household income.

Value	Percent
Less than \$20,000	5.1
\$20,001 to \$40,000	13.6
\$40,001 to \$60,000	17
\$60,001 to \$80,000	19.8
\$80,001 to \$100,000	16.4
\$100,001 to 120,000	11.9
More than \$120,000	16.4

Table 8 - Reported Household Income

It is important to note that many online surveys are self-selecting, i.e., that existing bicyclists and those supportive of bicycling may be more likely to complete the survey.

Interactive Web-Based Mapping Tool

The project website (www.birminghambikeshare.com) included a link to an interactive web map that provided an opportunity for the public to suggest possible bikeshare station locations. The

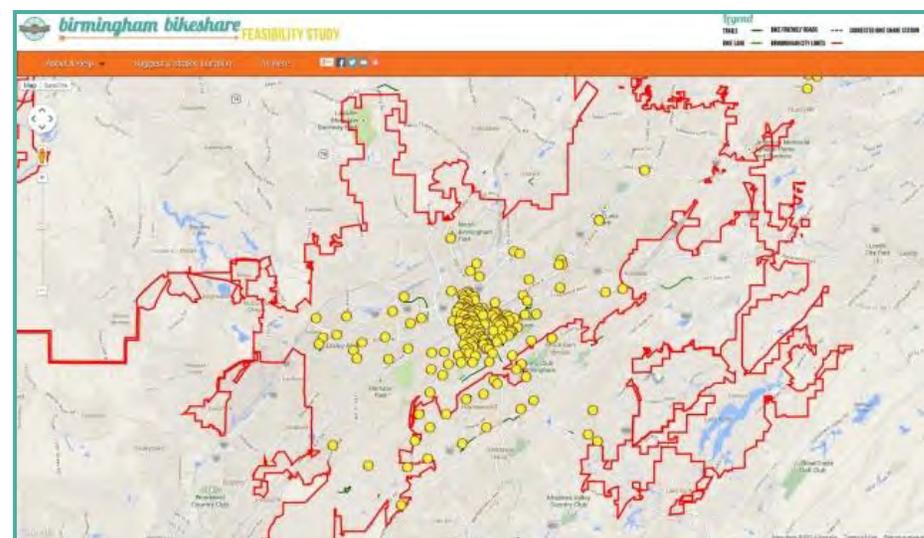


Figure 25 - Interactive crowdsourcing map

interactive map was opened for public comment on September 2013. Figure 25 shows a screenshot of the interactive map. As of December 2nd, 2013, 148 station suggestions were submitted using the mapping tool, with many locations being supported by multiple users.

Suggested locations and comments were exported as a Geographic Information System (GIS) shape file and mapped by the project team. This feedback was aggregated with other data to produce the demand analysis map in the next section of this report. Figure 26 shows a map of the suggested station locations weighted by the number of “likes” received for each station.

Stakeholder Engagement

A series of interviews and meetings were conducted by the consultant team with community stakeholders that included potential funders, various city agencies, businesses, and private sector representatives.

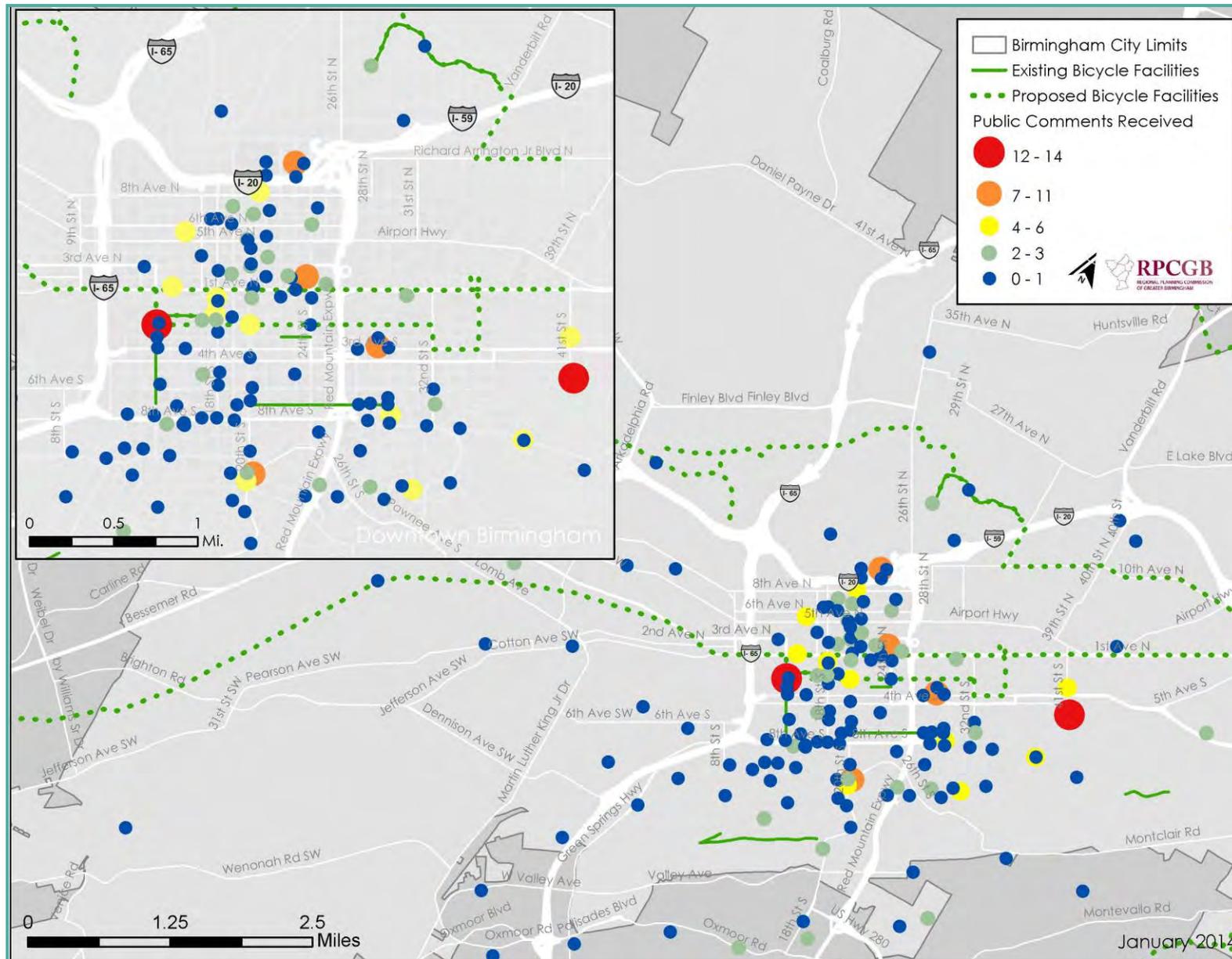


Figure 26 - Publicly Suggested Station Locations

The meetings were designed to gauge stakeholder sentiment towards the possible implementation of a bikeshare program in the City of Birmingham. Stakeholders were selected by RPCGB staff, based on their involvement in local issues and regional transportation policies. The following is a full list of stakeholders interviewed.⁵⁷

- Alabama Power
- Birmingham Business Alliance
- Birmingham City Council
- Children's Hospital
- City of Birmingham Department of Planning, Engineering and Permits
- City of Birmingham Office of the Mayor
- Community Foundation of Greater Birmingham
- Office of Planning – Regional Planning Commission of Greater Birmingham
- Railroad Park Birmingham
- Regions
- REV Birmingham
- The Birmingham-Jefferson Complex
- The United Way of Central Alabama
- The Bikeshare Taskforce – comprised of multiple nonprofit, public, and private entities
- UAB Sustainable Smart Cities Research Center
- University of Alabama at Birmingham Campus Planning and Parking

The interviews reaffirmed several assumptions of the project team and provided additional information on possible opportunities and challenges for implementing a bikeshare program in Birmingham.

⁵⁷ This list only includes stakeholders interviewed by the project team. Additional meetings were held by staff of the Regional Planning Commission of Greater Birmingham.

Overall, the meetings reflected that there is interest in bikeshare among regional stakeholders. Many stakeholders felt that bikeshare could help change Birmingham's image and reputation, and help attract talent to the region. Stakeholders also indicated that bikeshare is an opportunity to "remake" Birmingham into a vibrant, more walkable and bicycle-friendly city.

Stakeholders most commonly supported a bikeshare program as a way to increase connections and transportation options for residents and visitors. They also noted that a bikeshare system could help increase economic development in the downtown core and throughout the region.

Stakeholders also noted that implementation of a bikeshare system should include a large geographic area and incorporate all socio-economic levels to address the needs of the various communities in the City. Finally, stakeholders supported the opportunity to promote healthier lifestyles through the bikeshare program.

Most stakeholders ranked station sponsorship as the most important funding mechanism for the program. While most organizations were open to the possibility of providing sponsorship, it is difficult to know if these commitments can be fulfilled until more information on the level of financial commitment is understood and a formal request for sponsorship undertaken.

Safety was a big concern for the majority of stakeholders who conveyed some hesitation on how a bikeshare program could be implemented without a complete network of separated bicycle facilities. Stakeholders also expressed some concern about:

- The lack of connectivity between various parts of the City imposed by the barriers created by railroad tracks and major freeways (I-20, I-65 and Red Mountain Expressway).
- The lack of transit options linking people to different areas of the city.
- The cost effectiveness and financial needs of a potential bikeshare program.

Challenges:

- The public and stakeholders expressed concerns about the lack of bicycling infrastructure in the City and suggested that a core bicycling network be implemented in conjunction with the bikeshare program.
- Stakeholders and the public expressed concern about maintenance of the equipment and other program logistics.
- Stakeholders believed that operational funds would be more difficult to raise than capital funds.

Opportunities:

- Public engagement undertaken as part of this project was generally supportive of a bikeshare program.
- Results of the online survey indicated that people would be willing to pay market prices for bikeshare.

Conclusions/Recommendations:

Based on the results of the public outreach and stakeholder engagement, there is support for implementing a bikeshare program in Birmingham. However, it is recommended that the concerns raised through this process be addressed as part of the implementation of the bikeshare program, including encouraging the development of a core bicycle network connecting the bikeshare system.

Additional public engagement should be conducted to understand whether there is support among populations that were under-represented in the public engagement process, e.g., other socioeconomic groups.

Evaluating Demand, System Size, and Funding Sources

This section evaluates potential demand for the system and identifies a potential service area for a bikeshare system in Birmingham. It also identifies several possible funding plans. The analysis takes into account the program goals as defined earlier in this feasibility study.

Demand Analysis

A demand analysis was performed for the City of Birmingham utilizing data obtained from the U.S. Census, Bureau of Labor Statistics, and the RPCGB. The demand analysis identified areas with the highest potential demand for bikeshare through a heat mapping exercise access allocated “points” to where people live, work, shop, play, and take transit. The results of the heat map were used to identify the initial service area, inform system phasing, and identify specific station locations.

Indicators

Experience to date in the U.S. suggests that launching a bikeshare program in areas with a mix of uses and a high density of population and jobs maximizes the potential for success. The GIS analysis included the following indicators to represent this effect:

- Employment density.
- Population density.

- **Proximity to attractions.** Four attraction types were considered including parks, libraries, schools and tourist destinations.
- **Proximity to transit.**
- **Proximity to bicycle infrastructure.**
- **Topography.** Terrain and slope can have a significant impact on the amount of bicycling. Bicycle ridership has been shown to be reduced up to 10-to-15 percent with a 10 percent increase in the degree of slope.⁵⁸
- **Equity.** Two variables were considered: median household income and the percentage of non-white population.
- **Public Comments.** Station locations suggested by the public were included.

Methodology

The bikeshare demand map (heat map) was created by aggregating the above demographic, employment, topographic and proximity indicators. Each indicator was scored (weighted) based on its perceived impact on bikeshare demand. Certain factors are area-based data (e.g., census blocks and/or tracts), while others were proximity based (e.g. attractions, school locations, transit stops, etc.). The resulting “heat map” is shown on Figure 27. The heat map shows that demand is expected to be highest in Downtown Birmingham, extending east along the 1st Avenue South and 3rd Avenue South corridors to the Avondale neighborhood. Appendix 1 provides a complete description of the demand analysis methodology.

⁵⁸ Parkin, J., Ryley, T. J., & Jones, T. J. (2007). Barriers to Cycling: An Exploration of Quantitative Analysis. In D. Horton, P. Rosen, & P. Cox (Eds.), *Cycling and Society* (pp. 67-82). Burlington, Vermont: Ashgate Publishing Company.

