



Atlanta-Decatur Bike Share Feasibility Study

Executive Summary



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Acknowledgements

Atlanta Bicycle Coalition

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Dear Friends:

When I first heard of “3rd generation” bike share programs, with highly visible, automated kiosks powered by solar energy providing bicycles for short trips in cities around the world, I was immediately intrigued. But at the time, back in 2007, most people didn’t think Atlanta was ready for bike share.

We’d seen, in Decatur, a short-lived program called Yellow Bikes that was associated with the concept and generally considered less than successful as a bike share program (though as a bike distribution program, it clearly served its purpose). We had few and disconnected bike lanes, paltry bike commuting numbers, and a widespread belief that we were too much of a car-dominated city and region for biking to ever really take off.

Today, five years later, I’m pleased to say that is changing. City planners and elected officials are acknowledging both the needs of existing cyclists - our numbers grew dramatically over the last decade - and the desirability of attracting more people to cycling. The BeltLine is transforming the way people think about getting around, making cycling convenient, safe, and attractive to area residents and visitors. Businesses are seeing the value bicycle infrastructure adds to their bottom line and community relationships. And citizens are taking to the bike in ever-growing numbers.

The City of Atlanta opened not one, but two bicycle projects in October 2012 - a small scale but large impact bike lane connection in Midtown, and the BeltLine Eastside Trail, which opened to immediate popularity and much fanfare. Atlanta is home to two Bicycle Friendly Universities (Georgia Institute of Technology and Emory University), and the City of Decatur was named a bronze-level Bicycle Friendly Community by the League of American Bicyclists. From the presence of a bike share start up on the campus of Georgia Tech and early inroads into bike sharing on the Emory campus, to the location of an international bike share company US headquarters in Atlanta, to the phone calls and emails we get from local entrepreneurs wanting to invest, all signs indicate strong interest in bike share.

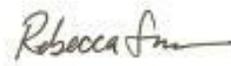
For all of these reasons and more, I think we’re ready for bike share now.

This report, funded by a grant from the Atlanta Falcons Youth Foundation, illustrates the how, when, why, and where of the prospects for bike sharing programs in the cities of Atlanta and Decatur. It will be presented to city and community leaders, cyclists, businesses, and the public to raise awareness of what bike sharing could mean for the city.

Paired with robust investments in much-needed bicycle infrastructure, bike sharing will help the city achieve goals in the arenas of sustainability, economic development and tourism, active transportation mode share, and talent retention.

It will increase demand for bike facilities, especially the newer designs that provide greater separation from traffic such as cycle tracks, spurring huge increases in biking for transportation in other U.S. cities after decades of success in Europe.

At this point it’s not a question of if, but when, the Atlanta region will invest in this dynamic concept. Cities around the world, and increasingly, the United States, are not waiting for us.



Rebecca Serna
Executive Director, Atlanta Bicycle Coalition

Executive Summary

Is bike sharing feasible in Atlanta and Decatur?

Bike share is a proven technology and form of public transit that is successful in cities around the US and the world. Cities are looking for innovative transportation solutions that meet the needs of a 21st century economy, and bike share is one of these solutions.

Mobility, affordability, community health, environmental impacts, convenience and safety are all elements by which today's transportation systems are measured. Bike share addresses all of these by providing a cost-effective, convenient and healthy mode of transportation.

The goal of this study was to use best practices and experiences from peer cities to examine how and where a bike share system could operate in the cities of Atlanta and Decatur.

Questions that were addressed as part of this study include:

- What are the existing conditions and context for cycling in Atlanta and Decatur?
- Where in Atlanta and Decatur would a bike share system be most successful given the demographics, development patterns and existing infrastructure?
- What is a feasible size and service area for a bike sharing system in Atlanta and Decatur?
- How can bike sharing be funded and operated in Atlanta and Decatur?
- What policies or regulations need to be changed or adopted to support bike sharing?

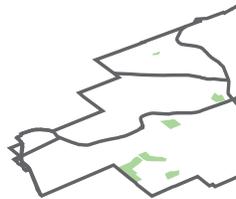
Performance Summary

From the community suitability analysis conducted for this study, three service areas are identified for phase 1 implementation. These three areas include Buckhead, Downtown Decatur and the Atlanta Core, which includes Midtown, Downtown, West End and the adjacent neighborhoods.

