



NEW ORLEANS BIKE SHARE FEASIBILITY STUDY & BUSINESS PLAN

Final Report

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New Orleans Regional Planning Commission

The Regional Planning Commission for Jefferson, Orleans,
Plaquemines, St. Bernard, St. Tammany and Tangipahoa Parishes

City of New Orleans

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CITY OF NEW ORLEANS
Michelle J. Lauchon, Mayor

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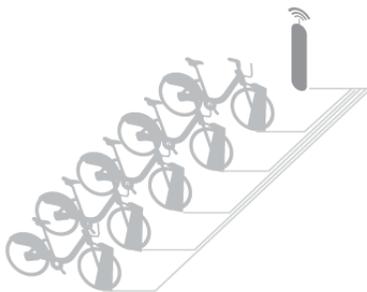
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EXECUTIVE SUMMARY

Drawing from recent successes in cities across North America, bike share has been identified as a tool to meet resident, worker, and visitor mobility needs. It supports multiple ongoing programs in the City of New Orleans, including active transportation, economic development, public health, and equity initiatives. Rooted in the momentum of these initiatives, this New Orleans Bike Share Feasibility Study and Business Plan examines the feasibility of a bike share system in New Orleans and makes recommendations based on lessons learned in peer cities. The New Orleans Regional Planning Commission (RPC) and the City of New Orleans jointly funded this Bike Share Feasibility Study and Business Plan as a result of a high-level bike share study produced by Bike Easy and a 2013 EPA Building Blocks for Sustainable Communities technical assistance workshop. The RPC and the City recognize the ability of bike share to serve as a reliable transit service, a tool for resident and visitor circulation, and a way to better connect people to RTA's streetcar and bus network.

The unique constraints, opportunities, and needs of New Orleans residents necessitate an in-depth look at whether an equitable and well-served bike share system could be operated and where. This final report identifies a recommended implementable service area, a sustainable business model, funding opportunities, and implementation considerations with strong emphasis on equitable access and removing barriers to bike share. The study considers the very real challenges of implementing a new transit system and highlights factors that will impact the viability and success of bike share in New Orleans. This feasibility study is unique from other bike share analyses in that it evaluates the costs and tradeoffs of two system types: a traditional station-based, smart-dock system (Scenario 1) and a hub-based, smart-bike system model (Scenario 2).



Scenario 1: A traditional dock-based system with technology built into the docking stations



Scenario 2: A hub-based smart-bike system with technology built into the bicycles themselves

In addition to the more recent initiatives, bike share will also benefit some of New Orleans' more established, highly visible community assets. The numerous lively entertainment districts attract residents and visitors every week of the year. Events such as Mardi Gras, the New Orleans Jazz and Heritage Festival, and Essence Festival are also enjoyed by visitors and residents alike. While these events are part and parcel of the City's cultural backbone, their demand for access create immense pressure on the City's already taxed street network and transit system. Traffic congestion, limited parking supply, and slowly improving transit service levels could be mitigated by a bike share system. As a new mobility choice—especially one with 24-hour service—bike share would give people

a flexible, low cost transportation choice that does not require the construction of new parking garages or clog the street network.



Image from Visit Indy

WHAT IS BIKE SHARE AND HOW COULD IT BENEFIT NEW ORLEANS?

Bike share is a low-cost, flexible public transportation service that provides on-demand access to a network of publically-rentable bicycles. Depending on the type of system employed, public bicycles are distributed across a defined service area at fixed smart docking stations locations, hub locations, or individual public bike racks. Due to the point-to-point nature of bike share, this form of public transportation generally accommodates shorter trips that replace less efficient auto and transit trips (trip lengths average between 1 and 3 miles).

With over 30 systems operating in the United States as of December 2014, and over one hundred more in planning or pre-implementation stages, bike sharing is the fastest growing form of public transportation in the United States. No other form of public transportation is able to unlock a wide range of community benefits—such as local environmental health, energy sustainability, quality of life, public health, and economic activity—for the same modest level of capital and operating investment.

There are myriad benefits of developing a citywide bike share system including those related to increasing options for affordable transportation, improving transportation efficiency, supporting last mile connections to and from transit, improving health indicators, furthering environmental sustainability, creating jobs, and boosting economic productivity and regional competitiveness. Based on the anticipated ridership in New Orleans, the following environmental, economic, and health-related benefits can be achieved:

- Provide a mode of transportation for the 9% of New Orleans residents without a vehicle available
- Directly create 14-28 new jobs through the New Orleans’ bike share program
- Burn 58 – 70 million calories each year
- Burn 16,500 – 20,000 pounds of fat each year
- Reduce 1.7 million vehicle miles traveled annually
- Eliminate 1.5 – 1.9 million pounds of carbon from entering the atmosphere every year
- Increase net retail spending at businesses immediately adjacent to bike share stations by \$125,000-\$510,000 (conservative estimate)
- Save users \$1.0 – \$1.2 million in spending every year due to reduced driving

IS NEW ORLEANS READY FOR BIKE SHARE?

Based on the experience of existing bike share systems and their metrics for success, New Orleans is well-equipped to support a successful and sustainable bike share system. A high-level feasibility determination based on known bike share demand factors is presented below and presented with more detail on Page 3-17. These factors include urban form factors (population, employment and destination density, and amenities such as parks and programs), visitor population and hotel capacity, policy and planning support, political support, partner availability, topography, weather, bikeway availability and quality, investment, and advertising potential. New Orleans’ dense linear development pattern, substantial visitor population, annual major events, supportive policy and planning environment, and need for improved transit services factor into the city’s readiness for bike share. While bikeway development in New Orleans is gaining momentum, the dense network of low-volume, low-speed neighborhood streets factor into New Orleans’ bikeability even in the absence of improved/designated bikeways. Strategic bikeway development and improved wayfinding is required to encourage broader levels of bicycling and bike share use in the future.

Figure 1 Bike share readiness

What makes bike share work?	Readiness Level
Urban form	Medium-High
Visitor population and hotel capacity	High
Major Events	High
Policy and planning support	High
Political support	Moderate
Partner availability	High
Topography	High
Weather	Moderate
Sponsor potential	Moderate
Transit network integration	Moderate
Bikeway availability	Low
Investment	Low
Advertising potential	Moderate

BIKE SHARE PROGRAM VISION AND GOALS

The vision and goals for New Orleans' bike share program were developed through a series of *Idea Session* working groups that brought together community organizations, advocacy and non-profit leaders, business stakeholders, and public officials representing a number of agencies throughout the city. A vision for bike share in New Orleans was collaboratively developed and is as follows:

Bike share will serve as an accessible and affordable transportation network that benefits residents and visitors across economic conditions and neighborhoods. This mobility tool will help New Orleans meet its equity, public health, workforce development, economic development, innovation, and congestion relief goals.

The following goals derived from conversations with Idea Session and stakeholder interview participants. As bike share is rolled out in New Orleans, the system will:

- Provide more affordable and accessible transportation options.
- Lead as an international model for equitable bike share programs.
- Operate in a fiscally sustainable manner minimizing ongoing operating subsidy from the City of New Orleans.
- Expand workforce mobility options.
- Connect residents and visitors to the places they want to go around the city.
- Employ local staff, especially from disadvantaged communities and at-risk youth programs.
- Promote health and wellness, helping New Orleans become one of the top ten fittest cities in America by 2018.
- Help achieve mobility objectives including VMT reduction, congestion relief, and reduced search-for-parking traffic and parking demand.
- Facilitate a change in street culture and safety resulting in respectful co-existence among people walking, bicycling or operating motor vehicles.
- Fully integrate into the public transportation system, including fare integration.
- Attract residents and visitors to all neighborhoods, spurring economic development and retail sales.
- Reinforce the City's objective to create a pedestrian and bicycle-friendly city.
- Introduce more residents to bicycle transportation and expand the number of daily bicycle users.
- Leverage public support and funding for increased and improved bicycle infrastructure.



Image from Coast Bike Share

ROLLING OUT BIKE SHARE IN NEW ORLEANS

Bike share programs can be owned, managed, and operated in a variety of ways. The organizational assessment presented in Chapter 4 presents the range of organizational structures currently employed in North America and evaluates their feasibility within the context of New Orleans (including factors related to different management arrangements, system operators, capital ownership, staff capacity, ability to support major events, equity, and financial risk and liability). With current conditions, we recommend the City consider establishing a non-profit corporation to manage the bike share program and administer a contract with a private equipment vendor and system operator. The industry is constantly evolving, seeing new technologies, vendors and operators, and even fresh organizational approaches every year. As such, this report's organizational recommendation is flexible, allowing the City of New Orleans to respond to changing political, economic, and technological conditions. If conditions change, the City should conduct due diligence, including review of the organizational assessment found in Chapter 4, to determine if alternate operating models should be considered. At a minimum, New Orleans' eventual bike share organizational model must satisfy the goals of the bike share program and deliver this new affordable and sustainable mode of transportation in an equitable manner.

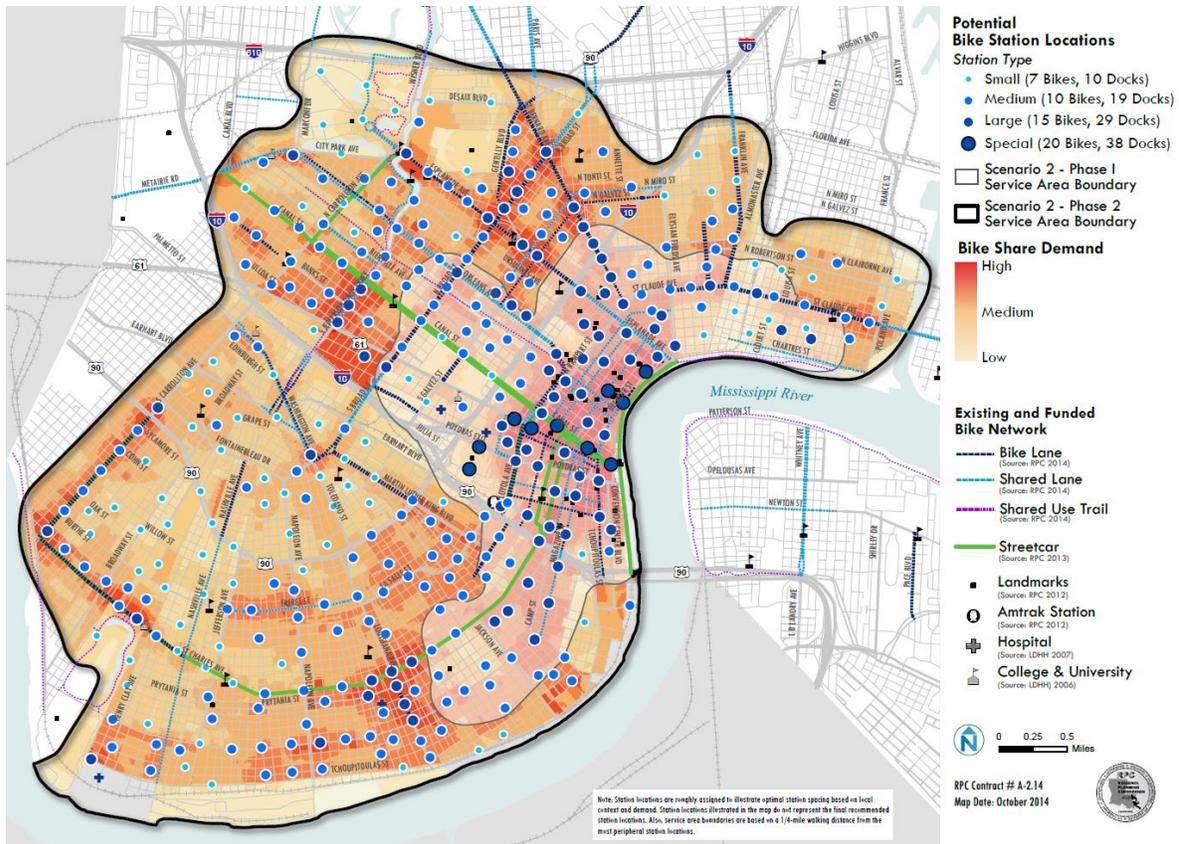
After evaluating the functionality, system sizing, costs, revenue, and funding gaps for two conceptual bike share system types (a station-based scenario and a smart-bike, hub-based scenario), this study conditionally recommends the City of New Orleans and the future system administrator develop a hub-based, smart-bike bike share system. We recognize that such systems are still in their infancy in

the U.S. and New Orleans can and should continue to monitor and learn from the experience of cities who have adopted the new approaches. It is important to note, however, that this type of bike share system is projected to require supplemental revenue for operations beyond phase one. If conditions change, however, the City should conduct due diligence and utilize the full analysis found in Chapters 5 through 7 to determine which system type best meets the new baseline conditions.