Recommended System Service Area and Size

Bikeshare Market Recommendations

Market areas where bikeshare is likely to be most successful in Birmingham were defined based on the community evaluation, the program’s intended goals, feedback from the community engagement process, and the heat mapping results. These are shown on Figure 28.

Table 9 – Core and Expanded Market Station Densities of Peer Bikeshare Systems

System	Overall Stations	Core Area		Full System	
		Area	Stations(Sq. Mi.)	Area	Stations (Sq. Mi.)
Boulder	23	1.89	7.39	4.82	4.79
Charlotte	21	3.14	10	11.02	1.81
Chattanooga	33	4.65	6.88	5.15	6.21
Denver	52	8.2	40	12.7	4.14
4-system Average	32.25	4.47	16.06	8.39	4.24

The recommended system boundaries have been divided up into two deployment phases, beginning with the core downtown market area and expanding into adjacent neighborhoods in a subsequent phase. The size of each phase (i.e., the number of stations and bicycles in each) was developed based on typical station densities and station sizes observed in peer cities with similar characteristics to Birmingham. These are summarized in Table 9.

Peer cities exhibit core market station densities averaging just over four stations per square mile, and system-wide densities averaging approximately 8.39 stations per square mile.

Capital funding capacity was also considered so as to not plan a system that was too large to be realistically funded.

The proposed phasing plan is summarized in Table 10 and considers the first two phases of the system. This does not preclude future expansion into other areas. Expansion should only be considered after an initial operating period when the system is better understood along with funding commitments and its revenue potential. This could include other areas of the City or jurisdictions outside of the City of Birmingham. The first two phases of the program are described below.

First Phase

This phase includes 20-to-40 stations, 200-to-400 bicycles, and constitutes the core market area of the bikeshare system. It includes Downtown Birmingham, UAB, and the neighborhoods of North Birmingham, Southside, Five Points South, Northside, Parkside, and the Civil Rights and Loft Districts. At just over three square miles, this area is only a small portion of the City's land area, but hosts 46 percent of the city's jobs. It is also the region's hub for transportation and tourism.

The mix of uses and higher densities in this area exhibit the highest potential for bikeshare demand and would maximize revenue potential that may be needed to support future phases of the system.

Phase I includes the highest density of stations (6-to-12 stations per square mile). This station density is higher than bikeshare systems in peer cities, but could help to generate additional ridership due to the convenience provided by closely spaced stations.

Second Phase

The second phase includes an additional 5-to-10 stations and 50-to-100 bicycles and will expand the system eastward into traditionally residential neighborhoods. This expansion will add 1.5 square miles of service area, bringing the overall system service area to almost five square miles.

Table 10 – Recommended Service Area and System Characteristics

	Service Area (per sq. mi.)	Stations	Bicycles	Station Density (per sq. mi.)
Phase 1	3.31	20-40	200-400	6.04-12.08
Phase 2	1.43	5 – 10	50-100	3.50-8.39
Total	4.74	25-50	250-500	5.07 – 10.97

This phase represents a lower station density (3.5-to-8.3 stations per square mile) to reflect lower population and residential densities in this area. Implementation of the second phase will bring bikeshare to the neighborhoods of Avondale, Forest Park, and Highland Park and serving activity and job centers including, Pepper Place, Sloss Furnaces and St. Vincent's Hospital.

Key Demographics of the Proposed Service Area

When fully implemented, Phase 1 and Phase 2 of the bikeshare program will serve over 14,000 residents and approximately 79,000 employees. In fact, the first two phases of the bikeshare program have the potential to serve over 46 percent of all the jobs in the City of Birmingham.

The proposed service area also represents a diverse cross section of the City in terms of age, race, and employment. The population density of the service area is approximately 3,000 people per square mile and the employment density is approximately 20,000 jobs per square mile. This is comparable to the population density within core service areas of other mid-size southeastern peer cities with existing bikeshare programs. Table 11 provides a summary of select market demographics for each of the proposed market areas.⁵⁹

⁵⁹ Source: U.S. Census Bureau, 2010 DP02, DP03 Files

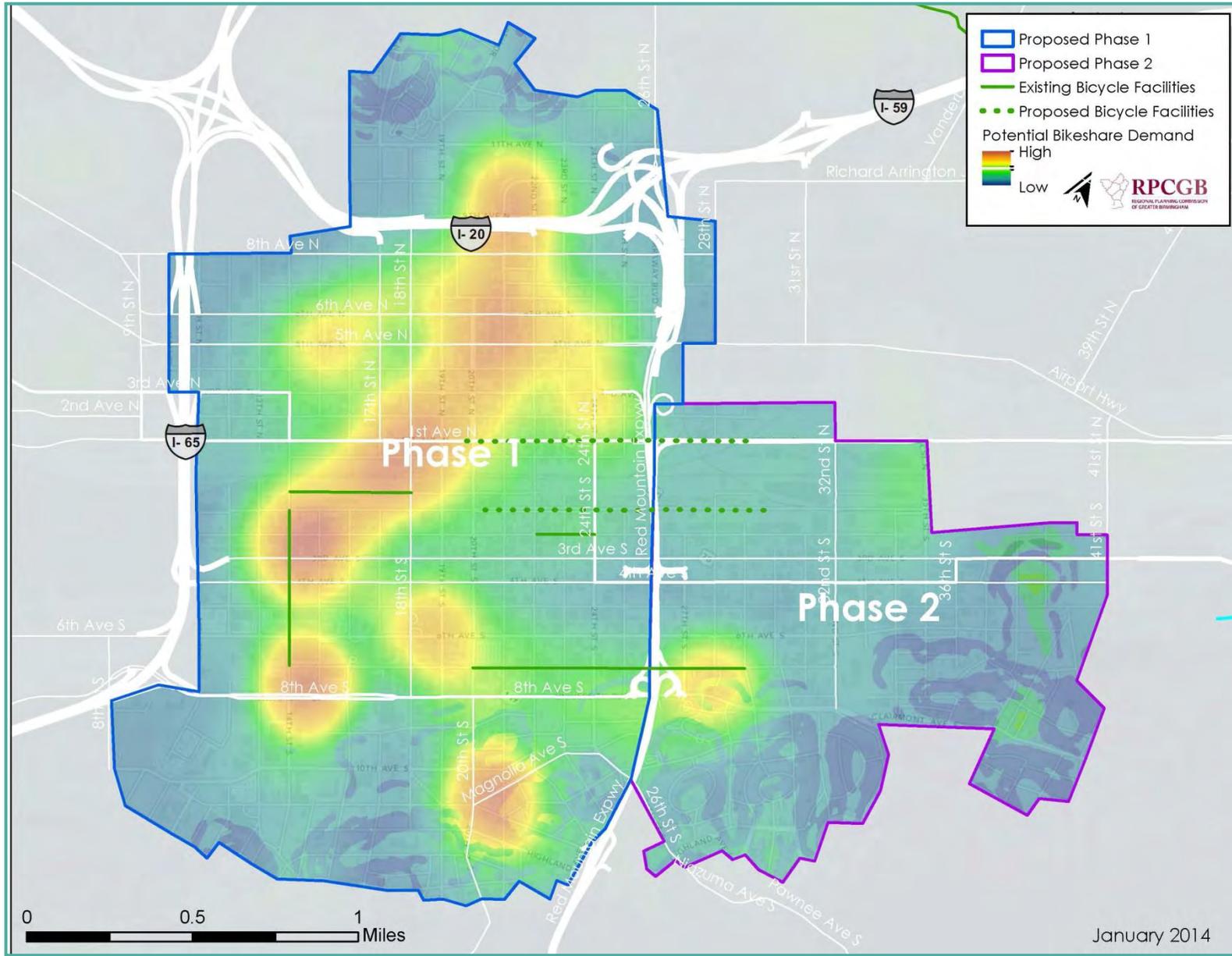


Figure 28 - Proposed Phasing

Table 11 - Select Demographics for Proposed System Phases

	Phase 1	Phase 2	Birmingham
Population			
2011 population	10,435	4,152	214,348
Employment			
In labor force	5,635	2,242	100,190
Employed	4,846	1,928	87,059
Unemployed	789	314	13,063
Race			
White	44.4%	72.4%	21.7%
Black	48.0%	22.9%	73.7%
Asian	0.0%	0.0%	0.9%
Hawaiian/Pac. Isl.	0.0%	0.1%	0.0%
Other	0.0%	0.1%	0.2%
Multiple Race	3.8%	1.1%	0.5%
Hispanic	3.8%	3.4%	3.1%
Gender			
Male	61.3%	38.4%	46.4%
Female	38.7%	61.6%	53.6%
Age			
Under 5 years	6.8%	6.8%	6.8%
5 to 9 years	5.6%	5.6%	5.6%
10 to 14 years	6.0%	6.0%	6.0%
15 to 19 years	6.7%	6.7%	6.7%
20 to 24 years	8.4%	8.4%	8.4%
25 to 29 years	8.3%	8.3%	8.3%
30 to 34 years	7.0%	7.0%	7.0%
35 to 39 years	6.1%	6.1%	6.1%
40 to 44 years	6.0%	6.0%	6.0%
45 to 49 years	6.7%	6.7%	6.7%
50 to 54 years	8.1%	8.1%	8.1%
55 to 59 years	6.4%	6.4%	6.4%
60 to 64 years	5.1%	5.1%	5.1%
65 to 69 years	3.6%	3.6%	3.6%
70 to 74 years	2.8%	2.8%	2.8%
75 to 79 years	2.5%	2.5%	2.5%
80 to 84 years	1.9%	1.9%	1.9%
85 years and over	2.0%	2.0%	2.0%
Housing			
Units	4,518	2,868	111,647
Vacant	768	445	23,455
Owner Occupied	3,750	2,423	42,303
Area			
Square Miles	3.31	1.43	151.9

The proposed service area helps to address equity and serves several currently underserved populations. The first two phases includes a high proportion of nonwhite population (41 percent) and a high percentage of households who rent (53 percent compared to the citywide rate of 48 percent).The proposed program phasing also has the potential to bring additional mobility services to minority and lower income residents in these areas.

Potential Funding Sources

There are a significant number of potential public and private funding sources for a bikeshare system in Birmingham. These include the following:

Public Sources

Federal

Bikeshare programs in the U.S have largely relied on discretionary grants such as Congestion Mitigation Air Quality (CMAQ) and Transportation Investment Generating Economic Recovery (TIGER) for capital funding. Such funding generally requires a local match of 20 percent, which can come from local public funds or sponsorships and donations. The Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) have provided a list of available funding sources which can be found in Table 12.⁶⁰

Grants from the Centers for Disease Control (CDC) have also been used for capital investment, operations, conducting discounted membership drives, and promoting bikeshare as part of their active living initiatives.⁶¹

⁶⁰ General Funding Requirements. Federal Highway Administration. Accessed from http://www.fhwa.dot.gov/environment/bicycle_pedestrian/guidance/bp-guid.cfm#bp4 on August 22, 2013.

⁶¹ Centers for Disease Control and Prevention. Accessed from http://www.cdc.gov/pcd/issues/2013/12_0274.htm.

Preliminary assessment has shown that the RPCGB may be best positioned to access federal funding.

Table 12 - Existing Funding Streams for Bikeshare Implementation

	NHS	STP	HSIP	SRTS	TEA	CMAQ	RTP	FTA	TE	BRI	402	PLA	TCSP	JOBS	FLH	BYW
Bike Parking																
Bike share Capital costs																
Bikes Storage																

As the regional planning agency, the RPCGB already has a detailed understanding of the application process which may decrease some of the hurdles and competition for these funds.

RPCGB may also be able to expedite implementation of a program by directly apportioning some of the existing CMAQ funding towards bikeshare. Finally, the bikeshare program could also be included as a complement to the CommuteSmart program which is already administered by the RPCGB.

There are a number of factors to consider before pursuing federal funds:

- These sources are generally less flexible than other funding sources, and most often can only be used for capital, not operations. For example, FTA funding may only be used for specific capital expenditures including bikeshare docks and equipment, but not the bicycles, whereas FHWA funding can be used to purchase all equipment including bicycles.
- Buy America or Buy American provisions, NEPA assessments, and accessibility considerations are among the additional requirements a jurisdiction must complete to access certain federal funds.
- Federal funds can be less flexible in terms of disbursement /reimbursement timeframe and delays are common. This can make deployment more difficult.⁶²
-

Private Sources

Private funding is another revenue stream for many U.S bikeshare systems. Private foundation grants and private donations are typically easier to garner by nonprofit organizations. While private funding can require a large commitment of staff time and effort, the RPCGB has begun engaging potential funders who have expressed interest in various aspects of a bikeshare program.