Combined, these three service areas cover 14.1 square miles, or 15% of the area of Atlanta and Decatur. 1 in 4 residents 18-64 years old of Atlanta and Decatur live within these service areas and 1 in 2 employees work there. These numbers show that the proposed phase 1 service area would provide access to a bike share system to approximately 25% of residents age 18-64 and 50% of workers.

Additionally, these numbers do not include the people who live or work outside these areas but still visit for work, leisure or other activities. Combine these potential users with the millions of visitors and tourists who visit Atlanta and Decatur every year, and bike share could easily meet the transportation needs of a wide range of people.

The suitability and demand analysis estimates these three service areas can support 570 bikes and 57 stations. These system metrics would make Atlanta and Decatur's system equal, in terms of system density, to systems in the Washington D.C. region and Minneapolis-St. Paul, which have two of the largest and most successful systems in the U.S.



3

proposed Phase 1 Service Areas

1 in 4

residents 18-64 in Atlanta and Decatur live within the Phase 1 Service Areas

57

proposed number of stations

1 in 2

employees in Atlanta and Decatur work within the Phase 1 Service Areas

\$6.0 - \$12.9

estimated cost, in millions, for the proposed system size over six years.

570

proposed number of bikes

14.1

area, in square miles, of Phase 1 Service Areas

It is worth noting that the proposed system for Atlanta and Decatur has a smaller geographic coverage area than peer city systems in the Washington D.C. region and Minneapolis-St. Paul. This condition is largely the result of development patterns and population and destination density. Compared to other cities with successful bike share at the scale being proposed, Atlanta and Decatur have lower population and destination densities.

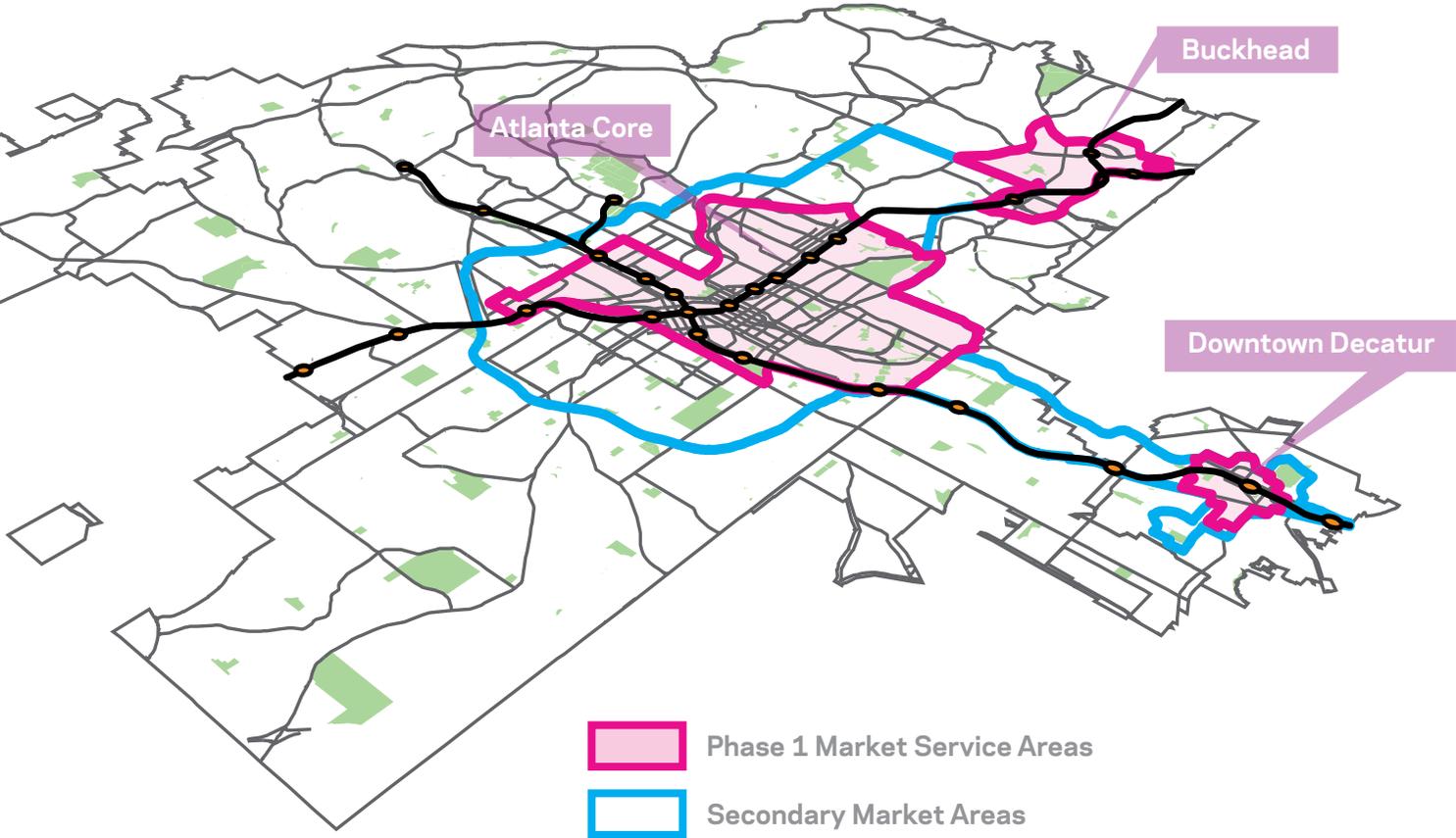
This being said, Atlanta and Decatur have adopted policies and have proposed projects that support the community design and density that makes bike share successful. That is why the Secondary Market Areas are identified. These areas, such as the areas along the Atlanta BeltLine’s southern and western sections, are envisioned to have walkable, mixed use development served by existing and future transit. This type of environment is ideal for bike share and bike share system expansion and growth can occur in tandem with these areas as they redevelop.