While the system could expand the boundaries shown in the service area map below, the initial phases of implementation will span from the Bywater and St. Claude neighborhoods upriver to the Leonidas and Hollygrove neighborhoods, covering the entire crescent. The northern service area boundary is recommended to serve City Park, the Fairgrounds, Saint Roch, and the southern edge of Gentilly. Roughly 89 hub locations and 1,245 bikes would be feasible in the recommended Phase 1 service area and an additional 277 hub locations and 2,679 bicycles could be feasibly rolled out in the next phase of implementation, totaling 366 hub locations and 3,924 bicycles available to the public. Based on the bike share pivot model analysis, the model forecasts up to 815,000 annual trips at system build out and at maturity (i.e., when the system is broadly accepted and well marketed, any launch challenges have been fixed, and cultural shift begins).

See the conceptual plan below to view the phased service areas and potential station spacing. Upon completion of this study and development of the bike share operational model, station locations should be further refined and finalized to provide direct station access from destinations and ensure stations' spatial requirements adhere to local codes. Future expansion is possible to neighborhoods like Algiers and the Lower Ninth Ward / Holy Cross neighborhoods, but this should be studied further.

Figure 2 Recommended Service Area and Conceptual Station Locations



Starting up the smart-bike system will cost roughly \$3.7 million in Phase 1 (includes start-up capital and costs to start-up the operator that will manage the program) and expansion will cost roughly \$6.0 million in additional capital. Ongoing operating costs will cost roughly \$1.9 million in Phase 1 and an additional \$4.7 million in Phase 2. While initial capital and ongoing operations funding support will be required from public private partnerships to implement the program, Phase 1 of the system will be profitable in its first year of operation. Expanding the system to areas outside the highest pockets of demand will require additional sources of revenue to meet budget shortfalls, which is typical of delivering a well-covered and equitably served public transit system. Key funding strategies to support capital and operating costs include:

- Title, presenting, and major sponsorships
- Public grants
- Foundation contribution
- Direct station purchase and limited station sponsorship
- Corporate membership and employee wellness programs

System design and costs for the station-based system alternative (Scenario 1) are also presented in this report.

WHEN CAN BIKE SHARE BE READY?

This report recommends the City develop a non-profit corporation pursuant to the Louisiana Non-Profit Corporation Law, Title 12, Chapter 2 of the Louisiana Revised Statutes 1950. If the City pursues this organization structure, developing the non-profit and engaging with the business community and other community stakeholders is the City’s first step in the implementation process. Critical first steps to move the program closer to implementation include hiring an Executive Director and establishing a Board of Directors, fundraising, writing an RFP for vendor and operator services, and executing the program’s equity strategy. Based on this report’s assessment, an 18-24 month implementation timeline is achievable. Securing initial funding for the non-profit and capital will play a large role in making this timeline a reality.

As a theoretical exercise, Phase 1 capital and operating costs for both scenarios were projected out three years to understand the funding gap that is necessary to be recover through grants, sponsorship, and other contributions. The results of this exercise are shown in Figure 3.

Figure 3 Snapshot of Phase 1 Funding Need

	Scenario 1: Station-based system <i>827 bicycles, 60 stations</i>	Scenario 2: Smart Bike, hub-based system <i>1,245 bicycles, 89 hubs</i>
Total capital costs	\$4.1 million	\$3.1 million
3-year operating costs	\$4.5 million	\$5.7 million
Initial 3-year costs	\$8.6 million	\$8.8 million
3-year revenue (see Figure 38 & 39)	\$5.0 million	\$7.3 million
Initial investment (RPC + local match)	\$1.5 million	\$1.5 million
Initial 3-year funding	\$6.5 million	\$8.8 million
Delta/Shortfall	(\$2.1 million)	\$0.0 million

Note: All cost and revenue figures are for Phase 1 only.
All figures are rounded to reinforce the conceptual nature of this analysis.

1 INTRODUCTION

Emerging from the post-Katrina rebuilding years, New Orleans has reestablished itself as a dynamic city, balancing constant change, economic growth, and population influx with a deeply rooted respect for history, tradition, and culture. The city offers a rich quality of life rooted in its vibrant, pedestrian friendly streets, diverse historic neighborhoods, entrepreneurial spirit, and growing economy. These elements, along with a transit rich urban form, are the backdrop for unique amenities and critical destinations that residents and visitors seek to access and enjoy year round.

However, a number of transportation challenges persist that threaten New Orleans' high quality of life. Congestion, air pollution, and the slow recovery of rubber-tired transit service since Katrina hamper the overall health and economic prospects of the city. The City and its public sector partners have made concerted efforts to balance livability, economic sustainability, social equity, and environmental health through transportation policies, infrastructure, and initiatives that will provide residents and visitors with more transportation choices.



Bay Area Bike Share has seen early success, which has spurred earlier than anticipated expansion to areas throughout the San Francisco Bay Area.

Source: Bay Area Bike Share

Bike share has been identified as one tool to meet resident, worker, and visitor mobility needs. It supports multiple ongoing initiatives, including active transportation, economic development, public health, and equity initiatives. Rooted in the momentum of these initiatives, this New Orleans Bike Share Feasibility Study and Business Plan examines the feasibility of a bike share system in New Orleans and makes recommendations based on lessons learned in peer cities. The unique

constraints, opportunities, and needs of New Orleans residents necessitate an in-depth look at whether an equitable and well-served bike share system could operate. The study's process and final document identifies a recommended implementable service area, a sustainable business model, funding opportunities, and implementation considerations. The study considers the very real challenges of implementing a new transit system, and highlights factors that will impact the viability and success of bike share in New Orleans.

NEW ORLEANS, AT A GLANCE

The city's 370,000 residents live in 72 distinct neighborhoods that range in urban form and character from central business district to mixed use historic neighborhood to single use districts and arterial commercial corridors. Many of these neighborhoods and broader districts exhibit unique urban transportation challenges and opportunities.

New Orleans has developed a dense public transportation network including buses, streetcars, and ferries. Although the system serves all neighborhoods, lengthy headways, limited operating hours, and poor coverage in some areas keep many from utilizing the transit system. Other routes face peak crowding and duplicitous service. Many riders walk long distances and/or wait for long periods at transfer points.

New Orleans has the highest bike ridership rate of any major Southern city (8th highest in the US). The city has made significant progress in growing the bikeway network from 5 miles before Hurricane Katrina to nearly 100 miles now. In addition, approximately 60% of New Orleans' 72 neighborhoods are now served by bikeways. Nonetheless, the bicycle network also faces a number of challenges. Limited bikeway connectivity between neighborhoods and major destinations and a lack of wayfinding stymie potential bicycle users. A backlog of pavement maintenance needs affects users of all modes and constrains the transportation budget.

Pressures on the city expand beyond transportation infrastructure and mobility issues, however. As mentioned in the *New Orleans 2030 Master Plan*, the city faces unique climate and economic pressures. As the city moves forward in a post-Katrina economy built around resiliency, the city has established an ethos of innovation.

This is evident by the city's ability to attract the highest rate of entrepreneurship in the United States. The metropolitan area's rate of business startups is more than 50% higher than the national average.

What is Bike Share?

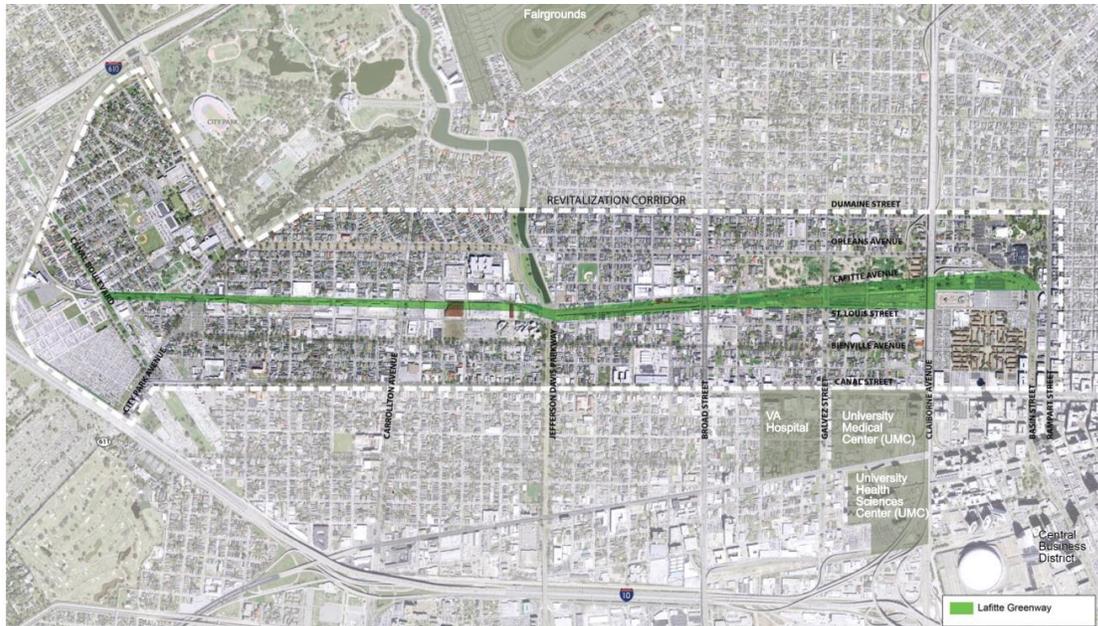
Bike share is a low-cost, flexible public transportation service that provides on-demand access to a network of publically-rentable bicycles. Depending on the type of system employed, public bicycles are distributed across a defined service area at fixed smart docking stations locations, hub locations, or individual public bike racks. Due to the point-to-point nature of bike share, this form of public transportation generally accommodates shorter trips that replace less efficient auto and transit trips (trip lengths average between 1 and 3 miles).