Sponsorship is the largest form of private funding and can be used to help cover either capital or operations. The top private employers in the City, including UAB, Alabama Power, and Regions, have already been engaged and have shown interest in supporting the system. Additionally, the ongoing working relationships with Birmingham Business Alliance, the BJCC, and the Community Foundation of Greater Birmingham may help the RPCGB reach out to other partners. There are

⁶² Bike Sharing in the United States: State of the Practice and Guide to Implementation. Federal Highway Administration. United States Department of Transportation. September 2012

numerous smaller businesses that may be interested in individual station sponsorships and corporate memberships in support of a bikeshare system.

Private foundations may offer grants or funding that could help support day-to-day operations. A database of private foundations in the area can be found at:

<http://foundationcenter.org/findfunders/foundfinder/>

In all funding situations, but particularly with private funding that may be annualized rather than an upfront lump sum payment, cash flow needs to be planned and it may be necessary to negotiate a portion of funds up-front or some form of financing arrangement.

Challenges:

- The proposed Birmingham bikeshare system is not expected to be self-supporting from user revenues alone (based on the experience of existing bikeshare systems in comparable cities). Therefore, securing sponsorship and other private funding is likely to be necessary for ongoing operations.
- Federal or state grant money is likely to be needed for capital. This typically requires a local match and can be subject to rules regarding the use of the money and regulations that need to be met to use it.

Opportunities:

- The RPCGB has already identified potential sources of federal funding which may be used for capital.
- The RPCGB has existing working relationships with various businesses and private organizations which may be able to provide some funding and/or sponsorship for the proposed system.

- The RPCGB has begun conversations with various businesses and interest groups that may be able to provide sponsorship for bikeshare stations.

Conclusions/Recommendations:

Based on a review of potential funding sources, the RPCGB should pursue some allocation of federal funding through the next distribution of Transportation Improvement Program (TIP) funds. This can be combined with additional funding sources to fund the procurement of equipment. Existing relationships with local foundations and businesses should be leveraged to try to secure the local match necessary to federal funds. Furthermore, RPCGB should continue to reach out to the Birmingham business community to seek sponsorship funding for operations.

Implementation Considerations

As the RPCGB begins to examine the potential implementation of a bikeshare program in Birmingham, it should consider addressing the following.

Service Hours

It is recommended that the RPCGB implement a 24 hour/7 days a week system which is available 365 days per year. These hours are standard. Such a system is not more expensive to operate, as the system is self-service. Customer service can be an overnight voicemail except for emergencies. Although programs in Chattanooga and Charlotte have opted to limit their service hours from 6 a.m. to midnight seven days a week, there is no decisive reason for Birmingham to limit its hours.

Promoting and Marketing the Program

The bikeshare program should create a recognizable brand that can be marketed throughout the city. This brand will be featured on the system's bicycles, stations, and promotional materials. As

an example, to promote the Capital Bikeshare program, the District Department of Transportation and Arlington County selected a brand and logo with similarities to the existing Circulator Bus, a brand that was already known in the region (see Figure 29 for more details).



Figure 29 – Capital Bikeshare and DC Circulator

Existing partnerships and outreach programs could be utilized to initially build support for the program. These outlets could also take on long-term programmatic support for the program or turn this over to the operator. Existing opportunities, such as CommuteSmart and Pop-Up Project, will help spread the word about the program and create an initial buzz and excitement. Furthermore, utilizing the existing social media outlets for RPCGB programs can help the system gain traction in reaching a much larger

pool of potential users.

Finally, the RPCGB should leverage its partnerships with local businesses and associations, which may help promote the initial launch of the program as well as ongoing operations. These organizations may be interested in sponsorship, group memberships, or other means of support for the program.

Safety

In line with the proposed goal of promoting a culture of safety among bikeshare system users, the should include an outreach program that educates the general public about the use of helmets and the existing “rules of the road” for pedestrians, bicyclists, and motorists.

The system should promote and encourage the use of helmets while on a bikeshare bicycle. While it is not required for people over the age of 16 to wear a helmet while on a bicycle in Birmingham, basic promotion and encouragement could help increase the number of people using helmets while on a bikeshare bicycle.

Bikeshare operators have successfully implemented partnerships with local bicycle shops and businesses to offer helmets at a discounted rate. The RPCGB should consider such strategy to help increase the availability of helmets for users.

Siting

There are a number of considerations for locating and installing bikeshare stations. The following list can help to evaluate each proposed site.

Serving Areas with High Activity

Bikeshare programs are most successful in areas that have a mix of uses and high densities of population and jobs. Stations should be in locations that help serve the highest number of potential users. Furthermore, stations should be placed in locations that are clearly visible.

Serving Areas with a Mix of Population

In line with the goal to integrate social and geographic equity into the program, sites that can serve users in minority and low-income communities should be selected.

Serving Areas with High Transit Ridership

Sites should also be located in close proximity to high-ridership transit stations/stops. This will maximize integration between modes and expand the service area.

Spacing requirements

While most existing bikeshare stations are modular and have interchangeable parts, there are certain minimum siting requirements which should be considered. Figure 30 provides average dimensions for a 15-dock bikeshare station.

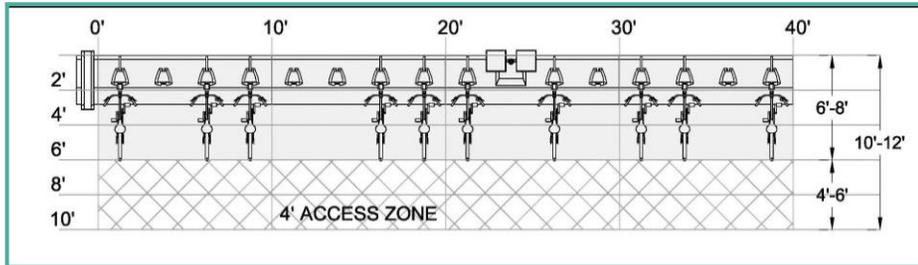


Figure 30 - General Siting Requirements for a Bikeshare Station

Siting requirements include:

- For a standard 15-dock station, a footprint of 6 feet by 41 feet is required with a minimum clearance of 4-to-6 feet behind the bicycles for the access zone.
- A minimum of one (1) foot of clearance from fixed objects (e.g., lamp posts) is desirable.
- Usually a 10 foot setback from fire hydrants and stand pipes is required for access by the local Fire and EMS department.
- When a station is located on the sidewalk, a setback of two (2) feet from the back of the curb is desirable.
- When placing a station on the street, the placement of bollards and striping is recommended at a distance of at least one (1) foot behind the end of the wheels of the bicycle when docked and four (4) feet from each end of the bikeshare station.
- Depending on the technology used, the minimum time with direct access to sunlight varies from six-to-eight hours. However, the ideal time of access is 12 hours per day to allow for the solar powered batteries to charge.

It is recommended that the RPCGB work with City of Birmingham engineers and staff to finalize the locations of potential bikeshare stations and design guidelines for installation. The RPCGB and the operator should also work with City staff to expedite the permitting process.

Challenges:

- Design a system that meets both the social equity and financial sustainability goals of the system.
- Find the necessary space for possible station locations.

Opportunities:

- Serve various communities throughout the City increasing access to jobs, recreation and healthy nutrition.
- Increase the reach of transit and in some cases supplement existing transit services.
- Utilize existing outlets, partnerships, and relationships with major stakeholders to help promote and market the bikeshare program.

Conclusions/Recommendations:

As the RPCGB considers implementation of a bikeshare program it should be mindful of the community's needs while accounting for the financial need of the program, i.e., maximizing user-generated revenues where necessary. Furthermore, the organization should focus on extending service to residents who could benefit the most out of a less expensive way to travel. The RPCGB should continue to engage in a working partnership with the City to help expedite the review process for station locations. Finally, it will be important for the RPCGB to focus its efforts on implementing a bikeshare program that can complement existing transit services while providing additional connection to underserved communities and neighborhoods.

Feasibility Recommendation

Overall feasibility for a bikeshare system must be determined in the context of its outlined goals. The City of Birmingham has many characteristics that are conducive for a successful bikeshare system – a flat and easy to navigate downtown area with wide streets, increasingly higher population density, significant employment density, stakeholders committed to downtown revitalization, significant public support, an emerging residential population and underserved populations in the area that can benefit from increased connectivity. The proposed structure of an RPCGB-managed system will create a bikeshare system that has a high chance of successfully reaching the stated goals for the system. The biggest challenges for Birmingham are to overcome the prevailing car culture and to continue the build out of its bicycle-friendly infrastructure. Such challenges have been faced by many cities implementing bikeshare, and these challenges can be addressed in parallel to preparing Birmingham for a bikeshare system. With these challenges in mind, this study has found that the implementation of a bikeshare program in Birmingham is feasible. Specific Challenges, Opportunities and Recommendations identified in this Feasibility Study are summarized below.

Table 13 - Challenges, Opportunities, and Recommendations

Item	Challenges	Opportunities	Conclusion / Recommendation
Geography, Climate and Land Use	<ul style="list-style-type: none"> • Areas of the city experience difficult topography characterized by significant hills • Hot summers • Neighborhood connectivity 	<ul style="list-style-type: none"> • Flat topography in Downtown • Relatively well distributed grid-like street pattern • Wide streets conducive to cycling 	The challenges outlined are similar to those exhibited in peer cities, and are not viewed as impediments to introducing bikeshare to Birmingham.
Demographics and Employment	<ul style="list-style-type: none"> • Lower densities in various areas of the city 	<ul style="list-style-type: none"> • Comparable population density to other southeastern cities that have implemented bikeshare • High population density in Downtown and UAB • UAB represents a large student population and employment hub • Significant neighborhood revitalization in Downtown Birmingham • Low income and minority populations in the vicinity of downtown • Several large employers downtown 	Downtown revitalization provides a strong opportunity for successful uptake of bikeshare, as well as providing a transportation solution for low-income and minority populations in the vicinity of Downtown.

Item	Challenges	Opportunities	Conclusion / Recommendation
Bicycle Infrastructure	<ul style="list-style-type: none"> Limited bicycle infrastructure Difficult north-south connections between activity centers Existence of physical barriers to connectivity including freeways and rail corridors 	<ul style="list-style-type: none"> Wide street width and an easy to navigate grid within Downtown Birmingham Emerging bicycling culture Birmingham can develop its bicycle infrastructure in parallel with a bikeshare program, as many communities have done 	Consider the short, medium and long-term development of the bicycle infrastructure in the Downtown area, and utilize bikeshare as an impetus for its development.
Tourism	<ul style="list-style-type: none"> Marketing to the tourist population 	<ul style="list-style-type: none"> Birmingham has a significant tourist population, as well as a thriving convention complex 	Promote partnerships with local organizations to capitalize on increased neighborhood connectivity and activation of tourism.
Public Transit	<ul style="list-style-type: none"> Infrequent transit Limited transit routes with difficult connectivity Circuitous transit routes 	<ul style="list-style-type: none"> Stations should be located close to major transit hubs to maximize ridership Increased connectivity 	Coordinate with existing and planned public transportation services to connect neighborhoods, and overcome some of the existing challenges with limited transit services in some areas and at some times of the day. Furthermore, bikeshare station locations should be coordinated with existing and planned transit projects to maximize the impact of bikeshare. Finally, the RPCGB should work to cross-promote CommuteSmart and bikeshare.
Local and Regional Plans and Policies	<ul style="list-style-type: none"> Zoning ordinance may need to be adjusted to enable placement and installation of bikeshare stations Zoning ordinance may need to be adjusted to allow sponsorship or advertising on the stations or bikes 	<ul style="list-style-type: none"> State, county, and city plans include provisions for expanding the bicycle network throughout Birmingham and show support for bicycle initiatives; there is an opportunity to use this momentum to gain support for a bikeshare program There is an increased interest in making Birmingham a more walkable, bikeable, vibrant and livable community There are opportunities to integrate bikeshare with other initiatives such as proposed transit changes, community building and redevelopment, and complete street implementation projects 	Prior to undertaking system procurement, the RPCGB should further research existing local ordinances and regulations, and work with City officials to decide which, if any, need to be modified to make bikeshare possible. In particular, it will be important to ensure that right-of-way advertising or sponsorship is possible on the stations and bikes.
Organizational Capacity	See Table 7	See Table 7	RPCGB is ideally situated to undertake the management, procurement, and implementation of a bikeshare system.
Public Input and Stakeholder Engagement	<ul style="list-style-type: none"> Lack of bicycle friendly infrastructure is of concern to stakeholders and general public Maintenance of the equipment and other program logistics is of concern to stakeholders Concerns about the prospects of raising operational funding 	<ul style="list-style-type: none"> Public engagement was generally supportive of a bikeshare program in the City Results of the on-line survey indicated that people would be willing to pay market prices for bike share 	Concerns raised through the public process (i.e., lack of bicycle friendly infrastructure, maintenance and operational funding) should be addressed as part of the implementation of the bikeshare program. Additional public engagement should be conducted to gauge support amongst under-represented sections of the public.