A financial analysis of the proposed system metrics was also completed to develop initial cost estimates. The question asked was, ‘How much would a system of this size cost to build and operate?’ Additionally, the analysis was calculated with two bike share models. One model was a fixed station system, similar to Capital Bikeshare in the Washington D.C. region. The other model was a flexible station model, similar to viaCycle at Georgia Tech.

The analysis estimates that capital and operational costs for the proposed system size ranges from \$6.0 to \$12.9 million over a six-year period. For comparison, these figures are approximately equal to double the cost of one bus route over six years, which costs approximately \$6.1 million.

To finance a system of this size, capital and investment revenue will need to be secured. User-generated fees are not enough to cover the full cost of the system. Grants, sponsorship and other investment strategies can help fill this gap.

Addressing these requirements and other components of bike share are discussed in greater detail throughout the rest of the report. Other cities have proven that bike share is feasible and this study shows it can work in Atlanta and Decatur. It is up to the community to decide if bike share is right for Atlanta and Decatur and, if so, how to make it a reality.



Bike share is...

Bike sharing is as dynamic as the city it serves. With stations and bikes distributed around the city, users can conveniently access where they want to go when they want to go.



...a transit option.

Bike share is two-wheeled public transportation. It also compliments traditional public transportation service. Bike share helps transit riders cover what is often referred to as the "first and last mile" of a transit trip. Rather than walking the last several blocks to or from a transit station or bus stop, bike share users can cover the equivalent distance in half the time it takes to walk, a convenience that reduces travel time for transit riders.



...innovative technology.

The Internet and mobile technology make bike share possible. Bikes, stations and the web technology that makes bike share work provide users with convenient and real time access to the system. The technology also allows users, operators and owners access to real time information and performance data about the system.

...bike parking infrastructure.

A bike share system gives people the convenience of not having to own a bike or have a place to lock it up at the beginning or end of a trip. Those needs are built in to the system.



...a catalyst.

Cities that have implemented bike share can attest to its transformative effect. Suddenly, everyone is a potential cyclist in the city. It changes people's perspectives about cycling and how they get to destinations. It also creates demand for better cycling conditions and infrastructure.



...a source of green jobs.

Bikes use people power, rather than greenhouse gas emitting fuel, to operate. Plus, they get people active while getting from point A to point B. Combine this with the fact that bike share systems need people to operate and maintain the system, such as bicycle mechanics, and you have a transportation system that offers green job opportunities for the community.



...a positive city image.

The image of a 21st century city is one that is active, vibrant, accessible and social. Bike share supports these goals by providing a healthy and convenient transportation option.



...a connector.