With over 30 systems operating in the United States as of July, 2014, and over one hundred more in planning or pre-implementation stages, bike sharing is the fastest growing form of public transportation in the United States. No other form of public transportation is able to unlock a wide range of community benefits—such as local environmental health, energy sustainability, quality of life, public health, and economic activity—for the same modest level of capital and operating investment.

Entrepreneurship spiked shortly after Katrina and has remained higher than the national average ever since. Annually, out of every 100,000 adults, 501 have started businesses.¹

From this entrepreneurial spirit have risen a number of innovative approaches to tackling transportation, land use, equity, and public health challenges. This has spilled over to various public policy and planning initiatives, including:

- **Complete Streets Ordinance.** The City of New Orleans unanimously passed a Complete Streets Ordinance requiring that all transportation improvements be planned, designed, and constructed to encourage walking, bicycling, and transit use. Bike share frequently spurs the development of bicycle infrastructure by generating momentum for bicycle improvements in the community, so bike share will both help achieve the goals of the initiative and benefit from it. The Complete Streets Ordinance can be viewed [here](#).
- **The Fit NOLA Partnership.** The partnership has brought together over 100 organizations to develop a strategy for a fitter, healthier New Orleans. Looking for ways to make physical activity easier for all New Orleanians is a critical component of this effort. Considering the positive health outcomes that bike share can bring to a community, bike share could help achieve the goals of this initiative in direct ways.
- **Lafitte Greenway.** The 3.1-mile Lafitte Greenway and Revitalization Corridor will restore many of the areas devastated by Hurricane Katrina between Mid-City and the French Quarter. Running along a former rail corridor, this greenway will provide direct access to the CBD amenities as well as neighborhoods and City Park. Bike share stations along this corridor will create better access and bring positive economic benefits to adjacent neighborhoods.



The Lafitte Greenway will run between Mid-City and the French Quarter, creating a comfortable bicycling environment.

Source: City of New Orleans

¹ Brookings Institution. (2013) The New Orleans Index at Eight. https://gnocdc.s3.amazonaws.com/reports/GNOCDC_NewOrleansIndexAtEight.pdf

- **Livable Claiborne Communities.** The City of New Orleans recently completed a study to understand how communities along the Claiborne Avenue corridor can be strengthened and revitalized for its residents and for the city and region. The study is an integrated transportation and neighborhood revitalization planning process identifying ways in which the City can meet the transportation needs of the community, and the result may lead to more bicycle infrastructure in the neighborhood.
- **New Developments.** A wave of new developments has created numerous sites ideal for bike share. The biomedical corridor is expected to bring 11.6 million square feet of new and renovated building space and 34,000 new jobs. Other projects provide a multitude of mixed use residential and commercial developments. World class attractions generate tremendous visitor interest and activity.

Bike share can build on these initiatives, working to augment transit, improve access to jobs, and spur the development of more bicycle infrastructure. In doing so, the system will add to the city's overall livability goals.

In addition to the more recent initiatives, bike share will also benefit some of New Orleans' more established assets. The numerous lively entertainment districts attract residents and visitors every week of the year. Events, such as Mardi Gras, the New Orleans Jazz and Heritage Festival, and Essence Festival are also enjoyed by visitors and residents alike. While these events are part and parcel of the City's cultural backbone, their demand for access create immense pressure on the City's already taxed street network and transit system. Traffic congestion, limited parking supply, and slowly improving transit service levels could be mitigated by a bike share system. As a new mobility choice—especially one with 24-hour service—bike share would give people a flexible, low cost transportation choice that does not require the construction of new parking garages or clog the street network.

The built environment and policy conditions listed above are critical factors in determining bike share feasibility. Additional existing condition details can be found in the Environmental Scan in Chapter 2 or Appendix B.

REPORT STRUCTURE

This feasibility study is unique in analyzing and evaluating the costs and tradeoffs of both a traditional station-based (or smart-dock system) system and the emerging hub-based smart-bike system model. The New Orleans Regional Planning Commission (RPC) and the City of New Orleans jointly funded this Bike Share Feasibility Study and Business Plan as a result of a high-level bike share study produced by Bike Easy and a 2013 EPA Building Blocks for Sustainable Communities technical assistance workshop. This Study addressed:

- Identification of vision, goals, and objectives for bike share
- Engagement of key stakeholders
- Development of an organizational and governance strategy for New Orleans
- Creation of a high-level business plan, bike share demand analysis, and feasibility assessment

This report is an action-oriented planning document that provides implementation guidance for a potential future bike share in New Orleans. The report is organized as follows:

- Chapter 2 assesses the **anticipated outcomes and benefits** of a bike share system in New Orleans. This chapter also presents the **goals** established by community stakeholders that fed into the organizational and system evaluation.
- Chapter 3 summarizes an extensive **environmental scan**, highlighting key existing conditions that impact the viability and long-term sustainability of bike share in New Orleans.
- Chapter 4 examines and assesses the applicable **organizational structures** that could own, administer, and operate a bike share system. The formal organizational recommendation impacts everything from the system’s design and implementation considerations at the end of the report.
- Chapter 5 represents the first part of the business plan. This chapter defines the **two system types** evaluated during this study—including a station-based system and a hub-based, smart-bike system—and establishes the **recommended service area and conceptual phasing** for the two system options based on the demand analysis and ridership forecast results.
- In the second part of the business plan, Chapter 6 establishes the **start-up, capital, and operating costs** of two system types by phase.
- In the final element of the business plan, Chapter 7 presents a menu of available funding options for capital and operations available and establishes a potential **funding strategy** that can guide the program as it seeks funding for initial capitalization and operations.
- Chapter 8 presents an **action-oriented implementation strategy** including an equity action plan that will catalyze the bike share program from planning phase to pre-launch activities.
- At the end of the report, the **Appendix** details the business plan’s cost assumptions and the briefing paper (with a detailed environmental scan).

This report is a planning document. Much of the analysis uses assumptions based on the experience of existing bike share programs that exhibit similar conditions as New Orleans. Organizational, demand, and financial analyses conducted during this study employ as much locally relevant data and assumptions as feasible. However, bike share remains a relatively new and constantly evolving experience in the United States. Thus, the entities tasked to administer and operate the bike share system should likewise continue to learn from emerging efforts and adjust assumptions as necessary.

2 ACHIEVING OUTCOMES, DEFINING SUCCESS

Some of the most important metrics of system success are qualitative rather than quantitative. While number of users is important, equally important are the urban objectives bike share supports. Urban revitalization, cultural shifts in how people move, and fostering a more bicycle-accepting culture are often overlooked components of bike share.

Some neighborhood characteristics yield higher ridership counts than others. Compact, mixed use, bikeable communities are typically able to support a dense network of productive bike share stations. Nice Ride Minnesota characterizes these communities as *Bike Places*, which exhibit:

- A **demographic shift** reflecting the national trend towards changing housing (compact rather than dispersed), technology (broad adoption of smart phones), and travel (diminishing reliance on automobiles) preferences.
- **Dense residential and employment centers** able to support 18-hour activity.
- A continuous network of **dense, mixed-use neighborhoods** housing a variety of local and regional destinations.
- A diversity of **transportation options**.
- A wealth of **urban amenities** including public spaces and human-scale main streets with restaurants, bars, and other retail options.
- A comfortable and extensive **bicycle infrastructure**.
- **Community programming**, events, and cultural attractions.
- **Visitor amenities** including hotels and destinations.
- **Parking pricing** levels that reduce congestion and encourage non-auto travel.
- A **Productive transit system** and a strong transit culture.
- General **cultural awareness** of bicycling.

The conditions listed above collectively make up a Bike Place and serve as the critical threshold of a community able to support a public bike share system. Operational considerations bring different measures of success. Programs planned to limit the amount of rebalancing² necessary lead to reduced emissions produced by the program. Additionally, many programs consider well maintained bicycle fleets and successful service calls when evaluating the success of the program.

² Rebalancing refers to the ongoing, and often complex, operational cost driver of a bike share system. Motorized vehicles or high capacity rebalancing bikes redistribute bikes over the course of a service day to ensure the appropriate number of bikes and open docks are available to customers.

What challenges lay ahead for New Orleans?

The expectations for bike share programs are set high as a result of the well-publicized success of larger programs. Although bike share is becoming a common form of transportation for many cities, it is still relatively new, and brings challenges that other modes of transportation do not have.

Safety: Despite the outstanding safety record of bike share programs, a frequent concern community members have is safety. Few on-street bicycle facilities and low helmet rates among bike share users exacerbate safety concerns.

Advertising: Cities with strict for-hire vehicle advertising and sign codes, such as New Orleans, Honolulu, and Savannah, have heightened concerns with regard to advertising and bike share systems. Advertising revenue is a major and vital source of revenue for most programs, meaning that this issue will likely need to be amicably resolved (see Appendix B for more information).

Historic Districts: If New Orleans implements a bike share program, a major challenge will be working within the existing codes related to development in historic districts (see Appendix A for more information). New Orleans has unique historic districts, but other cities have faced similar constraints. In New York City, for instance, “landmark districts” prohibit billboards and other large advertising. Stations were eventually permitted in these areas after working with neighborhood associations and historic preservation commissions. These stations, however, do not have large advertisements as are found at other stations.

Parking/Sidewalks: Parking challenges also frequently develop when implementing stations. When the sidewalks are too narrow to site a station, docking stations may be placed in the street replacing a parking space. This can result in objections from nearby businesses or residents.

Equity: Equity is an essential consideration for any mass transit system. However, to many, bicycling is perceived as transportation mode for upper-class whites. Ensuring that all community members have access to the system will work to breakdown this misconception.

Vandalism: Bicycles are seen as small, light and highly mobile which raises concerns that they are vulnerable to theft and vandalism. Despite the fact that most systems experience few problems, vandalism continues to be a significant perceived concern among communities.

Evolution of bike share: The transportation industry, like all modern industries, is innovating rapidly and bike share, more than most modes, is benefiting from rapid advances in both hardware and technology systems. Despite the opportunities permitted by these evolving systems, they bring with them inherent risks and untried or immature approaches. While these new systems hold great promise, municipalities are inherently risk-averse and are not eager to be the first adopter and test market.

BIKE SHARE AND ITS ANTICIPATED OUTCOMES

Bike share is the most cost-effective transportation system investment on a dollar invested per trip and consumer cost per trip basis. Bike share is having transformative effects on urban mobility, while demonstrating the ability to improve local economic activity and access to jobs, quality of life, public health and environmental conditions. Bike share systems have proven popular among residents, visitors, and businesses seeking walkable, vibrant urban neighborhoods. No other form of public transportation is able to unlock such wide ranging benefits for such a modest level of capital and operating investment.

From the long list of benefits, successful programs prioritize goals and design a system that best meets those goals. A system aimed to cater to tourists may have a different spatial layout than a system focused on equity; similarly, a system with the intention of helping more people commute by bicycle would differ from a system focused on recreation.

The following sections outline some of the most evident outcomes of bike share in New Orleans.