Appendices

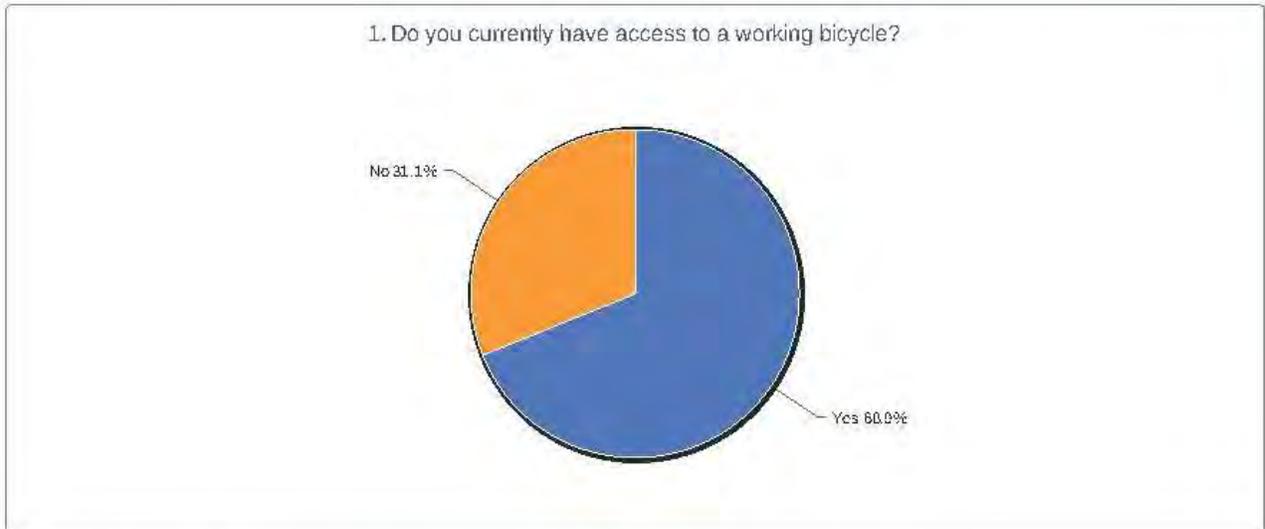
Appendix 1 – Methodology of Study

Using data provided by the Regional Planning Commission of Greater Birmingham and additional data from the U.S. Census Bureau and U.S. Bureau of Labor Statistics in September 2013, the consultant team constructed a demand analysis heat map depicting the areas in the City of Birmingham that have increased potential for bikeshare implementation. The demand maps were created by aggregating numerous factors related to bikeshare and weighting each factor by its perceived impact on the system. Certain factors are area-based data (e.g., census blocks and tracts). This data is assigned various weights based on whether the specific areas meet the criteria (e.g., five points are given to census tracts that include public recommended bikeshare station locations). Other factors are points or linear features. These factors are evaluated by creating buffers surrounding specific features at pre-determined distances and assigning those buffers. When all of the factors have been evaluated and assigned individual points they are combined via GIS Union into one feature. Finally, the scores are aggregated in the table and this is the final Demand Score that is represented on the map. The following table presents the full weighted scale:

Data Item	Proximity Factor (0.25 Miles)	TOTAL POINTS	Factor Weight
Employment Density	17	17	17%
Population Density	17	17	17%
Attractions	15	15	15%
Colleges	16	16	16%
Transit Routes Density	8	8	8%
Existing Trails	8	8	8%
Proposed Trails	8	8	8%
Public Comments	5	5	5%
Topography	-3	-3	+/-3%
Equity	8	8	8%
TOTAL		100	100%

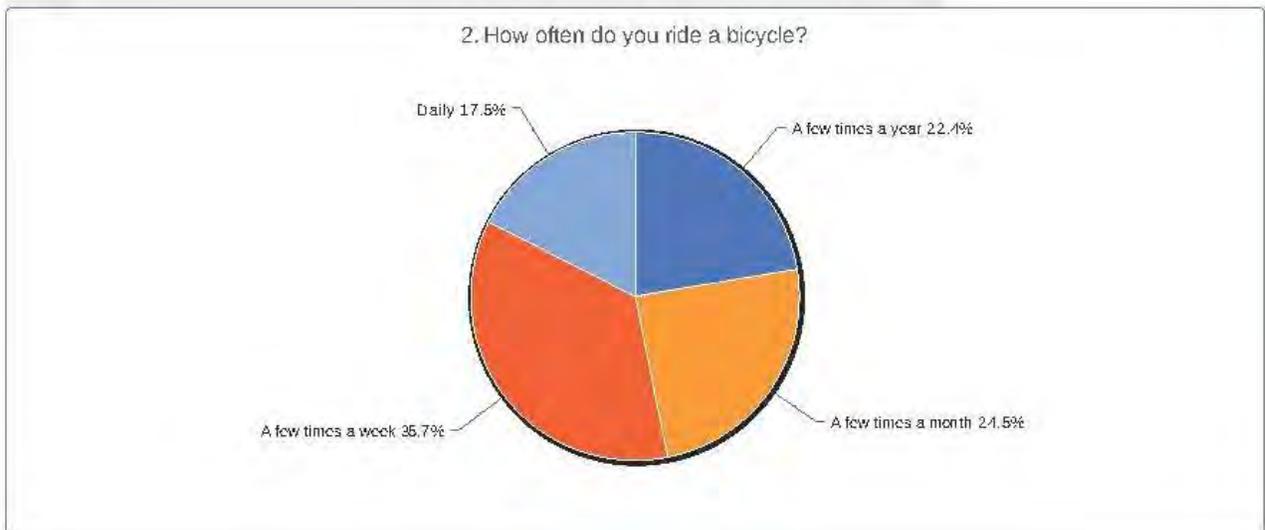
Appendix 2 – Online Survey Questionnaire and Summary of Results

The following is a summary of input received through the online survey that was linked to the Birmingham Bikeshare Feasibility Study website www.birminghambikeshare.com. The survey was open for general comment from September 2nd to December 3rd.



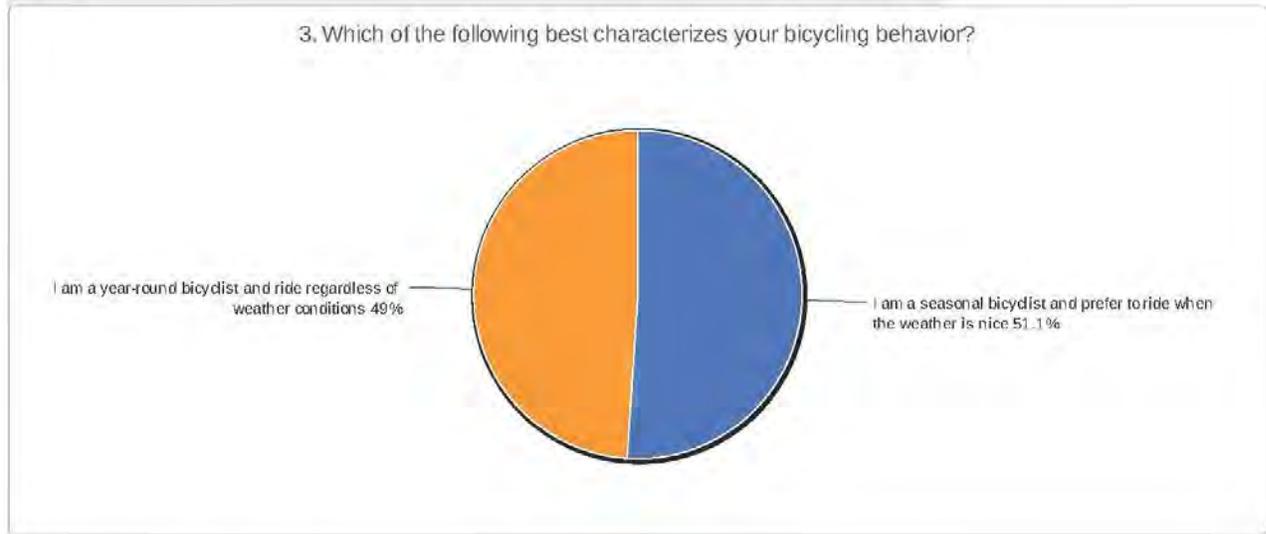
1. Do you currently have access to a working bicycle?

Value	Count	Percent %	Statistics	
Yes	144	68.9%	Total Responses	209
No	65	31.1%		



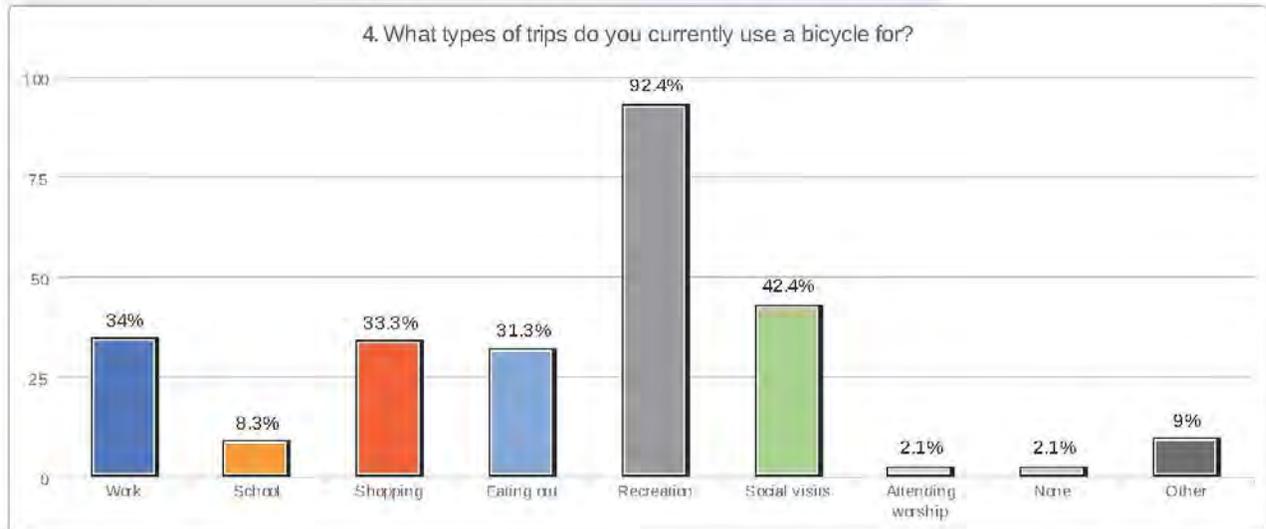
2. How often do you ride a bicycle?

Value	Count	Percent %	Statistics	
A few times a year	32	22.4%	Total Responses	143
A few times a month	35	24.5%		
A few times a week	51	35.7%		
Daily	25	17.5%		



3. Which of the following best characterizes your bicycling behavior?

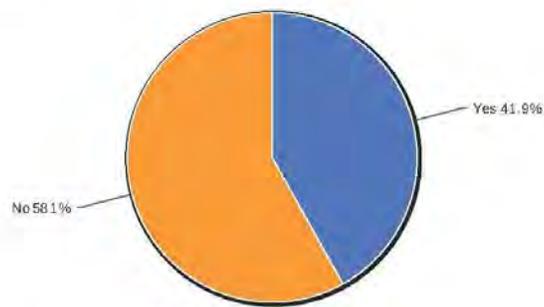
Value	Count	Percent %	Statistics	
I am a seasonal bicyclist and prefer to ride when the weather is nice	73	51.1%	Total Responses	143
I am a year-round bicyclist and ride regardless of weather conditions	70	49.0%		



4. What types of trips do you currently use a bicycle for?

Value	Count	Percent %	Statistics	
Work	49	34.0%	Total Responses	144
School	12	8.3%		
Shopping	48	33.3%		
Eating out	45	31.3%		
Recreation	133	92.4%		
Social visits	61	42.4%		
Attending worship	3	2.1%		
None	3	2.1%		
Other	13	9.0%		

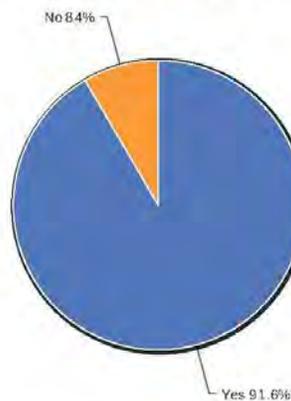
5. Have you had an opportunity to use an existing bikeshare system before?