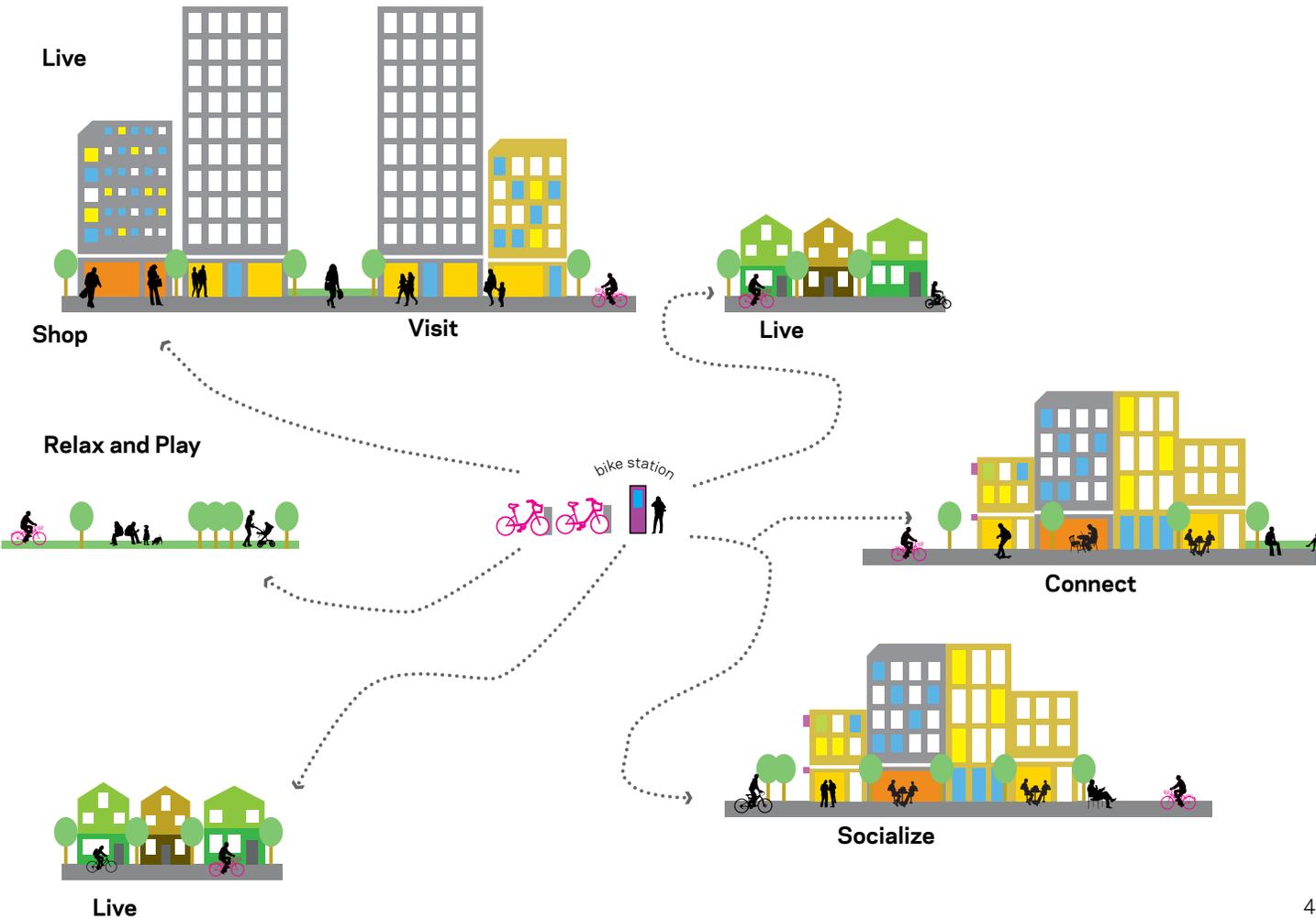
Bike share is a flexible form of public transportation. Rather than have to wait for a train or bus that follows a fixed route, bike share users can customize their route and destination based on where they want to go.



...affordable.

For the cost of one to two tanks of gas or one monthly MARTA pass, someone can have a yearly membership to bike share. Plus, daily passes for visitors or tourists are comparable to MARTA daily passes. Bike share can be a cost-effective alternative to renting a car, taking a taxi or having to pay to park.