Equity

Many transit-dependent residents cannot comfortably depend on transit. In many lower income, job-poor neighborhoods transit service is of lower frequency (30 to 60 minute headways), shorter span (reducing or suspending service after 8pm), indirect (requiring a transfer to the final destination) and/or unreliable (experiencing congestion delays that may delay arrival times). Entry-level or hourly workers can scarcely risk being late to work for fear of penalty or firing. Nor can they afford excessive unproductive (e.g. non-wage earning) time in transit while they must pay for childcare or miss the opportunity for additional time on their second or third job.



Capital Bikeshare in Washington DC and surrounding cities prioritized system expansion in areas that served traditionally disadvantaged populations. Today, the system serves all neighborhoods in the District and is working to bring more stations to areas with the greatest need.

Source: Capital Bikeshare

Bicycle travel provides highly reliable travel times, virtually no limitation on “frequency” or “span” of service (as it is on-demand), and extremely low costs to users and providers. According to American Community Survey five-year estimates (2009-2013), nearly 9% of employed residents in New Orleans do not have a vehicle available. In some neighborhoods, the rate of zero-car households is much higher. Along the Claiborne Corridor, an estimated 40% of residents do not have access to a vehicle. Bike share may add convenience to many of these residents by providing reliable service to bus stops and other destinations.

For these reasons and more, many bike share programs have begun looking at the needs of lower income, job- and amenity-poor and/or lesser served neighborhoods when determining new station locations. A study from London’s Barclays Cycle Hire program found that stations in low income areas frequently outperformed those in higher income areas.³ Nice Ride Minnesota in the Twin Cities has sited stations in low income communities, particularly communities underserved by transit or places with higher rates of obesity, diabetes, or transit use. These stations are not located in areas with characteristics historically predictive of high bike share ridership, but they will help the program achieve its goal to improve transportation access across all incomes. Stations placed in low income areas of New Orleans could help deliver greater access to jobs, education centers, healthcare, groceries, libraries, and parks that certain areas of the city currently lack.

With new innovative strategies, bike share also may benefit members of the community who are unbanked, which means they have no checking or savings account. According to a study authorized by the U.S. Department of Treasury, 12.5% of Orleans Parish households are considered unbanked. This compares to 5.1% in the metropolitan area, 8.7% in the state, and 7.7% in the nation. This 12.5% represents 14,241 unbanked households. Another 25.5% or 29,053 of Orleans Parish households are

³ Ogilvie, F. & Goodman, A. 2012. Inequalities in usage of a public bicycle sharing scheme. *Preventive Medicine*55(1): 40-45.

considered underbanked. Underbanked is when a person has an account but continues to rely on alternative financial services, like check cashing services, payday loans, rent-to-own agreements, or pawn shops. Once again, the Orleans Parish percentage of 25.5% is higher than the metropolitan percentage of 18.1%, Louisiana’s 22.9% and the nation’s 17.9%.⁴

Transportation Efficiency

Bike share expands mobility, raises bicycling and transit ridership rates, and reduces automobile use. In some systems, up to 50% of users expressed that they make more trips by bicycle.⁵ Approximately 25-45% of bike share trips replace a vehicle trip.⁶ Bike share also helps improve transit efficiency and reduce urban core crowding on transit. In Washington, DC, 25% of Capital Bike share users switched from a short transit trip. Although converting some transit trips to bicycle trips, bike share does not negatively compete with transit. Instead it provides added overall system flexibility and travel choice that enables transit to confidently convert additional auto trips. In neighborhoods underserved by transportation options are offered with inefficient transit routing (e.g., loop routes), bike share can expand mobility and access options, improve connections to transit, reduce transit wait times, and even eliminate the need to transfer between routes or transit services. In New Orleans, this could help serve some of the most crowded bus routes, such as routes serving certain areas of the CBD, New Orleans East and Algiers.

More information related to meeting the equity challenge in underserved transit communities is listed in the case studies in Appendix B.

Last Mile Connectivity

Bike share systems in other cities have seamlessly provided transit connections, implementing bicycle docking stations at major transit centers like rail stations or bus transfer hubs. The New Orleans Regional Transit Authority (RTA) and the Jefferson Parish Department of Transportation (JeT) serve more than 400,000 residents, roughly a third of the population in the New Orleans–Metairie-Kenner Metropolitan Statistical Area. By locating bicycle docking stations at transit centers, New Orleans bike share could enable easier access to transit, particularly to residents living more than a half mile from a transit stop. This will provide added mobility that current transit cannot



Bike share stations in Minneapolis are located near transit stops to help transit riders reach the last mile of their destination.

Source: Nelson\Nygaard

⁴ City of New Orleans Office of Community Development <http://www.nola.gov/community-development/documents/general-reports/2012-2016-consolidated-plan-city-of-new-orleans-w/>

⁵ Velib’ Website, “Now We Know You Better;” (http://www.velib.paris.fr/les_newsletters/10_aujour_d_hui_nous_vous_connaissans_mieux).

⁶ Based on 2012 Denver B-Cycle and Capital Bike share data.

provide at a fraction of the cost. Moreover, in areas with limited nighttime or weekend service, bike share could help some transit patrons access their stops more efficiently.

Bike share works as a supplement to the transit system, enabling transit riders to get to the optimal transit lines for their trip. This minimizes their transfers between lines and makes transit a more convenient choice for a larger group of people.

A Healthier New Orleans

Many people in New Orleans are afflicted with preventable diseases related to inactivity and sedentary lifestyles. Roughly 12% of New Orleans' population has diabetes, and 32% are clinically obese based on Body Mass Index (BMI).⁷ Bike share not only provides an additional option for meeting a necessary household trip but concurrently provides an opportunity for physical activity – an imperative to mitigate the upward trends of these diseases. For instance, a 15-minute bike connection made just four times per week would burn about 500 calories a week and 26,000 calories per year. In the first 6 years of Paris' Velib system, users burned a combined 19 billion calories. This upward trend in active transportation and increased physical activity is likely to be replicated in New Orleans, as other systems have reported up to 66% of surveyed users stating increased bicycling *outside of bike share use* since subscribing. Just as important, the endorphins released while engaging in active transportation increase personal happiness, blood circulation, energy, memory, and overall job performance necessary for employment success and advancement.

Healthcare organizations in cities across the country have seen the positive impact bike share has on the health of their communities. Frequently, these organizations, which include public health agencies, hospitals, and private foundations, provide grants to promote the use of the system, particularly in areas with health disparities.

A More Sustainable New Orleans

Bike share contributes to broader environmental goals by providing alternatives to the motor vehicle. This results in reductions of vehicle miles traveled (VMT), greenhouse gas emissions, air pollution, and dependence on petroleum. In 2012, Capital Bikeshare trips in the Washington DC region resulted in 1.2 million pounds of carbon emissions avoided and reduced 4.4 million VMT. Paris' Velib system has saved 274 million pounds of carbon emission since beginning operations in 2007. As ridership grows, bike share programs can result in noteworthy reductions in a city's emissions.

⁷ New Orleans Health Department (2010). *Healthy Lifestyles in New Orleans*. <http://www.nola.gov/nola/media/Health-Department/Publications/Healthy-Lifestyles-in-New-Orleans-Community-Health-Data-Profile-final.pdf>



The benefits of bike share grow with increased ridership. More people using the bikes means reduced VMT and vehicle emissions.

Source: Richard Masoner

Regional and National Competitiveness

Cities are actively participating in a global marketplace of people choosing to live where they want, employers choosing where to locate, and consumers choosing where to make their next vacation and spend their disposable income. In order to attract employers, a talented workforce, and visitors, cities must offer amenities that make a place livable and easy to navigate.

Of the U.S.'s top ten vacation destinations, New Orleans is the only major tourist market without a bike share system on the ground or in implementation phase.⁸ Nearly every city with a convention center either has a system, has it funded or has selected a vendor. This is not the case in New Orleans. Creating a bikeable city is increasingly attractive to people looking for places to live and tourists seeking urban destinations that do not require the use of a motor vehicle. Cities like Atlanta, Nashville, Memphis and Raleigh are investing in bicycle infrastructure and programs as a tool to entice a workforce that is increasingly attracted to vibrant, diverse, urban places.⁹

Economic Productivity

The retail spending behavior of bicyclists is well documented. In Portland, shoppers arriving by bicycle spend 20% more each month than those arriving by car (spending less per trip but making more trips). Bike share has been linked to increased retail activity and contributes to more lively and

⁸ Trip Advisor. Top 25 Destinations in the U.S. <http://www.tripadvisor.com/TravelersChoice-Destinations-cTop-g191>

⁹ Angie Schmitt (2013). "Chicago, Seattle Mayors Spar Over Bike Lanes, Tech Workers", Streetsblog: <http://dc.streetsblog.org/2013/02/21/chicago-seattle-mayors-spar-over-bike-lanes-tech-workers/>

active mixed use and retail districts. In the Twin Cities, bike share users spend a net extra \$150,000 at businesses adjacent to bike share stations. These are purchases that would not have been made without bike share. A study of Capital Bikeshare in Washington, D.C. found that 70% of the 140 businesses surveyed stated that bike share has had a positive impact on the neighborhood, and 10% of respondents perceived an increase in customers due to bike share. The study also received more than 300 respondents from bike share users, two thirds of whom reported using bike share to reach a destination associated with consumer spending.¹⁰ This figure would be compounded in New Orleans by the number of annual visitors who frequent the urban core.

Job Creation

The experience of cities of similar size to New Orleans has shown that bike share can create 10-15 new full time jobs and 5-20 part-time positions. Job creation, however, is related to the size of the system and the organizational model used. As the system expands to other neighborhoods or communities and ridership grows, employment increases. Bike share programs have an opportunity to partner with local workforce development organizations to hire from underemployed and returning citizen populations for rebalancing the system, repairing the bicycles, or participating in marketing efforts.

Community Benefits

Based on the recommended full system size roll out and its corresponding ridership range, New Orleans may achieve the following community benefits:¹¹

Figure 4 Initial projected community benefits of bike share in New Orleans

Type of Benefit	Performance Metric
Equity	Provide mode of transportation for 9% of New Orleans without a vehicle available
Health	58 – 70 million calories burned each year
	16,500 – 20,000 pounds of fat burned each year
Environmental/ Energy	1.7 million in potential annual VMT savings
	1.5 – 1.9 million estimated pounds of carbon saved annually
Economic	14-28 new jobs created directly by New Orleans’ bike share program (depending on system size and phase; does not including ancillary temporary jobs)
	\$125,000-\$510,000 net increase in retail spending at businesses immediately adjacent to bike share stations (conservative estimate)
	\$1.0 – \$1.2 million in potential annual savings from reduced driving

¹⁰ Anderson, Ryan, et al. (2013). Economic Impact & Operational Efficiency for Bikeshare Systems. <http://ralphbu.files.wordpress.com/2014/01/virginia-tech-capital-bikeshare-studio-report-2013-final.pdf>

¹¹ The projected community benefits were modeled by extrapolating the experiences and results of existing bike share systems across North America and Europe, including Capital Bike share (Washington DC area), NiceRide MN (Twin Cities), Vélis (Paris), and others.