5. Have you had an opportunity to use an existing bikeshare system before?

Value	Count	Percent %	Statistics	
Yes	80	41.9%	Total Responses	191
No	111	58.1%		

6. Do you think bikeshare is a good idea for the City of Birmingham?



6. Do you think bikeshare is a good idea for the City of Birmingham?

Value	Count	Percent %	Statistics	
Yes	174	91.6%	Total Responses	190
No	16	8.4%		

7. Please tell us why you think bikeshare is a good idea for the City of Birmingham.

Count	Response
1	Better for transportation over crowded streets.
1	Bham is flat, it is hard to get around UAB campus and traffic is terrible. Great climate for it.
1	Bike share would provide a great transportation option.
1	Biking is a viable transportation option for birmingham. The space for the infrastructure exists.
1	Connect people to jobs, to health, to education. Revitalize downtown.
1	Decrease traffic, decrease pollution, good exercise..
1	Downtown is dense and relatively flat. We have bike weather year-round.
1	Downtown is fairly compact, and it would be great to be able to make short trips by bike.
1	Getting more people to ride short distances & decrease automobile usage for short distances
1	Give cyclists a safer place to ride
1	Gives everyone a chance to bike rather than drive thus, reducing traffic on the roadways.
1	Go figure
1	Good for city's image; provides alternative to car for trips longer than 4 or 5 blocks.
1	Good way to get around downtown and Southside
1	Health reasons. Good Exercise and cleaner air.
1	Help revitalize the city. Parking is a pain.
1	I am ready for Birmingham to embrace the bike culture -- it is overdue!
1	I have used the BikeShare in DC on a few trips and it has been great.
1	I support all initiatives to expand and enhance public transportation and exercise.
1	Improve health
1	Increase bikers and biker awareness and acceptance
1	It is a forward thinking, healthy activity to get citizens out on the streets
1	It is a great alternative to intra-city travel and it will help keep some of us in shape :)
1	It is a progressive mode of transportation that fits the profile of an accessible community.
1	It will encourage everyone to use the bikes.
1	It will force the infrastructure to begin catering to bikes as commuter transport.
1	Less traffic, more exercise, Better way to get around
1	Low Emissions (barring Methane) Low Maintenance Healthy
1	Makes people more healthy, draws / facilitates tourists, complements existing transit system.
1	More bikes on the roads is good for all cyclists.
1	Offers a fun, unique way to get around the city
1	Parking is terrible in the city and people need to get out and be active! It's a win-win!
1	Promote exercise.
1	Promotes exercise, less pollution
1	Reduces traffic and pollution. Increase healthy living.
1	The current growth in population downtown and new venues like railroad park and regions field.
1	The lack of efficient public transportation options
1	UAB Area - parking too difficult - also Downtown parking issues would be reduced
1	Would promote a healthier lifestyle. Also would advance the need for bike routes.
1	gets car off the road and promotes exercise at the same time
1	i like see people ride a bike
1	it will cut down on congestion
1	promote exercise & reduce car travel especially for short distances
1	An alternative to driving, thereby reducing carbon emissions in the city. Exercise benefit. A progressive image for the city.

1	More bike users would improve city bike infrastructure (ie more bike lanes). It would also make bicycling downtown safer as car drivers would have to be more mindful of bike traffic. It would also greatly reduce downtown traffic.
1	A bikeshare would help eliminate some of the congested traffic in usually busy areas of a metropolitan area. And would also help encourage bicycling awareness along with a more active and healthier lifestyle.
1	It encourages livability in urban environments. People on bikes also tend to shop more at their neighborhood stores. I think having more people on bikes would help spur retail business downtown.
1	We need alternative forms of transportation to keep unnecessary car traffic down and help improve air quality. Plus it gets more people out and on the streets downtown.
1	I live in an area of the metro where biking is not reasonable. If we have it, we can ride in the Jones Valley area of Downtown to all the places to visit and still have the fun and exercise of biking on safe streets and not the highways of suburbia.
1	The are already has to much traffic and no places to park. This would be great for people who live in the city.
1	A bikeshare would allow workers and those visiting an area, particularly downtown, to ride a bike for transportation or recreation. There are plenty of places where riding a bike makes sense, but currently there are no opportunities for people to do so unless they own and can transport a bike of their own. I believe people would utilize a bikeshare program if one was available.
1	It doesn't really fit MY needs as a suburbanite who occasionally drives (or rides) into the city, but it would be useful for a lot of people who live or work in the Jones Valley and, to some extent, for tourists.
1	Birmingham has ongoing challenges with air pollution and more bicycle use could be part of a solution. Also, on a national scale Birmingham is being considered a "cool" city nowadays. Having a bike share program would contribute to this impression. Bike sharing could help create a culture of fitness which is greatly needed in Birmingham.
1	We need to move people back into the downtown area. I think this would be good for the city. Might need to put in some bike lanes as well. One reason I don't like to go downtown is the limited parking but my bike is not feasible to ride downtown. Bike share would allow people to park in one place (say railroad park) and then bike to other places (like the baseball park or five points).
1	A bikeshare program will allow citizens without bikes to experience the options that biking can provide not just in transportation but for exercise and tourism to see their own city. This will encourage citizens to support local businesses by purchasing bicycles and spreading the word about another bike friendly city in the country which can lead to increased tourism and business traffic.
1	People are moving downtown. Parking can be difficult at times. Bikeshare would be a good way for residents and workers to go to lunch, etc.
1	Not only will it continue to improve our vibrant community, but it will provide affordable and fun transportation to our residents! With the number of downtown residents growing, I think it would be a homerun to offer this service. I work downtown and would love to be able to ride a bike to Railroad Park or one of my favorite lunch spots.
1	First it would raise awareness of biking and alternative transportation, 2nd, hopefully it would work on safe biking routes, and 3rd it would give people more access to riding bikes.
1	It would be a great part of a revitalizing downtown Birmingham, great for tourists visiting the city, for people around the UAB area where parking and moving your car around is a hassle. Not so sure how successful it would be as a system for commuters.
1	Since I work downtown it would be great to ride a bike to a restaurant during lunch without having to drive your car to find a parking space or having to pay for parking. This would be a great wellness program as well.
1	Birmingham needs to become more cycling friendly. The outcomes of cities who have similar programs is very positive. It would help with traffic, pollution, and parking issues downtown. I think the biggest obstacle would be keeping the bikes safe. I also think Birmingham city would have to get involved and help keep the city safer for this bike program to work.
1	Too many people drive everywhere even if they're only going a few blocks. This gives people a quick option to get where they need to go besides driving. It will cut down on traffic and pollution and make the city more bike and pedestrian friendly.
1	I recently saw a bikeshare in Chattanooga for the first time- amazing! Bikeshare in Birmingham could cut down on lunch-hour traffic and make a weekend adventure downtown more enjoyable!
1	Birmingham absolutely needs a bike share program! There is way too much traffic, and pollution, and not enough emphasis on a greener mode of transportation. many major cities already have these in place, including Nashville, where I went last week, and I think Birmingham is way behind the curve in this.
1	Anyone who loves the outdoors and can't lug their bike around, can take a nice ride through the city. If you work downtown, or have access to a station, you can take a bike a few blocks over, and dodge traffic, therefore reducing congestion as well...

1	Bring more people into the city. Birmingham's points of interest are too spread apart for walking
1	We have lots of neighborhoods that have lots of restaurants, bars, entertainment, etc. They are too far apart to walk, but not too far to bike. Also, seeing more bikes on the road would improve the cyclist culture in the city.
1	Many times when i am in Bhm - I really want to just leave my car and bike around - you see so much more. We have these in my hometown of Copenhagen and the tourists loves it!!!
1	While public transportation in Birmingham is improving, it's still largely unreliable and therefore not an effective method of transport (especially if you're using the busses to get to work). The bikeshare is healthier than riding the bus and patrons won't have to wait on the bikes to pick them up, so, unlike the busses, riders don't have to worry if they're going to be late.
1	Cleaner air quality (hopefully). But also, it's fun, healthier, and would change the downtown environment to a more pleasant, quieter one.
1	Many other worthwhile cities already have these systems. Birmingham is growing as a sustainable, smart city--this is just the natural progression. On top of this, bikeshare is a great resource for citizens, and a cheap, environmentally-friendly way to help Birmingham become more navigable for people without crowding the roads with more cars for short trips. A bikeshare program would also attract more visitors as it is something that I look for when I travel to other cities.
1	The more people on bikes, the more drivers and nay sayers will have to accept and accommodate cyclists.
1	It makes the city so much more accessible! I believe that trying to park a car in Birmingham is a nightmare!!! A bike share program would allow places beyond walking distance an option without having to deal with the hecticness of driving and parking.
1	It is an opportunity to introduce new people cycling, To promote cycling as transportation. To have a more visible presence of bicycles.
1	I would love easy access to bikes like this without having to use my own! Rode the Chattanooga bike share and thought it was great and wished Birmingham had one too.
1	We were on vacation in Santa Momicca, CA and could rent bikes on the oceanfront and it was one of our favorite activities.
1	It will get more folks exploring mom and pop shops around town. It's also good exercise and makes for a healthy community.
1	It would get more people out on a bike if one were available to them. They might purchase their own.
1	I drive to work 30 minutes from Pinson to Downtown Bham. I stay parked in my company's parking deck all day and only leave to walk to lunch or go to class at UAB. We have a bikeshare program where I work so I sometimes check out a bike to go to Railroad Park for lunch. The bikes are only available to us during lunch, so when I leave to go UAB in the afternoons I have to drive my car. If there were a bikeshare location near me that allowed me to use a bike at any time, I would certainly park there and then bike to class if the weather was nice enough and if the route made sense.
1	I will ride to lunch and meetings everyday instead of getting my car out of the parking deck multiple times a day.
1	This would provide an environmentally friendly and reliable mode of transportation for short distance travel, something that the city currently lacks.
1	Parking is becoming difficult in some areas, and those same areas are relatively easy to bike in.
1	I think bikeshare shows the city's support of bikers, currently, Birmingham has a car-centric culture and cyclists are not respected by drivers.
1	Hard to ride to work from Vestavia but would be nice to have access to a bike for trips while I'm downtown.
1	There is not much parking downtown in convenient locations. Bike stations could be built near parking structures and event locations like Regions Park, 5 Points, Railroad Park, Lakeview, BJCC and reduce vehicle traffic. However, bike lanes will be needed.
1	Young people are moving downtown and they are the most likely demographic to use the bikes. I would pay for access.
1	This would be perfect! For those places you don't want to drive to or walk (because it is too far) you can just rent a bike!! I am currently a college student at UAB (living off campus) and since it is hard to find a parking spot I go to the first one I come to. I have no way of carrying a bike with my tiny car so if I could just rent a bike it would be just wonderful to get to class! I have been to Chattanooga and used their bike share before and it was great for just touring around the city! I have also used Miami's bike share program (not sure if it's the same thing though)! Everyone was using the bikes at both places! This is just such a wonderful idea!! I hope we can make this happen!
1	Connecting the Lakeview, 5 Points, Second Ave North and Railroad Park districts will be a key part of reshaping Birmingham for the better. A bikeshare program could be intrumental in that effort.
1	Exercise for citizens & reduce traffic (especially around the UAB area). Also, I feel like people on a bike feel more