Work



Proposed System Metrics

To provide more detail about the proposed bike share service for the cities of Atlanta and Decatur, the three tables on this page have been included. The table at right provides information about a bike share service that covers both cities. The tables below include information for the phase 1 service areas unique to each city. The tables include information describing the proposed system performance metrics, demographics and estimated costs. Additionally, the map on the following page shows the three service areas proposed for phase 1 implementation.

Atlanta and Decatur by the Numbers

Phase 1 Service Areas - Buckhead+Atlanta Core + Downtown Decatur

Service Area Population 18-64	88,958
% of Atlanta and Decatur Residents 18-64	28.8%
Service Area Employees	223,855
% of Atlanta and Decatur Employees	46.9%
Service Area	14.1 sq mi
Bikes	570
Stations	57
Station Density	4 per sq mi

Estimated Costs Over Six Years

Estimated Capital Costs	\$1.7 - \$3.7 million
Estimated Operations Costs	\$4.3 - \$9.2 million
Total Estimated Costs	\$6.0 - \$12.9

Atlanta by the Numbers

Phase 1 Service Areas - Atlanta Service Areas (Buckhead+Atlanta Core)

Service Area Population 18-64	86,831
Service Area Employees	222,022
Service Area	13.5 sq mi
Bikes	540
Stations	54
Station Density	4 per sq mi

Estimated Costs Over Six Years

Estimated Capital Costs	\$1.6 - \$3.5 million
Estimated Operations Costs	\$4.1 - \$8.7 million
Total Estimated Costs	\$5.7 - \$12.3 million

Decatur by the Numbers

Phase 1 Service Areas - Downtown Decatur Service Area

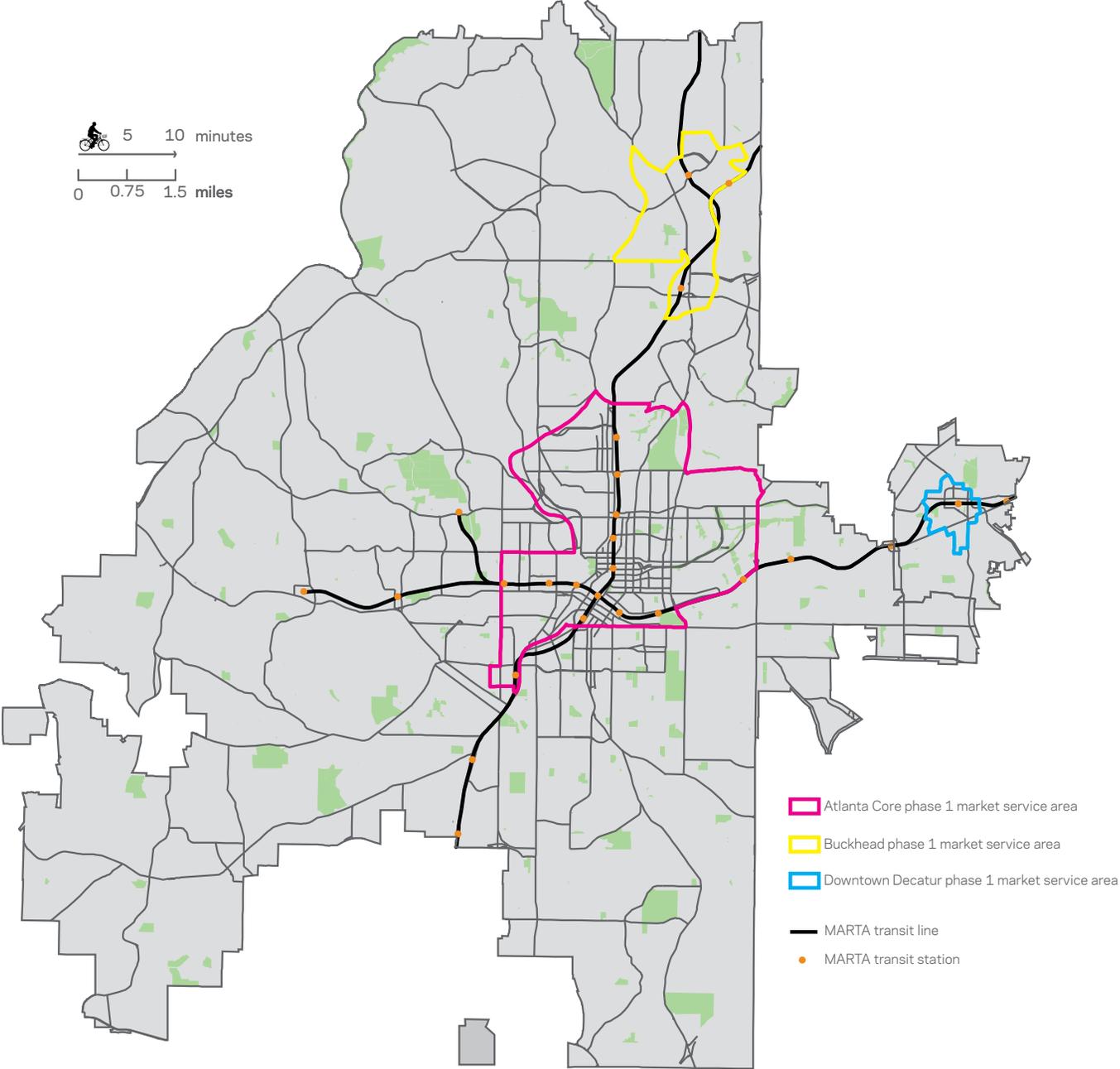
Service Area Population 18-64	2,127
Service Area Employees	1,833
Service Area	0.6 sq mi
Bikes	30
Stations	3
Station Density	4 per sq mi