VISION AND GOALS FOR THE NEW ORLEANS BIKE SHARE PROGRAM

The vision and goals for the New Orleans Bike Share program were developed through a series of “Idea Sessions.” These working groups included community, advocacy and non-profit leaders, business stakeholders, and public officials representing a number of agencies throughout the city. Stakeholders from the business, advocacy, and non-profit sectors joined the public officials through each step of the process. A vision for bike share in New Orleans was collaboratively developed and is as follows:

Bike share will serve as an accessible and affordable transportation network that benefits residents and visitors across economic conditions and neighborhoods. This mobility tool will help New Orleans meet its equity, public health, workforce development, economic development, innovation, and congestion relief goals.

The following goal statements derive from conversations with Idea Session and stakeholder interview participants.

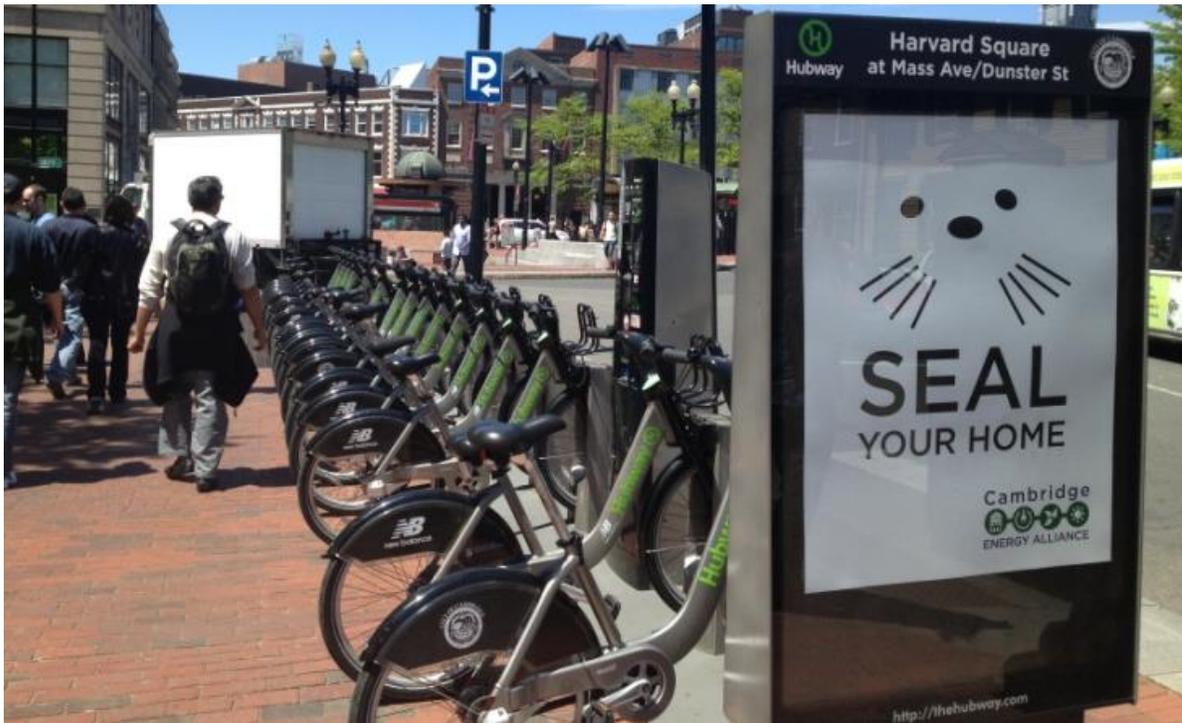
Bike share in New Orleans will...

- Provide more affordable and accessible transportation options.
- Lead as an international model for equitable bike share programs.
- Operate in a fiscally sustainable manner minimizing ongoing operating subsidy from the City of New Orleans.
- Expand workforce mobility options.
- Connect residents and visitors to the places they want to go around the City.
- Employ local staff, especially from disadvantaged communities and at-risk youth programs.
- Promote health and wellness, helping New Orleans become one of the top ten fittest cities in America by 2018.
- Help achieve mobility objectives including VMT reduction, congestion relief, and reduced search-for-parking traffic and parking demand.
- Facilitate a change in street culture and safety resulting in respectful co-existence among people walking, bicycling or operating motor vehicles.
- Fully integrate into the public transportation system, including fare integration.
- Attract residents and visitors to all neighborhoods, spurring economic development and retail sales.
- Reinforce the City’s objective to create a pedestrian and bicycle-friendly city.
- Introduce more residents to bicycle transportation and expand the number of daily bicycle users.
- Leverage public support and funding for increased and improved bicycle infrastructure.

An anticipated challenge of these goals will be achieving both the financial self-sustainability and equity goals. Although bike share programs in peer cities continue to pursue their equity goals, these programs rely on some public funding. Stations located in neighborhoods with disadvantaged populations often lack many of the characteristics of stations with high ridership levels. In New Orleans, lower income neighborhoods are often low in population and employment density. This typically results in lower ridership levels. In subsequent chapters, this document will identify some

innovative approaches to helping make such stations more profitable. Marketing, education campaigns, and station sponsorship are some of the ways in which a system can distribute stations equitably while still raising adequate revenue.

Another challenge is maintaining lasting fiscal sustainability without financial support from the City of New Orleans. Securing system sponsors, if the system depends on sponsor support, could be challenging if the public sector does not have skin in the game. Many cities limit support of a future bike share system to in-kind services and may help fund bike share capital (including initial matching funds). The City has expressed interest in a sustainable system supported by ongoing operating costs. This is an assumption employed throughout this study.



Boston's Hubway bike share system is a great peer system
Source: Nelson\Nygaard

3 ENVIRONMENTAL SCAN

An early step in determining the feasibility of bike share in New Orleans is to establish a baseline read of existing conditions relating to demographics, transportation, and land use. This environmental scan will provide a profile of demographics and tourism, assess the built environment and existing transportation network, and document key initiatives that support bike share. These findings provide input into a preliminary determination of feasibility on page 3-16 and will be used to inform the demand analysis and ridership forecast.

This chapter is an excerpt of a larger environmental scan, which is located in Appendix B.

GEOGRAPHY, DEMOGRAPHICS, AND TOURISM PROFILE

This section provides an overview of factors related to bike share use propensity, including topography, climate, population and employment density, transit propensity, and tourism.

Topography and Climate

New Orleans is a flat city relative to many other places that have implemented or have planned bike share programs (e.g., San Francisco, Seattle, and Pittsburgh). Yet, the city does have some minor elevation gains, most notably between Dillard University and the Mississippi River. This elevation gain totals less than 20 feet and will not likely be a prohibitive factor for most users. Most elevation change results from structures like bridges and overpasses.

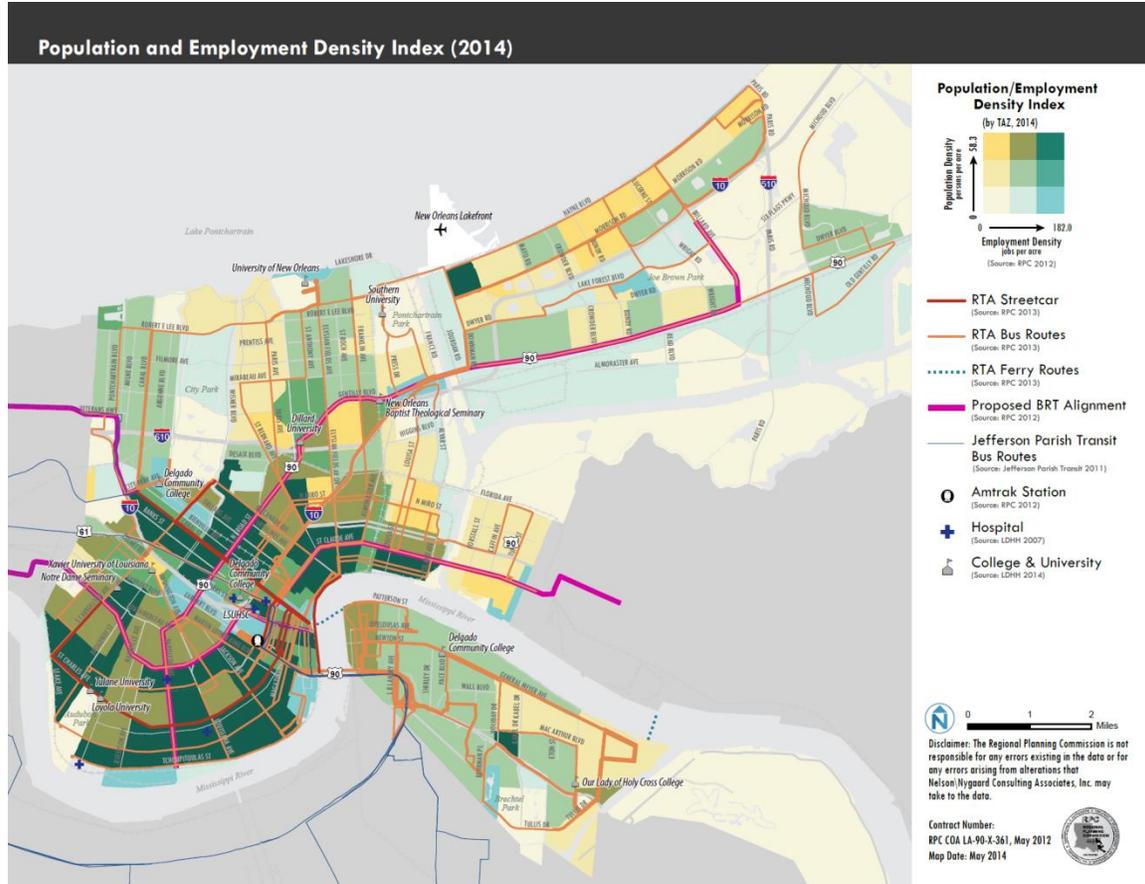
The humid subtropical climate may become a major barrier to use. For six months a year, the average high in New Orleans exceeds 80°F and rises to 90°F or higher for June, July, and August. These months are also the rainiest, experiencing as much as eight inches of rain per month. These climatic characteristics may prevent many unaccustomed users from riding during the summer, but the mild winters make New Orleans a year-round biking city. November through April is dry relative to the summer, and the lower temperatures make for more pleasant biking conditions on most days.

Population and Employment Density

Population and employment densities are clustered in neighborhoods along the Mississippi River and Mid-City. Areas closer to Lake Pontchartrain and on the Westbank have lower population and employment densities. Historically, bike share stations surrounded by denser population and employment activity tend to have higher patronage than stations in areas with lower densities. The map below uses 2010 Census data and Longitudinal Employer-Household Dynamics (LEHD) data to map population and employment densities in New Orleans. Using this map as an indicator of neighborhood performance alone would predict that the French Quarter, Central Business District (CBD), Uptown, Mid-City, and adjacent neighborhoods have the greatest concentration of demand generators and therefore likely to support the highest rate of bike share usage. Parts of Gentilly,

Algiers, and New Orleans East show moderate population and employment densities, but these areas would likely have lower ridership rates than the denser areas to the south.

Figure 5 Population and Employment Density Index (2014)



Population and employment densities are highest in the CBD, Mid-City and Uptown/Carrollton areas. Areas with higher density are more likely to host successful bike share stations.