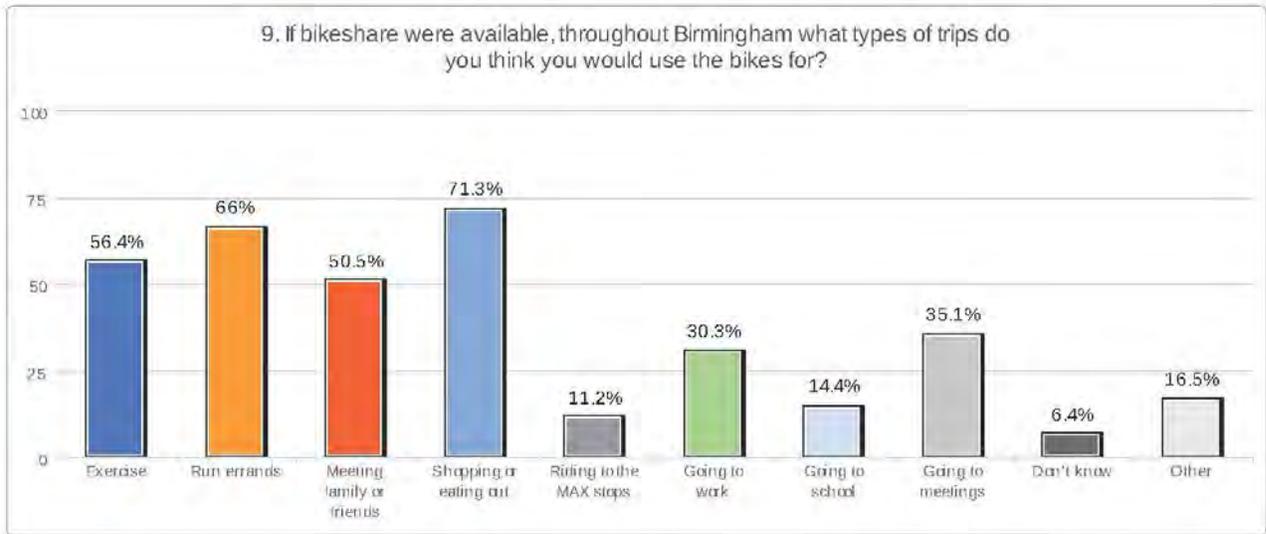
	connected to the city they're riding through & the people around them than people in a car.
1	Birmingham downtown/UAB campus is a small enough place to walk and bike, instead of driving around and wasting gas.
1	Because there is very poor public transportation. So, something that allows people to move and exercise would be great.
1	Raises awareness for bicyclists. Bicycles are the best means of transportation for up to 10 miles. Birmingham is flat. Bicycles add to the attraction of downtown B'ham, boosts tourism, allows bike tours between POI. Might teach city council a thing or two about bike lanes.
1	I can't bike to work from home, but would love to be able to bike around Birmingham (I work downtown). It would open up lunch possibilities to be able to bike to a restaurant or coffee shop too far to walk but without having to move my car.
1	Get all the damn cars off the street - ridiculous! People get in their cars to drive 2 blocks to lunch, and then have to find a parking spot. Meanwhile, pedestrians have to carefully cross streets. Cars make people rude; they are unnecessary for short trips
1	The downtown grid is VERY do-able from a walking standpoint but bike share would expand my ability to go from my workplace on 1st Avenue to locations farther afield. I don't have that need every day, but certainly on a weekly basis, I attend meetings that I would absolutely use a bike to get to if I could. Without any other quick transit opportunities, sometimes a car is the only way to get somewhere 15-20 blocks away in a time-efficient fashion.
1	For those without bikes but also without other viable means of transportation, it's a no-brainer. It's even a good idea for those who own bikes but keep them at home, and could run errands at work by bike rather than car.
1	The city is now serious about getting people to work, play, and live downtown. With the revitalization of the entertainment center, railroad park and regions park, night life on 2nd ave. n., Lakeview, Avondale, it would only help when current transit for short distances is not available!
1	I think Birmingham is becoming a safer downtown area, and ideas like a bikeshare program would reinforce positive behaviors (from the perspective of safety and health).
1	Added availability of decent bikes. Support for critical mass of cyclists and thus need for more bike paths and safer streets.
1	A bikeshare system would help to alleviate traffic congestion, help the region meet acceptable air quality standards (especially important given Birmingham's poor track record) and encourage fitness.
1	This would be a great option to use instead of getting in a car...plus it would enable people to save money on gas while getting exercise and saving on emissions.
1	I have seen it done well in other cities and I live in Highland park. To hop on a bike near one of the 3 parks in highland and Be able to bike all over the city and drop the bike back off would be great. I own a condo and have no room for my own bike, although I really want to use one. A lot.
1	Generates foot and riding traffic downtown and locations where bikes will be. Encourages visitors and residents to expand their natural walk to work- or leisure run/walk. Provides transportation for those unwilling to wait on the bus to travel a short distance.
1	To have a successful bikeshare program, we will need an infrastructure that supports biking in the downtown area. This would promote all sorts of good behavior and encourage people to be outdoors in the downtown area for recreation rather than just driving point to point. Also, it would promote wellness and continue Bham's current trajectory of appealing more and more to young people.
1	As one of the fattest cities in America, Birmingham needs exercise! Also, getting more cars off the streets will improve air quality and traffic flow.
1	We need more foot traffic downtown and more people interested in what our city has to offer. Providing a cost effective and convenient means of transportation for downtown go'ers makes sense. This is a natural next step in the revitalization project.
1	Too far to walk between downtown & UAB/Southside. Bike share is a perfect option. Also, I go to the VA Medical Center & the deck is now on 4th Ave & 22nd St. I tried walking & it took too long. There is a shuttle bus, but it is impossible to estimate how long it will take to get from the deck to the Medical Center -- it has taken me anywhere from 15 to 45 minutes. The bike would allow me to estimate accurately how long it will take to get from the deck to the Medical Center as well as let me get the exercise I need. I drive about an hour to get to Birmingham & am ready to move when I get in town.
1	Simplifying bike ownership gives people an incentive to ride instead of drive. Less people driving can help with Birmingham's terrible air pollution. Parking is an absurd problem for UAB employees. People who live just a little too far away to walk may have to drive several times further away to park in the main lot and take a bus around town which is famously not punctual. Bike modules or stations could provide an opportunity for people to connect with each other. I

	often hear of bike theft which deters me from buying a bike. I love biking and rode as a main form of transport for years in a big city. Now I can't afford a bike but would use the bike share.
1	increasing transportation options is good for everyone. Affordable, flexible transportation is needed in Birmingham. Many people cannot afford cars and the bus system is dysfunctional. Bike shares allow people to travel when they want to instead of waiting on late busses. Bike shares promote healthy living by giving people an option to cycle somewhere that would have otherwise been too far to walk to, meaning the only other option would be to ride a bus - sit on their rears- instead of exercising.
1	To help relieve congestion, reduce air pollution, make downtown a more friendly place. Many more positive things than I can possibly list.
1	B'ham needs more transit options, and bikes are a great & versatile choice. Users have control over where they go and how long they use the service - without a wait or trying to find parking. Commuters could use park and ride or bus/bike to get into and around the city center. It would energize the residents and workers.
1	Parking around birmingham is difficult and once you park your car you may have to walk a ways to your place of work. Then running around town is difficult if you have to go back to your car to travel a mile or two down the road. Being able to pick up a bike and ride from place to place would be a blessing to say the least
1	It will makes things more easily accessible for a lot of people without having to drive and worry about parking. It may stimulate the economy in areas where people won't normally go because of parking issues. Particularly downtown.
1	There would need to be some major changes in infrastructure for this to happen, but bikeshare would help remedy stress, obesity, high blood pressure, and would make folks more productive at the office.
1	To eliminate the need to take your car everywhere-- especially if going short distances. Also, helpful to shift our culture towards more active living opportunities.
1	I think a lot of people would participate if the City of Birmingham had a great program like this.
1	I currently carpool to work and I constantly wish I had a way to get around downtown during the day.
1	Birmingham is a city that has great biking potential, given wide streets and parking limitations in areas such as around UAB. However, it also has barriers such as Red Mountain that blocks many from biking from suburban residential communities to the city. A bikeshare program makes biking an accessible way to get about town while avoiding geographic barriers that may keep some from biking from one area to another.
1	To promote cycling as a viable means of transportation to many who have not considered it. To get people who ordinarily do not get on a bike on one as bikes are healthy, environmentally less harmful, reasonably safe, and most importantly FUN. It would also lessen traffic problems, pollution, and physical illness.
1	It would provide environmentally friendly, inner city transportation and help supplement Birmingham's woefully inadequate public transportation system.
1	I think that as new restaurants and night life move into downtown, more and more people (residents and tourists) are going to need an easy way to get from rrpark to lake view.
1	Like Chattanooga, Birmingham has a fairly large biking community. I believe Bike Sharing would create more bikers and make it easier for locals & tourists to visit other areas of the city with ease. For example, going to Lakeview from Avondale or from 5-Points to Railroad Park. Additionally, I believe it would demonstrate that Birmingham is a more progressive city now than in years past, and it adds to the younger vibe the city is building upon.
1	It would provide a much needed alternative form of transportation, especially closer to the city center. I see it being particularly beneficial as a connection between the southside and north sides of town, places not extremely far away, but a little too far for a casual walk.
1	People here are extremely fat, the air is very polluted (thanks to no emissions testing), and people here are poor. Bikes are much healthier, cleaner, and cheaper than cars, making bikes a particularly good match for B'ham.
1	Our public transit system is under developed. A biking transit system would help ease traffic congestion for people as they maneuver through downtown.
1	* would help birmingham's image and goal of being more progressive * would help drivers become used to bikers on the road (we're not going away) and be concerned for their safety * would encourage people to be active
1	I can't keep air in my tires. I want to have bikes ready when I want them. I love biking for exercise and quick trips would be perfect.
1	Easy street grid; relatively flat downtown area with fairly dense collection of work/living population nodes.
1	It will continue the work for revitalizing the city center. Hopefully attracting business, a bike culture, and money to downtown.
1	I think that it will encourage physical activity in the Birmingham area. It will also promote community camaraderie.
1	It's good for health, if done right it could help relieve some traffic around UAB and the downtown area.

1	It provides another means of mobility, does not pollute, promotes exercise and reduces the number of cars on the road.
1	Trips to and from bus/train terminal Taking part to social rides and outings(multiplying by popularity) for people with no bikes Out-of-towners cycling enthusiasts
1	If the bikeshare program is coupled with an educational piece that teaches people which side of the road to ride on, how to safely pass, and how motorists should share the road; then yes. Also, the city could use more bike lanes in the meantime. It would be beneficial for tourists and creating a safer feel for the downtown area.
1	It would improve the safety of bikers in b'ham and also encourage a healthier lifestyle for people here.
1	I used to use my bike for all my transportation in Columbus, Ohio. I don't feel comfortable biking here. Motorists here are very aggressive towards bikers. And a bike share would encourage more bikers which would possibly change that culture.
1	1. It's functional. 2. It encourages the use of our community more holistically, versus driving to one bar, restaurant or shop then leaving to drive somewhere else. On a bike, you feel a part of something which leads you to explore more and utilize your surroundings. 3. Also, it would encourage tourism. It gives out of towners a way to explore Birmingham's rich culture, architecture and history. 4. It promotes activity. It's no secret that Birmingham is a relatively overweight population. A bikeshare program could tap into those inactive group - similar to the way railroad park has brought together diverse groups to encourage activity and wellness. 5. Our bus system is unreliable. 6. UAB students could have more commuting flexibility even if they don't have a car.
1	I see more and more people in the Birmingham area riding bikes for pure transportation purposes. My sister lives in Raleigh N.C. where they have bikesharing it works well there because of community support and with all the bikers and bike shops in the our area we should incur the same support.
1	I think it will connect our communities, promote health and wellness, and promote tourism in the city.
1	Parking is pretty difficult in areas around downtown, southside and hospitals. Bikesharing is a great way to make short trips and run errands.
1	It is sometimes difficult to find parking near restaurants I would like to go to, and it may be too far to walk to during my lunch break. Having bikeshare will allow me to quickly access a bicycle and get to where I would like to go during the lunch hour.
1	There are a lot of great places to visit in the downtown area but you have to drive to them in which it is hard to find parking.
1	It can provide the opportunity for those of us "over the mountain" folks to commute around downtown Birmingham in another manor once we are here.
1	1. Riding a bike is FUN! 2. Parking downtown, UAB, Southside is a nightmare! 3. Folks who work downtown could hop on a bike for lunch/happy hour and not have to move their car. 4. What better way to connect Railroad Park, Downtown, Uptown Entertainment area, Sloss, Lakeview, and 5Points. 5. New \$40 million 300 unit apartment complex being designed on Highland Avenue near 5Points. Most of the trips made from these apartments could be by bicycle. 6. Riding a bike is FUN! I said that already, but its worth repeating. 7. Birmingham is FAT and could use any and all exercise readily available.
1	Birmingham is a very bikeable city, There are no really challenging inclines. Anyone can bike to their destination.
1	It will help rebuild neighborhoods and communities as people start to connect with their surroundings rather than being in their personal bubble (car).
1	Many people use bikes already around Birmingham, and that would increase if bikes were easily available. Parking is awful, especially in downtown, and during lunch and dinner times it would be nice to be able to take a bike to your destination instead of driving and finding a spot. This would be especially good for UAB students and employees- park far away, then ride a bike in.
1	I think it encourages a healthy lifestyle, provides alternate transportation, and would make the city more vibrant.
1	It creates a shift in the transportation culture and exposes people to alternative and healthy modes of transportation. It also creates a perception of an area moving in a new and positive direction.