Estimated Costs Over Six Years

Estimated Capital Costs	\$100k - \$200k
Estimated Operations Costs	\$200k - \$500k
Total Estimated Costs	\$300k - \$600k



Proposed Phase 1 Service Areas



What are the next steps?

This study provides a menu of options for Atlanta and Decatur to consider and should serve as a guidebook for future decision-making about bike sharing. Each bike share system in operation is unique and has been adapted to meet local transportation goals, community needs and local governance standards.

Moving forward, Atlanta and Decatur should use this study as a starting point to define the type of system desired for the community. There are many decisions and questions that need to be explored further or in more detail before each city implements a bike share system. Some of these questions include:

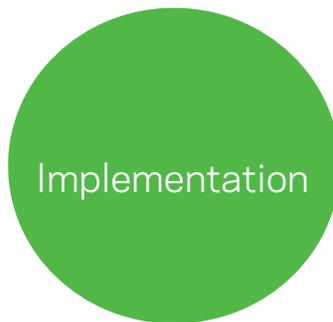
- What are the community goals for bike sharing?
- What type of bike share business model is appropriate for each city?
- Who should own and operate a bike share system?
- How and where should bikes and stations be located?
- What, if any, infrastructure improvements are needed?

Answers to these questions and others should be developed through community conversations and a competitive bidding process with interested bike share vendors. At the end of the day, this study is meant to inform, educate and start a community dialogue about bike sharing and the future of transportation in Atlanta and Decatur.

To help guide next steps in the conversation, the diagram below summarizes the phases of planning, implementation and performance assessment that are recommended for a bike share system. This study represents step one of many just in the planning stage. The community will have to decide what the actual next steps are. Whatever direction the conversation goes, the process should be open, transparent and tied to planning precedents in Atlanta and Decatur.



- Host community conversation about bike share
- Develop community goals for bike share
- Select business model
- Identify and secure funding
- Procure vendor and operator
- Consider issues of equity and access
- Consider infrastructure improvements



- Select service hours and seasonal availability
- Program marketing and sustainability
- Address safety and livability considerations
- Develop bicycle redistribution strategy
- Develop theft and vandalism protocols
- Start riding



- Track system performance by analyzing data
- Integrate system with transit network
- Improve bicycle visibility with marketing and education campaigns
- Promote healthy living
- Continue to calibrate system to improve accessibility based on performance, user preferences and community goals

Bike Share Technology Comparison

The two types of bike share technologies analyzed as part of this study are a fixed station system and a flexible station system. The differences between the two types of systems are associated with their technology.

Fixed Station Summary

A fixed station system has stations with a variable number of docks and a kiosk at each station location. The locking mechanisms are designed so that a bike needs to be locked to a dock in order to be returned to the system for someone else to use. The kiosks allow members and casual users to access the system, make payments and do other functions.