Source: Nelson\Nygaard

Mode Split and Transit Ridership

The City of New Orleans, which has twice the bicycle mode share (people using the bicycle as their primary commute vehicle) of any other major city in the South, has contributed to the growth in bicycling nationwide. New Orleans has seen its bicycle mode share more than double since 2005, rising from 1.0% of commute trips to 2.4% of commute trips in 2012.

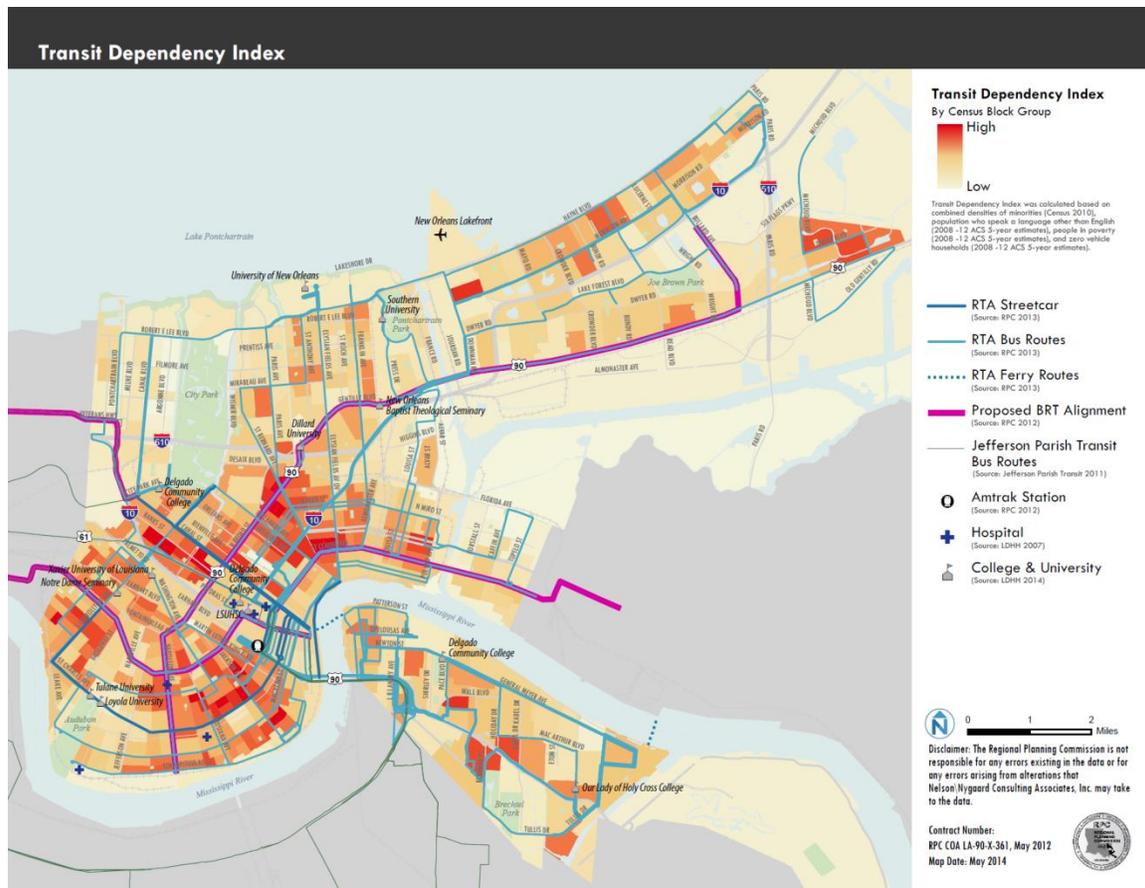
According to American Community Survey estimates, transit mode share has declined from 12.2% in 2005 to 6.6% in 2012, at least partially a result of transit system damage caused by Hurricane Katrina. However, transit has regained momentum with new post-Katrina investments. Ridership has raised each of the past four years, and the Regional Transit Authority (RTA) and Jefferson Transit (JeT) vehicles carry about 47,000 riders and 6,800 riders on weekdays, respectively. Bike share may complement this growth in ridership by helping resolve the “last mile” issue for areas with poor connectivity or limited hours of operation.

Transit Dependency

Population and employment density, however, are not the only factors to consider when determining the geographic scope of bike share stations or the propensity for transit use. Certain areas of New Orleans show a greater need for new transportation options. These areas may benefit the most from bike share stations, even if their population and employment densities are lower than Downtown New Orleans.

The Transit Dependency Index is based on a number of factors that have historically shown higher transit utilization rates including census data of density of minority populations, populations who speak a language other than English, people in poverty, and zero vehicle households. The results show Census Block Groups throughout the city with a demonstrated need for more transportation options (Figure 6). Most of these areas are clustered in areas with higher population and employment densities, but many areas of New Orleans East and Algiers also have a high transit propensity equivalent to that of the CBD. Although many of these areas have access to existing transit lines, many of these lines have limited night or weekend service. Bike share stations in these locations may help residents access their jobs, groceries, and other needs more efficiently in off-peak hours.

Figure 6 Transit Dependency Index



Areas demonstrating the greatest need for transit include Treme, the Seventh Ward, and Central City. The Transit Propensity Index was calculated based on a number of factors that have historically indicated higher transit rates.

Source: Nelson/Nygaard

Tourism Profile

Residents and workers are not the only users of bike share systems. Visitors also enjoy the convenience and cost effectiveness of bike share systems. This user group is more likely to purchase short-term passes, which boost the ridership numbers and increase the financial viability of the system.

As one of the most popular tourist destinations in the country, New Orleans has a large visitor base to draw from. According to the 2012 Convention & Visitors Bureau annual report, over nine million visitors traveled to New Orleans for vacation/pleasure or business/convention purposes. Visitors spent over \$6 billion and frequented the bars, cafes, casinos, and museums located throughout the city; however the majority of visitors spend time in the French Quarter and/or Garden District. The climate, topography and gridded, narrow street network of the city lend themselves well to biking and are comfortable for inexperienced or unfamiliar users. In other cities, patrons of the businesses enjoy the unhurried convenience of using a bicycle to ride between destinations, and bike share could make these leisurely trips on bicycles possible.

The demographics of New Orleans' visitors provide further evidence that bike share has demand among tourists. Less than half (48%) arrive in a personal vehicle, and a fourth of the visitors are between the ages of 18 and 34. This age group represents the highest age group for bike share users. The second highest user demographic, people between 35 and 50, are also frequent visitors to New Orleans. In total more than half of visitors are under the age of 50.¹²

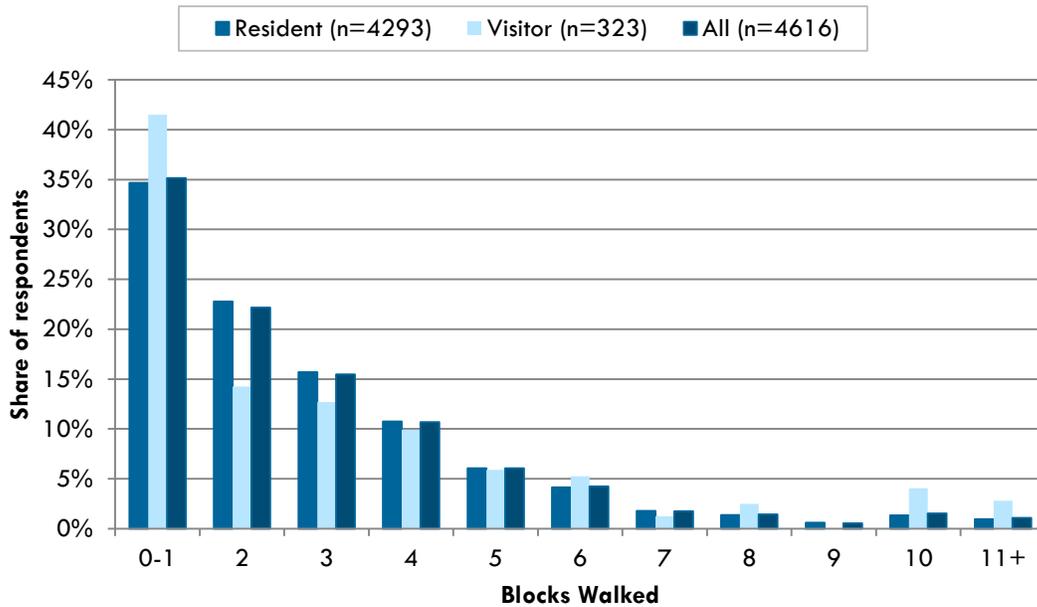
Visitors currently spend an average of \$10 per day and \$38 per trip on local transportation. Although use of the streetcars and ferries is frequently listed among the most positive experiences of surveyed visitors, public transportation is also among the most frequently cited negative experiences. Comments have referred to the public transportation system as ineffective, expensive, and inconvenient (i.e. limited hours of operation, indirect routes, and long wait times). Providing bike share as an alternative can help boost the experience of visitors by providing a convenient and more affordable way to travel among the city's multitude of destinations. Most visitors, however, are unwilling to spend more than \$10 per day on transportation, so keeping the daily price of bike share below this amount may be critical to attracting visitors.¹³

As shown in Figure 7, all riders of RTA rarely walk more than five blocks to a stop. Compared to residents, visitors are less likely to walk more than a block to a transit stop. Although these results may suggest that RTA provides convenient service for visitors and residents, this graph may also suggest how far people are willing to walk to ride transit. Coordinating with bike share stations may expand the number of people willing to ride transit by decreasing the time an individual will need to reach a stop.

¹² New Orleans Area Visitor Profile: Annual Report, 2012.

¹³ Ibid.

Figure 7 **Blocks RTA Riders Walked to Transit Stop**



Source: 2012 RPC Comprehensive Operational Analysis On-Board Survey

Special events, such as Mardi Gras, Jazz Fest, and Essence Festival, are opportunities to boost visitor experience and ridership numbers. These festivals bring several challenges from the visitor’s perspective. Difficulty finding a taxi, disrupted street connectivity, and more expensive parking can make the experience of arriving at the events frustrating. Bike share offers an affordable transportation option that allows the user to arrive at destinations without many of these frustrations.

Overall, tapping into the large visitor and tourist population provides an opportunity to bolster the financial viability of a bike share system beyond what residents and workers alone could support. Capturing visitor spending on transportation could enable a transfer of benefit to support the extension of the system to second or even third tier neighborhoods that would be unable to justify a bike station on local demand alone. Visitor revenue capture is a key reason why Washington, D.C.’s Capital Bikeshare is operating in the black.

BUILT ENVIRONMENT

The built environment in New Orleans will play a major role in the success, accessibility, scalability, and perceived safety of bike share. Likewise, land use and right-of-way conditions will play an important role in determining bike share ridership. This section considers these factors in light of how compatible a bike share system would be if implemented with the existing conditions.

Land Use

Bike share performs best in compact settings offering a mix of commercial and residential uses. Major destinations – for example entertainment districts, sporting arenas, institutions, and parks - also generate or attract bike share demand. In addition to creating a pleasant area to explore on two

wheels, historic districts often have narrower streets and low volume streets ideal for safe bike conditions. This section highlights areas of New Orleans with these characteristics.