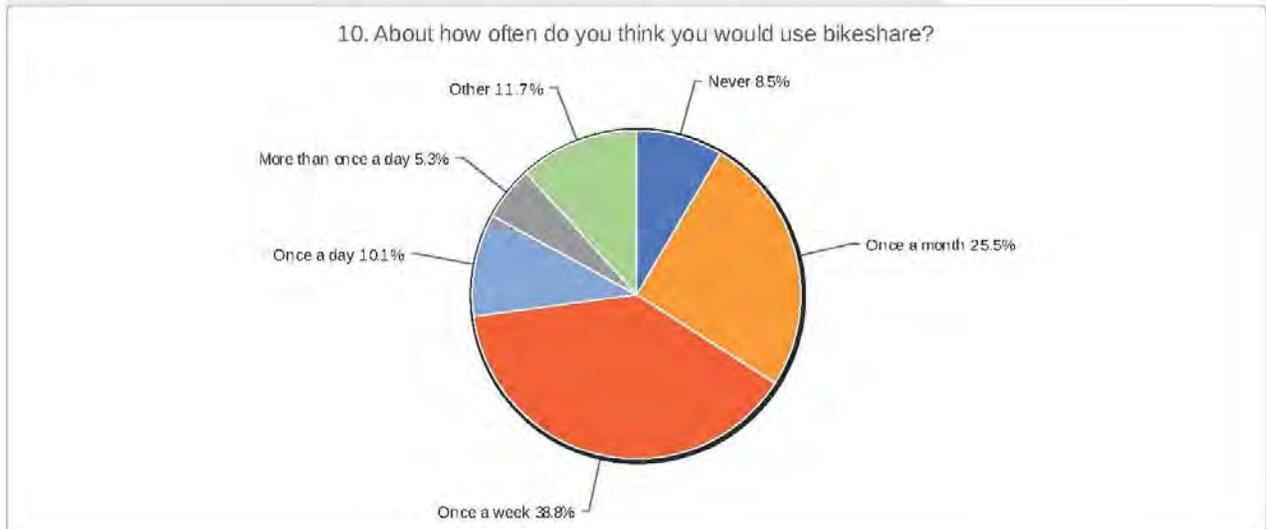
8. Please tell us why you don't think bike share is a good idea for the City of Birmingham.

Count	Response
1	I dont think enough people would ride them. No bike lanes
1	Not enough safe biking trails.
1	People don't know how to drive cars around here. I wouldn't feel safe.
1	a waste of tax dollars, let people buy their own bikes
1	Criminal element will steal and or damage the bikes. The money would be better spent making the roads more bike friendly.
1	Not sure it will be used in the way you're proposing, Most people walk or drive. There are very few bike lanes. Money would be better served elsewhere.
1	Birmingham lacks the infrastructure to support it. We don't have places for bicycles to ride safely. Most people using bikeshares aren't going to be expert riders in the first place, putting them out onto public roads and sidewalks is only going to endanger people. Furthermore, without any other public transport options people from the outlying suburbs have no reason to use a bikeshare because they already drove their car in and why pay for a bike when your car is right there. The only other demographic that would use a bikeshare are tourists and Birmingham isn't attracting a lot of those either. Birmingham already has a reputation for being dangerous. There is no need to make it more so. A bikeshare would be great if the city at least opened up more lanes and bike-specific paths in Birmingham. Otherwise its doomed to failure and it will only hurt the progress of bicycling in this city.
1	No office workers are going to ride a bike in the rain or days colder than 40 degrees. Stupid waste of taxpayer money. Jackasses!!
1	Birmingham is not bicycle friendly! For many people who are on the fence about riding bikes, the issue is our lack of safe infrastructure (bike lanes as well as driver education) rather than access to a working bicycle.
1	Funding: estimates of \$10-18K/ bike in large city programs, 10% for bike, rest for lockers, transport and web access for CC charges, unless you plan a free setup, which I gather does not generally work well.
1	there's no where to go that isn't easier to get by walking, or if its a bike ride away, there's only about four weeks of the year when the weather isn't to hot or to cold/rainy to ride
1	My opinion is that the first change is to create bike lanes on some of the major routes within the city and suburbs! Without safer/designated lanes, your only users of the system might be a few homeless people and college students. The public attitude must also be changed! I get drivers who yell out the window "Get off the road", some who harrass me by cutting close intentionally, burning out, and one sorry driver in a new silver truck keeps cutting in front of me and squirting me with his winsdshield wiper fluid on Lakeshore Drive between 6:30 and 7:00 am. Cyclists are saving gas, not taking sick days at work, and cutting down much needed healthcare expenses. BIRMINGHAM needs to take notes from PORTLAND, OR! The law requires any road worked on to have a bike lane added. I would commute from the Shops at Grand River, if I felt that some of the main backroads into Homewood were safer. After you create bike lanes and suggested routes, then this is a good idea!
1	Vandalism, Criminality in downtown Bham, waste of tax dollars. Spend the money and effort on making the roads more accomodating to bikes. Who's gonna maintain them? keep air in the tires? This is a pipe dream and I do mean "pipe".
1	Community property is nobody's property. They will just get destroyed and/or stolen and/or vandalized.
1	The driving public, in general, is indifferent to both pedestrians and cyclists here. As a runner, I constantly have to stop when a driver fails to yield the pedestrian right-of-way, particularly when the driver is making a right turn. I want it to work, but I am concerned that a spike in accidents is unavoidable.



9. If bikeshare were available, throughout Birmingham what types of trips do you think you would use the bikes for?

Value	Count	Percent %	Statistics
Exercise	106	56.4%	Total Responses 188
Run errands	124	66.0%	
Meeting family or friends	95	50.5%	
Shopping or eating out	134	71.3%	
Riding to the MAX stops	21	11.2%	
Going to work	57	30.3%	
Going to school	27	14.4%	
Going to meetings	66	35.1%	
Don't know	12	6.4%	
Other	31	16.5%	



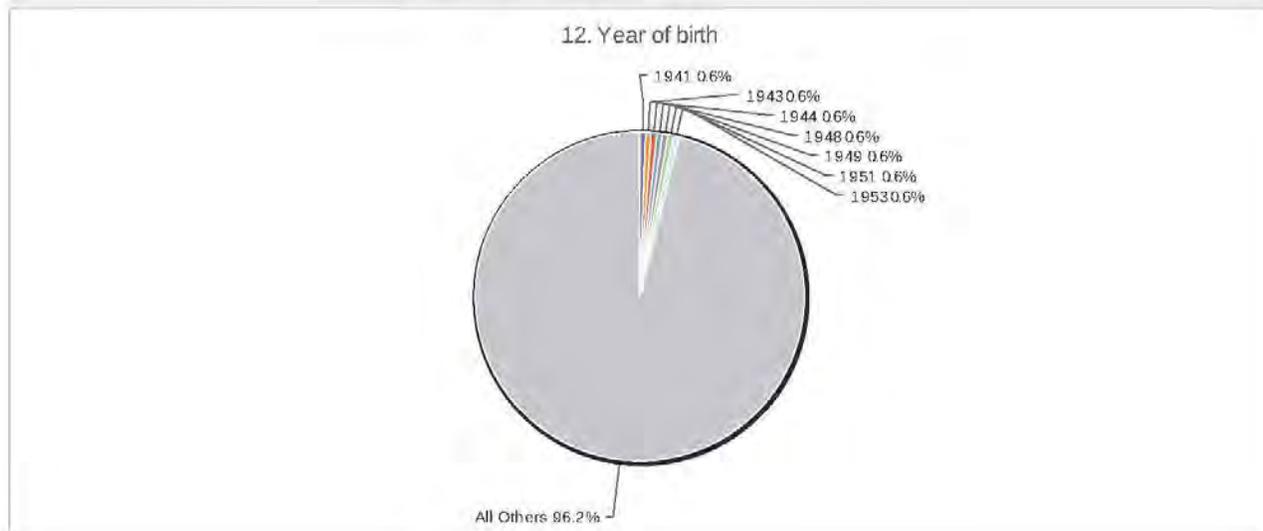
10. About how often do you think you would use bikeshare?

Value	Count	Percent %
Never	16	8.5%
Once a month	48	25.5%
Once a week	73	38.8%
Once a day	19	10.1%
More than once a day	10	5.3%
Other	22	11.7%

Statistics	
Total Responses	188

11. What price would make you likely to subscribe to bikeshare in Birmingham?

What price would make you likely to subscribe to bikeshare in Birmingham?	
Annual subscription fee:	<p>Avg. 85.31</p> <ul style="list-style-type: none"> Count: 157 Min: 0 / Max: 200 StdDev: 51.81
Weekly subscription fee:	<p>Avg. 22.42</p> <ul style="list-style-type: none"> Count: 156 Min: 0 / Max: 200 StdDev: 29.81
Daily or casual subscription fee:	<p>Avg. 14.98</p> <ul style="list-style-type: none"> Count: 165 Min: 0 / Max: 200 StdDev: 40.26



12. Year of birth

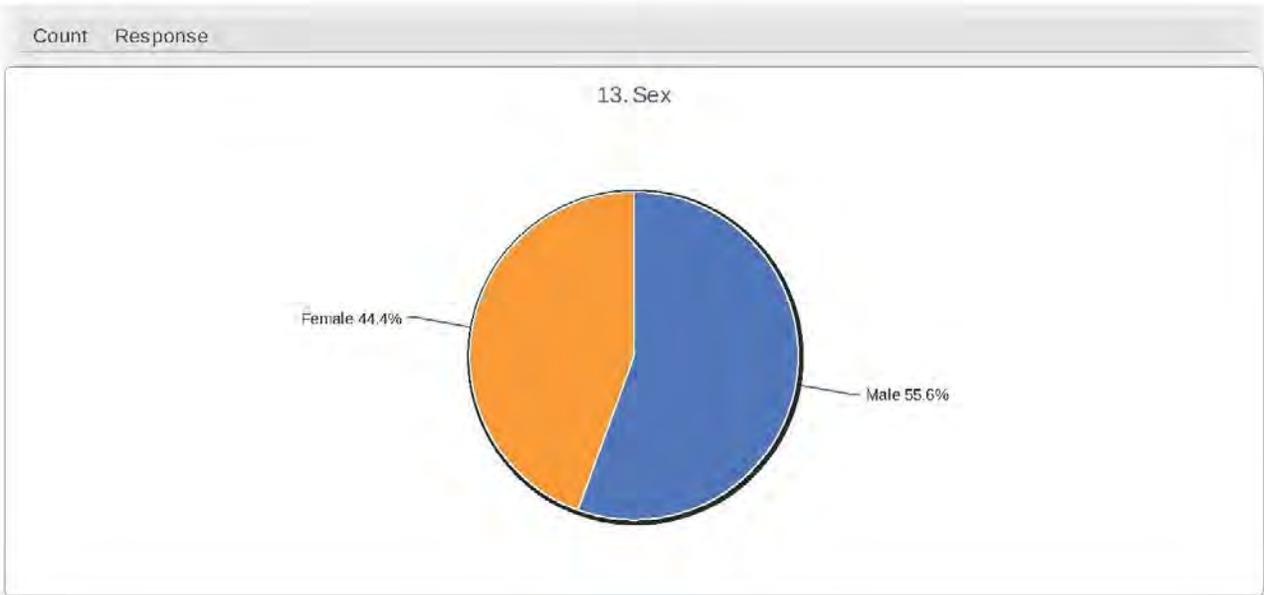
Value	Count	Percent %
1901	0	0.0%
1902	0	0.0%
1903	0	0.0%
1904	0	0.0%
1905	0	0.0%
1906	0	0.0%
1907	0	0.0%
1908	0	0.0%
1909	0	0.0%
1910	0	0.0%
1911	0	0.0%
1912	0	0.0%
1913	0	0.0%
1914	0	0.0%
1915	0	0.0%
1916	0	0.0%
1917	0	0.0%
1918	0	0.0%
1919	0	0.0%
1920	0	0.0%
1921	0	0.0%
1922	0	0.0%
1923	0	0.0%
1924	0	0.0%
1925	0	0.0%
1926	0	0.0%
1927	0	0.0%
1928	0	0.0%
1929	0	0.0%
1930	0	0.0%
1931	0	0.0%
1932	0	0.0%
1933	0	0.0%
1934	0	0.0%
1935	0	0.0%
1936	0	0.0%
1937	0	0.0%
1938	0	0.0%
1939	0	0.0%
1940	0	0.0%
1941	1	0.6%
1942	0	0.0%
1943	1	0.6%
1944	1	0.6%
1945	0	0.0%
1946	0	0.0%