Other key features include:

- Stations provide predictable locations for users to locate bikes, checkout and return bikes, and sign-up for the service.
- Stations require some construction work to install.
- Anyone with a credit card can sign up to use the service at a station without the use of personal mobile technology, such as a cell phone or smartphone.
- Bikes must be returned and docked at stations to be returned to the system for others to use.

Flexible Station Summary

A flexible station system integrates most of the enabling technology into the bike. The locking mechanism is integrated into the bike so they can use standard bike racks rather than more expensive docks. Access to the system is managed exclusively with mobile technology, such as a cellphone or smartphone, rather than a kiosk.

Other key features include:

- Bicycles can be returned anywhere within specified drop-off areas, which offers a greater diversity of areas to return bicycles.
- The system requires no construction work for stations, other than the installation of standard bicycle racks.
- Anyone with a mobile device, such as a cellphone or smartphone, can use the service.

Major Differences and Trade-offs

The two main differences between the technologies is how users access the system and signage. These differences impact how the systems are installed and how customers interact with the service.

In terms of access, fixed station systems with kiosks allow anyone living or visiting an area with bike share to walk up to a station and sign-up to use the system at that moment. This is an important feature because it supports the spontaneity of bike share. Additionally, it increases the convenience of signing up for casual users, which are often a significant revenue source for bike share systems.

By comparison, the flexible station model analyzed depends exclusively on customers' mobile technology to access the system. Additionally, the model requires users to sign-up online and establish an account before using the system. The requirement adds an extra step before customers can begin using the service.

Another component of access is the physical location of bicycles. Fixed stations, by design, require bikes to be checked-out and returned at specific points and locked to a dock. This design feature reduces the flexibility of where bikes can be accessed or returned, but it also increases the predictability of where bikes are located. This predictability can improve the convenience of locating bikes for customers and operators.

With flexible stations, locating and returning bikes offers greater flexibility for users. Without the requirement to return a bike to a dock, flexible station bikes can be locked to any street furniture within the designated drop-off zone. While this can be convenient at the end of a trip for customers, it also carries the potential that bikes are scattered. This scattering can complicate retrieval of bikes for customers and operators.

The signage considerations are related to user information, visibility and advertising capacity. With a fixed station system, components of the station include a kiosk and map frame. These features create space for important user information, such as a system map and safety information. These features also increase visibility for users to identify stations while riding or to attract casual users, such as tourists. In terms of advertising, the added surface area provided by kiosks and map frames provides additional space for advertising revenue. For the purpose of this study, the cost of map frames were included for both systems.

It is important to note that flexible stations can incorporate some of the access and signage features of fixed stations in order to improve visibility and access. However, these accommodations will likely increase costs associated with a flexible system and the stations will begin functioning more like fixed station systems than purely flexible station systems.

Cost Comparison

These technology differences are reflected in the estimated costs developed as part of this report. The estimated cost for a flexible station system is \$6 million dollars and \$12.9 million dollars for a fixed station system. These figures include estimated capital and operational costs over six years for the proposed phase 1 service areas.

Flexible station systems are able to reduced costs by incorporating many of the fixed station features into the bike itself. While flexible station models can reduce costs because of their technology innovation, there are trade-offs associated with meeting user needs. These trade-offs should be considered when selecting a bike share vendor and technology. For more on the differences in technology and their estimated costs, please see the *Paying For Bike Share* chapter of this report.

Selecting Bike Share Technology

Given the bike share technology considerations, it is recommended that the cities of Atlanta and Decatur define the system components desired for their bike share service and include the technology requirements as part of a solicitation for interested bike share vendors and operators. This type of approach will ensure both cities get a system based on their needs rather than allowing a particular vendor or technology define the type of system to be used. More information about using a solicitation process is below, included in the table on the following page and in the *Recommendations* chapter of this report.

Selecting a Vendor and/or Operator

The bike share industry has grown exponentially over the past five years in the U.S., and there are now more operators and vendors to choose from. Five years ago, there were one or two vendors and operators capable of providing a bike share system at the city-wide scale. Today, there are several vendors and operators to choose from including viaCycle, which was developed locally at Georgia Tech.

This diversity of vendors and operators means that the cities of Atlanta and Decatur have more options when developing a bike share system. To take advantage of this diversity and the advancements in technology, it is recommended that both cities select a vendor and/or operator through a competitive bidding process. This process can be done jointly or separately.