Mixed-Use Centers

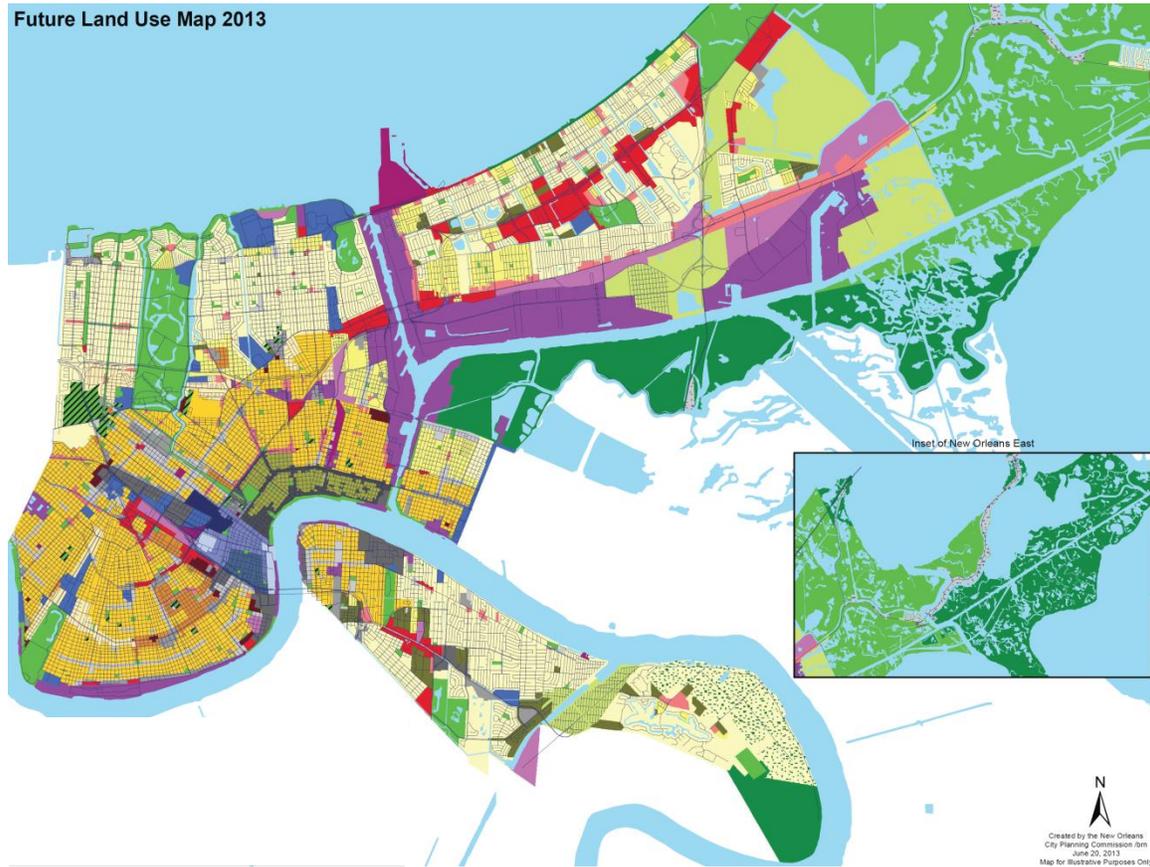
New Orleans' mixed-use centers are located in and near the CBD, Mid-City, the French Quarter, Bywater, and Marigny, but general commercial districts can be found throughout the city. Areas with major commercial centers located near residential land uses include Algiers, St. Roch, Gentilly Woods, and New Orleans East. Although bike share typically performs best in mixed-use areas, residents of single use residential neighborhoods could bike to transit stops and other amenities located at neighborhood commercial centers.



Mixed use environments make for ideal locations for bike share stations because the areas include both a high number of residents and frequently visited destinations.

Source: Nelson\Nygaard

Figure 8 Future Land Use Map



Legend

Residential Semi-Rural	General Commercial	Business Center
Residential Single-Family Post-war	Downtown Exposition	Industrial
Residential Low Density Post-war	Downtown Mixed-Use	Institutional
Residential Multi-Family Post-war	Downtown Core Neighborhood Mixed-Use	Parkland and Open Space
Residential Historic Core	Mixed-Use Low Density	Cemetery
Residential Single-Family Pre-war	Mixed-Use Medium Density	Natural Area
Residential Low Density Pre-war	Mixed-Use High Density	Transportation
Residential Medium Density Pre-war	Mixed-Use Historic Core	Planned Development Area
Residential Multi-Family Pre-war	Mixed-Use Health/Life Sciences	
Neighborhood Commercial	Mixed-Use Maritime	

The CBD, French Quarter, Marigny, and Bywater feature mixed use districts. Areas of Algiers, Mid-City, and New Orleans East have major commercial centers located near residential zones. Neighborhood commercial districts are scattered throughout the city functioning as 'Main Street' areas within residential areas.

Source: City of New Orleans, New Orleans 2030 Plan, 2010

Destinations

Sporting arenas, entertainment districts, and museums are clustered in the CBD-French Quarter area and many of the commercial and mixed-use centers mentioned above. City Park, Audubon Park, Treme, Pontchartrain Park, Lakeshore Drive Parks, Crescent Park, and the local universities are destinations outside the CBD that residents and visitors frequent. Although the CBD and French Quarter have hundreds of destinations, the distances between them are often too great to walk for most people. For example, the French Quarter stretches for nearly a mile between Esplanade Avenue and Canal Street. Many of the hotels and parking catering to visitors of the French Quarter fall outside this boundary, which can make for a long walk. This type of trip is ideal for bike share users. Opting for bike share could turn a 25 minute walk into a ten minute bike ride.



Many of New Orleans' key destinations are located near the CBD, but placing stations outside Downtown New Orleans will help visitors and residents reach parks, universities, and other neighborhood centers.

Source: Nelson\Nygaard

The numerous destinations in the CBD and French Quarter neighborhoods make them ideal places for a dense network of bike share stations. Outside the CBD, the destinations are farther apart but still numerous. While financial feasibility of service area expansion toward Lake Pontchartrain needs to be carefully examined, expanding the network to include City Park, the Lakefront and Audubon Park could reduce vehicle trips to these parks and help visitors explore the historic districts throughout the city. Figure 19 displays most of the key destinations that will generate the bulk of bike share trips in New Orleans.

A challenge for many destination cities is how to entice and enable visitors and downtown workers to travel beyond the central districts such as the French Quarter and CBD to experience and patronize the larger city, spreading their spending power to other neighborhoods and local enterprises. Bike share effectively shrinks perceived distance by shrinking actual travel time thus bringing destinations closer together and expanding the convenient range of access for downtown patrons and workers and providing broader access from the larger city to jobs in the downtown.

Historic Districts

New Orleans' historic districts are some of the most appealing places to ride a bicycle. Their narrow, low-speed, low-traffic streets provide a pleasant contrast to wide high-volume streets. The rich architectural heritage encourages visitors and residents to explore these areas at slower speeds than a motor vehicle.

The historic districts of New Orleans are abundant and provide great connections between the CBD and outlying destinations such as Audubon Park, the Lakefront and City Park. Assuming a clearly marked bicycle route, a visitor or resident could ride between the CBD and Audubon Park in 30 minutes. This trip is generally too far to comfortably

walk and thus favors use of a motor vehicle. Stations placed along a bike corridor to the Park could enable a user to make a stop and explore the Garden District along the way. Stations could also be placed near businesses as an economic development tool.

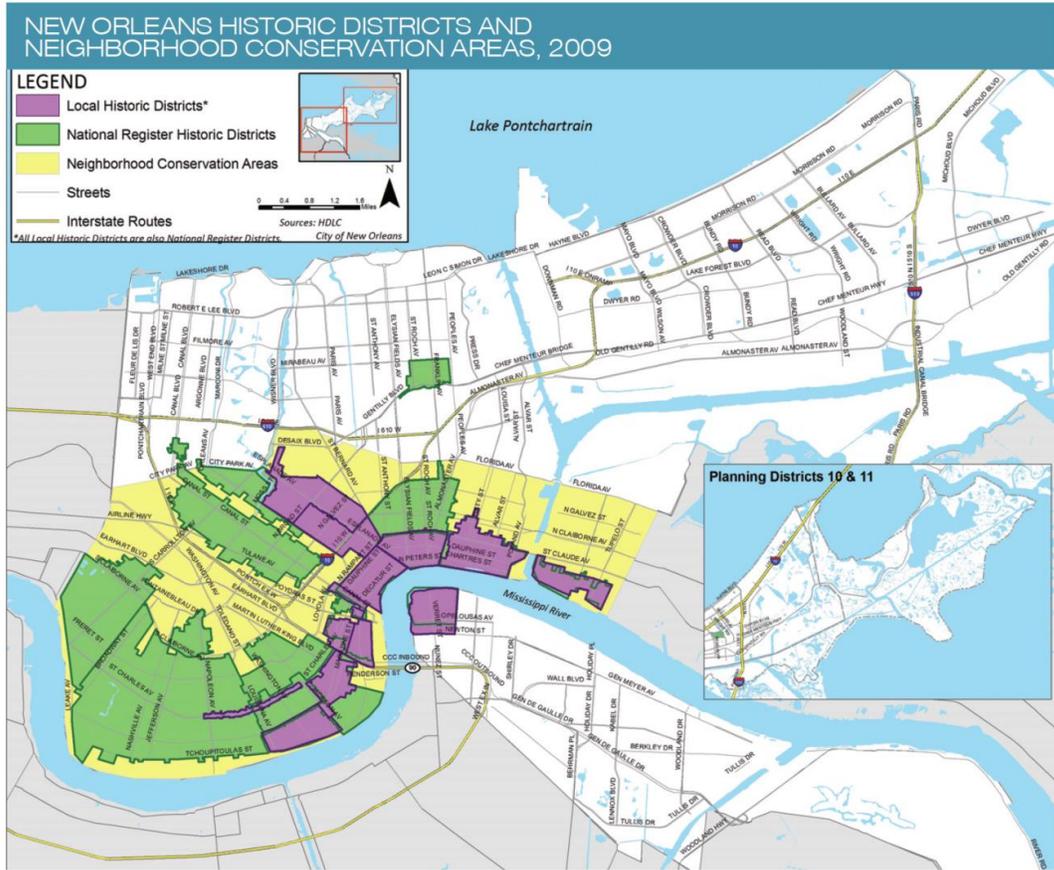
Strict design standards, however, pose a challenge to placing stations in these districts. For many systems, advertising at stations is a major source of revenue. Sign code restrictions could limit revenue potential in these neighborhoods. Nearly all of the areas that have higher concentrations of residents, attractions or jobs – the generators for bike share use – are within a local or national historic district or neighborhood conservation area. While this would not preclude bike share, it introduces a significant factor to consider in equipment selection and system design.



Riding through New Orleans' historic districts offer low-traffic streets for people on bicycles to enjoy.

Source: Nelson\Nygaard

Figure 9 New Orleans Historic Districts



New Orleans' numerous historic districts are destinations in themselves, and they can also serve as pleasant, low traffic bicycle routes between the CBD and outlying destinations.