Statistics	
Total Responses	182
Sum	359,387.0
Avg.	1,974.7
StdDev	12.0
Max	1,995.0

1947	0	0.0%
1948	1	0.6%
1949	1	0.6%
1950	0	0.0%
1951	1	0.6%
1952	0	0.0%
1953	1	0.6%
1954	3	1.7%
1955	4	2.2%
1956	0	0.0%
1957	4	2.2%
1958	2	1.1%
1959	5	2.8%
1960	3	1.7%
1961	4	2.2%
1962	5	2.8%
1963	4	2.2%
1964	2	1.1%
1965	4	2.2%
1966	3	1.7%
1967	2	1.1%
1968	3	1.7%
1969	4	2.2%
1970	6	3.3%
1971	5	2.8%
1972	2	1.1%
1973	5	2.8%
1974	2	1.1%
1975	2	1.1%
1976	5	2.8%
1977	4	2.2%
1978	7	3.9%
1979	5	2.8%
1980	7	3.9%
1981	2	1.1%
1982	10	5.5%
1983	9	5.0%
1984	5	2.8%
1985	9	5.0%
1986	7	3.9%
1987	6	3.3%
1988	7	3.9%
1989	6	3.3%
1990	6	3.3%
1991	4	2.2%
1992	0	0.0%
1993	1	0.6%
1994	0	0.0%

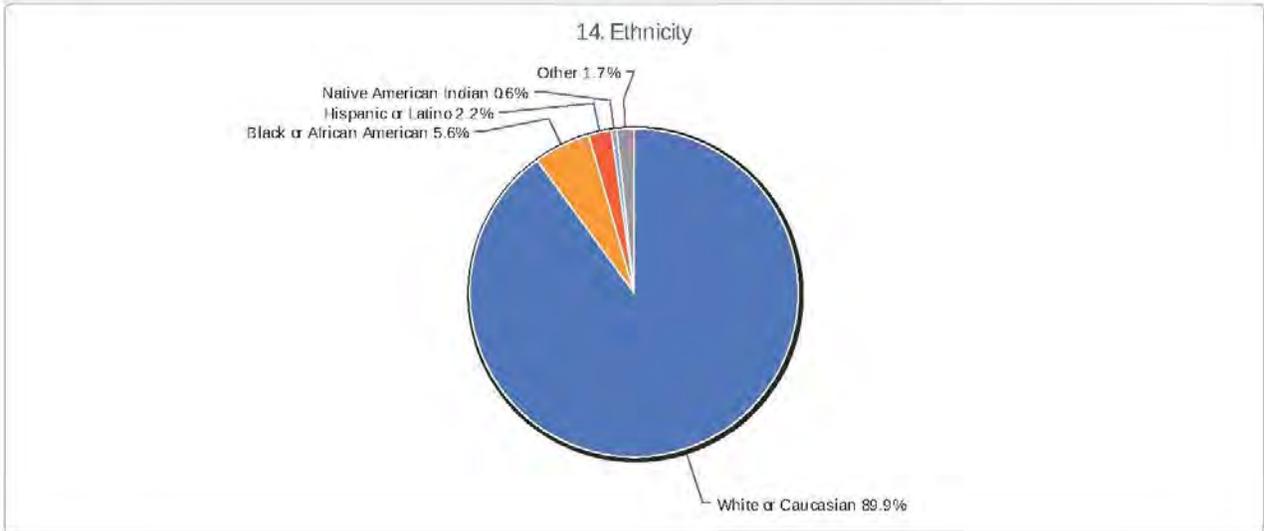
1995	1	0.6%
1996	0	0.0%
1997	0	0.0%
1998	0	0.0%
1999	0	0.0%
2000	0	0.0%

Year of birth



13. Sex

Value	Count	Percent %	Statistics
Male	100	55.6%	Total Responses 180
Female	80	44.4%	



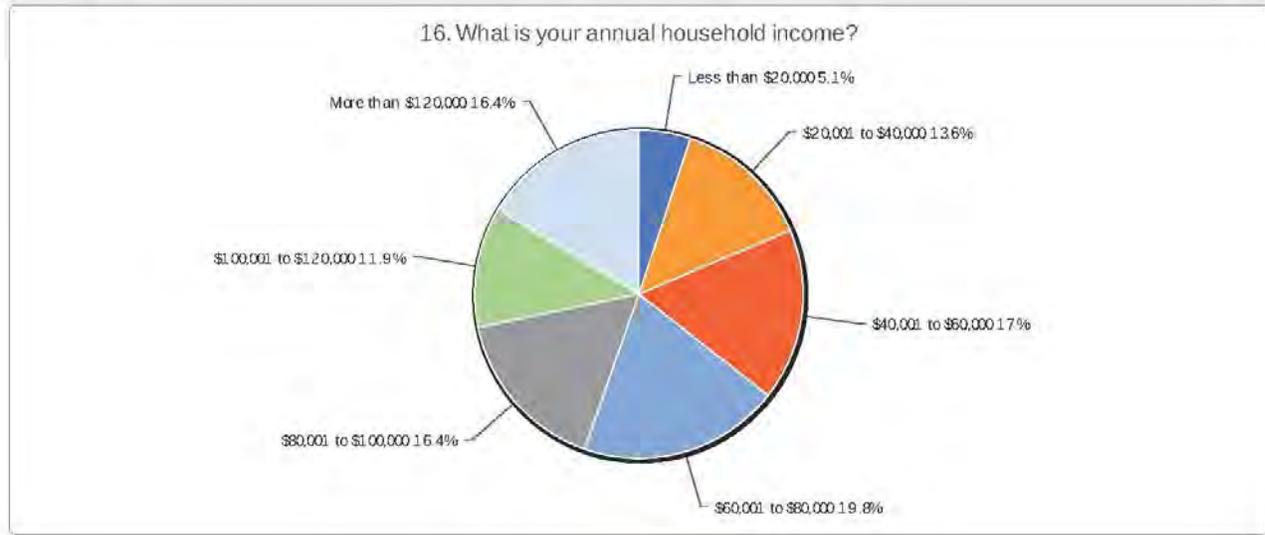
14. Ethnicity

Value	Count	Percent %
White or Caucasian	161	89.9%
Black or African American	10	5.6%
Hispanic or Latino	4	2.2%
Asian or Pacific Islander	0	0.0%
Native American Indian	1	0.6%
Other	3	1.7%

Statistics	
Total Responses	179

15. How many people reside in your household?

Count	Response
1	0
36	1
1	1234567
76	2
30	3
30	4
5	5



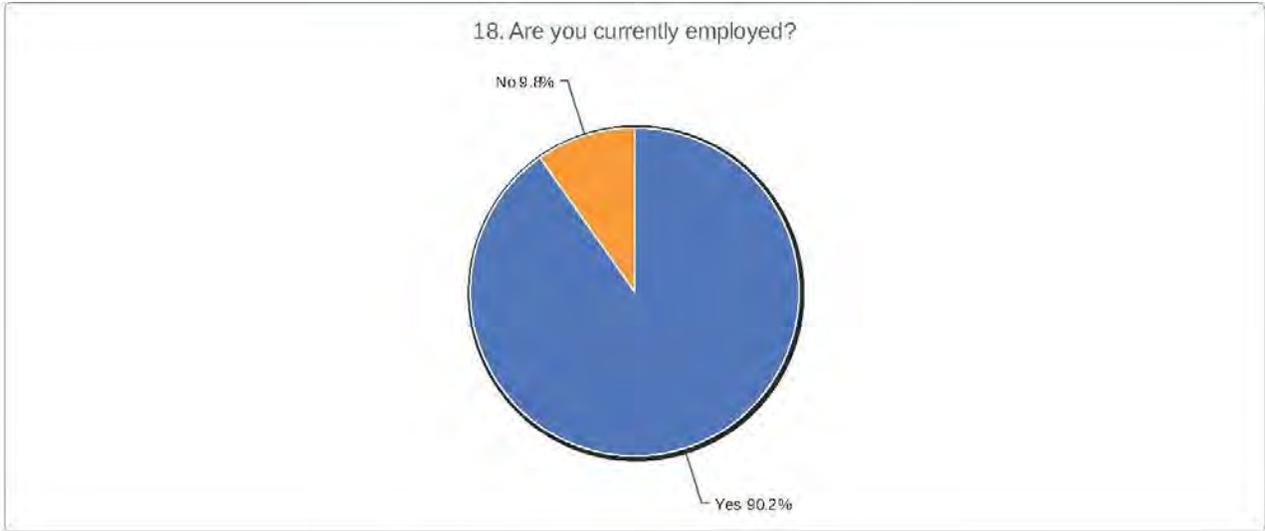
16. What is your annual household income?

Value	Count	Percent %
Less than \$20,000	9	5.1%
\$20,001 to \$40,000	24	13.6%
\$40,001 to \$60,000	30	17.0%
\$60,001 to \$80,000	35	19.8%
\$80,001 to \$100,000	29	16.4%
\$100,001 to \$120,000	21	11.9%
More than \$120,000	29	16.4%

Statistics	
Total Responses	177

17. 5-digit zip code for your home address

Count	Response
3	35007
1	35020
1	35022
1	35054
1	35062
1	35071
1	35079
1	35091
1	35094
1	35111
1	35124
2	35126
1	35128
1	35143
1	35147
4	35173
13	35203
2	35204
37	35205
1	35206
18	35209
5	35210
5	35212
8	35213
1	35214
1	35215
12	35216
1	35217
1	35218
12	35222
8	35223
1	35224
8	35226
2	35233
2	35234
1	35235
9	35242
4	35243
2	35244
1	35504
1	35578
1	35953
1	36253



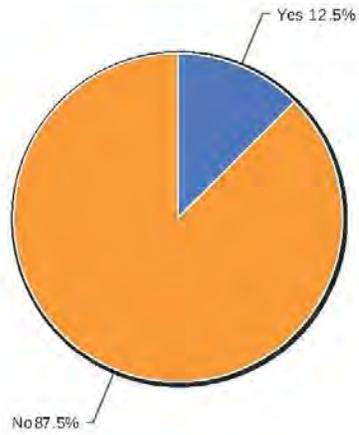
18. Are you currently employed?

Value	Count	Percent %	Statistics	
Yes	166	90.2%	Total Responses	184
No	18	9.8%		

19. What is the zip code of your place of employment?

Count	Response
2	35020
1	35071
1	35125
1	35127
1	35173
2	35201
57	35203
3	35204
12	35205
15	35209
1	35210
2	35211
1	35212
2	35214
3	35216
2	35218
6	35222
1	35223
1	35226
14	35233
1	35234
1	35235
6	35242
2	35243
3	35244
1	35254
1	35255
13	35294
1	35295
1	35401
2	36124

20. Are you currently enrolled in school?



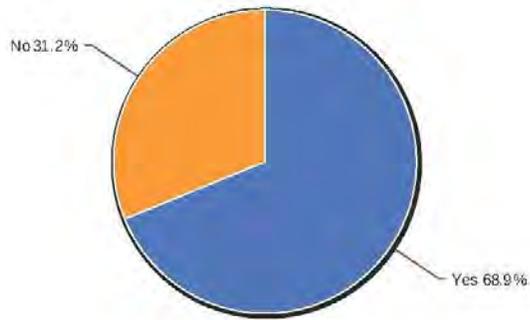
20. Are you currently enrolled in school?

Value	Count	Percent %	Statistics	
Yes	23	12.5%	Total Responses	184
No	161	87.5%		

21. What is the zip code of the school you attend?

Count	Response
1	35115
1	35203
6	35205
1	35226
3	35233
1	35235
1	35243
3	35294
2	35401
1	36265

22. Would you like to stay informed about the City of Birmingham Bikeshare Feasibility Study?



22. Would you like to stay informed about the City of Birmingham Bikeshare Feasibility Study?

Value	Count	Percent %
Yes	126	68.9%
No	57	31.2%

Statistics	
Total Responses	183