Most cities use what is referred to as a Request for Proposal (RFP) or Request for Qualifications (RFQ) based on that nature of what is being requested. With either procurement approach, the owner of a contract, in this case one or both cities, issues a formal statement asking interested bidders to submit a proposal. The cities then select the best proposal from those submitted to provide bike share services.

An RFP or RFQ for bike share should include information provided by Atlanta and Decatur and a request for information to be provided by proposers. The table on this page provides a summary of the types of information that should be provided by the owner and the type of information that should be requested from the proposers. Additionally, the *Recommendations* chapter of this report provides more detail about what to include in a call for bids.

Example Bike Share Request for Proposal Components

RFP Segment	Component	Example Information and Language
Information to be provided by the City	Recommended Bicycle Components and Station	The bicycle design should include the following: Step-through frame; adjustable seat; front basket; high stability kickstand; heavy-duty material; chain guard; bicycle bell; secondary lock; disc brakes; lights (automatically activated); fenders; multiple gears; puncture resistant tires; etc. Bicycle-specific parts (non-interchangeable with other bicycles) Other theft/vandalism deterring methods (GPS tracking, etc.)
	Overview of Program Scope	Program scope information should include: Size of service area; Phasing; Amount of bicycles/stations
	City's Provision of Right-of-Way	Example text: The City will assist in the provision of public space in order to site bike share stations. The City will maintain all rights to determine appropriate siting of the stations.
	Required Hours of Operations	Example text: The system will operate 365 days a year, 24 hours per day. The system must be able to completely shut down should weather or other incidents require its closure.
	Specific Performance Standards	Example text: 95% of bikes must be operational at all times. The operator is required to share data regarding the usage of the system, as outlined in the RFP. Any vandalism to the system must be remediated by the operator within a specific time period. Distribution standards for stations and bicycles will be set between the operator and the City i.e. percentage of time station spent full/empty, etc.
	Outlined Contract Incentives and Adjustments	Specify revenue sharing or specific incentives for private operators to provide appropriate accessibility and mobility for users. Reserve the right to adjust the contract in the future in terms of expansion, termination, etc.
	Required Operator Qualifications	The City should include specific requirements for vendor experience in mobility services and customer service.
	Provision of Important Reference Documents	The City should provide documents that describe the service areas and document other important information needed to develop a response to an RFP including: Feasibility study information; Maps of existing bicycle infrastructure, transit service, proposed target implementation zones, and other relevant data; GIS data as needed
	Implementation Targets	The City should outline specific targets for implementation such as: The desired timeline for implementation should be within 6 months of the awarding of the contract.
	Information to be provided by respondents	Maintenance Plan for Bikes and Stations
Plan for Bike Redistribution		Will a vehicle be needed? How many people will be employed?
Method of Data Collection and Sharing		Operator must provide the performance information to the city on a monthly basis such as: Vehicle miles traveled (per bicycle); Number of trips and duration; number of customers per membership types; Number of bikes in fleet at the end of each month; Etc.
Comprehensive Marketing/Branding Plan		The proposal should include the administration of an annual customer/user survey.
Detailed Financial Plan		The financial plan should include elements such as: Estimated capital and operational costs; Estimated usage rates; Charging scheme and fee structure (including deposits for bicycles); Revenue projections, including user revenue, advertising, etc.; Value of assets; Infrastructure replacement costs
Details of Equipment and Infrastructure		Accurate and specific details about system infrastructure should be provided such as: Bikes and locking mechanism; Customer interface; Back-end system/Call center; Website
Theft and Losses		Example Request: A detailed and straight forward plan for combating theft must be outlined. A detailed plan for dealing with theft and major vandalism must also be outlined, as well as potential costs incurred.
Plan for Liability/Insurance Coverage		The liability and insurance coverage should address indemnification for the city and operator.
Incorporation of Innovative Design/Operational Features		Example Request: Integration with existing transit service is a highly desirable feature for the bike share system. A modular system that requires minimal digging and tie in to utilities is highly preferred. A comprehensive plan for educating users is highly desirable. The ability to provide access to low-income residents is highly desired and alternative payment and deposit options should be considered.

Source: Philadelphia Bikeshare Concept Study, 2010



For better cycling. For a better city.