Source: City of New Orleans, New Orleans 2030 Plan, 2010

Right-of-Way

New Orleans has a dense network of streets, which is one of the best indicators of a great bicycling city. The small block sizes keep motor vehicle speeds low and provide alternatives to streets with high traffic volumes. The existing street network presents great opportunities to develop a low-stress neighborhood bikeway network. The fine grid of streets provides great connectivity between bike share stations and businesses and destinations in all directions around it.

Yet, pavement conditions of many of these streets are poor. Even though public bikes are sturdy, they will require more frequent



The dense network of streets and small block sizes allow pedestrians and people on bicycles multiple low-traffic alternatives to arterials.

Source: NACTO Urban Street Design Guide

maintenance on streets with poor pavement conditions. Moreover, the ride will be less comfortable—and therefore less desirable—for users. Street lighting may also pose an issue. Although bike share bicycles are equipped with front and rear lights, street lighting is improving along many streets in New Orleans and patrons may feel uncomfortable cycling on dark streets in evening hours.

Another challenge for these streets is the narrow sidewalks. Bike share stations require between six and 8 feet of sidewalk depth. If the sidewalks are to maintain ADA standards and allow for comfortable docking movements, stations could not be located on sidewalks less than 10-feet in width. On streets with on-street parking, a bike share station could fit easily into a parking space. Removing parking, however, can be a challenge in areas where parking is in high demand.

TRANSPORTATION ASSESSMENT

Another indicator of bike share feasibility is how well the base bicycle and transit network can integrate with a future bike share system. The following sections identify gaps in the transportation network and assess bicycle and transit network considerations as they relate to bike share.

Bicycle Network

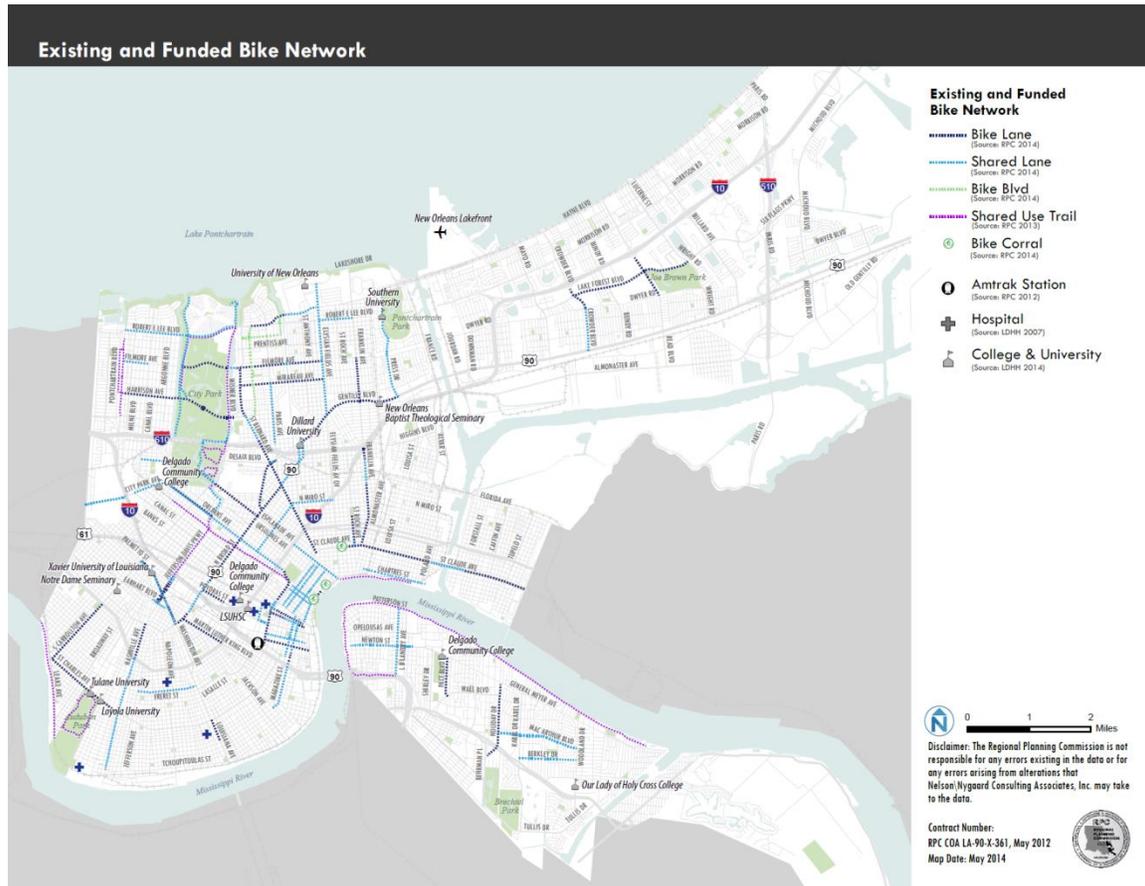
In the past five years, the bike network in New Orleans has expanded by about 400%. Total bikeway network distance in the city has skyrocketed to 94 miles with 60% of the city's 72 neighborhoods served by at least one bikeway. The existing and funded bike network contains about 24 miles of off-street trails and more than 30 miles of bike lanes (not including shared lanes or bicycle boulevards). Much of the mileage is concentrated in Mid-City, Gentilly, and the CBD, but Algiers, City Park, Lakeview, and Uptown offer bicycle lanes, trails, and signage as well (Figure 10). Low volume, low speed neighborhood streets play a significant role for people riding bicycles in New Orleans. This street type plays a major role in more dense, historic neighborhoods in creating bike-friendly environments. A number of these streets are designated with shared lane markings. Bike share programs have been implemented in peer cities with much less bike infrastructure, but successful systems are in cities where users of all levels and abilities have sufficient designated facilities to feel safe bicycling.



Bicycle ridership in the Marigny and Bywater neighborhoods is among the highest in the city, even with limited bicycle infrastructure.

Source: Nelson\Nygaard

Figure 10 Existing and Funded Bike Network



New Orleans offers 94 miles of bikeways today. The existing and funded bike network offers more than 30 miles of bike lanes and 24 miles of off-street trails.

Source: Nelson\Nygaard

Transit System

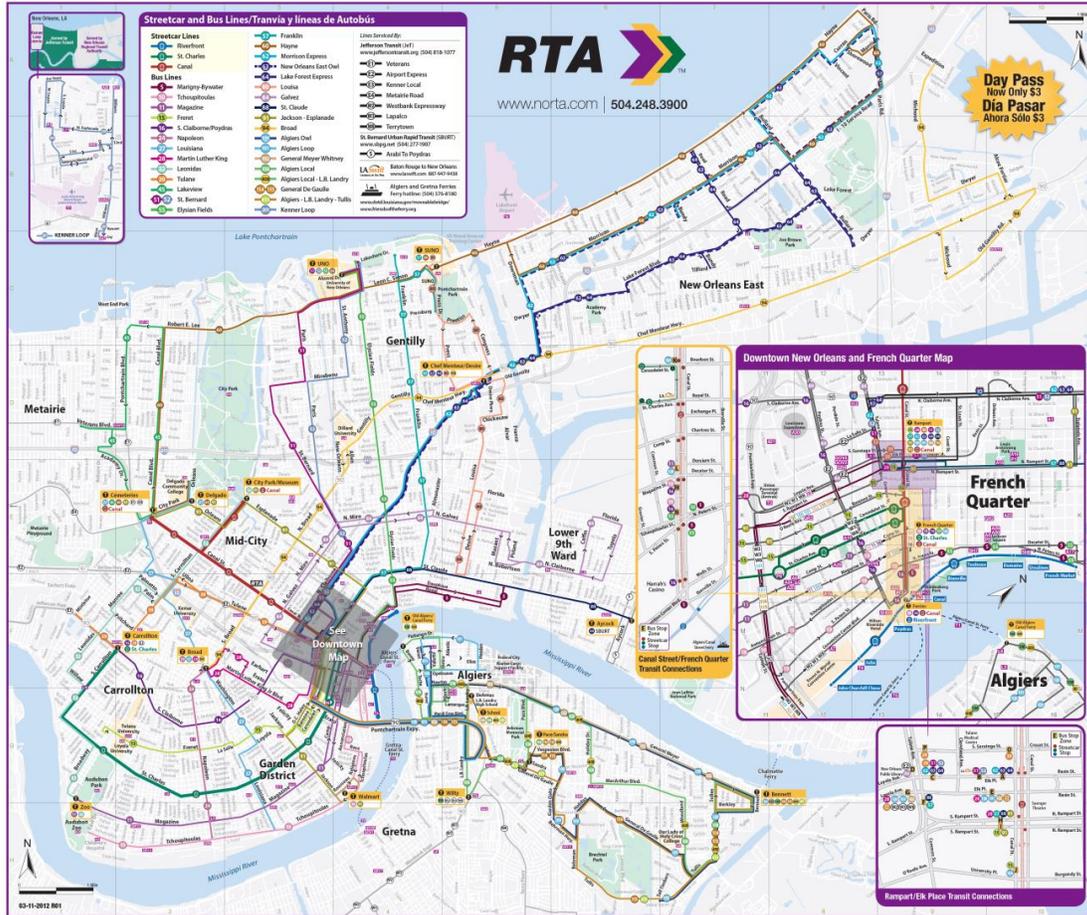
Successful bike share programs in peer cities have worked to seamlessly integrate their bike share program into the existing transit network by co-locating docking stations with transit stops. A handful of programs have even implemented fare cards compatible with both bike share and the existing transit system. This section highlights the existing network and considers the proposed network as well.

Existing Transit Network

RTA operates a system of 32 bus routes and 4 streetcar lines within the cities of New Orleans and Kenner. According to RPC’s Comprehensive Operational Analysis, the RTA system carried about 47,000 riders on weekdays, 38,000 on Saturdays, and 27,000 on Sundays in 2011. Base headways are generally between 30 and 60 minutes, although the streetcar lines and a handful of bus routes operate more frequently. Service spans are generally long, with many routes operating until midnight or later. All routes operate daily except for 108 Algiers Local, 32 Leonidas, and 60 Hayne.

The St. Charles and Canal streetcar lines carry significantly more riders than other services (9,300 and 7,300 weekday boardings, respectively). The bus routes with the highest ridership are the 94 Broad (3,500), 39 Tulane (2,700), and 88 St. Claude/Barracks (2,200).¹⁴

Figure 11 RTA System Map



Nearly all of RTA's 32 bus routes terminate in the CBD. JeT serves areas on the Eastbank and Westbank of Jefferson Parish. Source: New Orleans RTA, 2012

According to an on-board survey completed during the Comprehensive Operational Analysis (COA) of the transit system conducted in September 2011, the majority of RTA transit riders who live in New Orleans had to make a transfer to reach their destinations. Less than a third of visitors, however, made a transfer. Bike share as an option may reduce necessary transfers for transit riders by providing the option to step off a bus, grab a bike, and reach their destination more quickly than having to wait at a stop for a second or third bus.

JeT provides service on 12 fixed routes in Jefferson Parish, operating 11 bus routes on weekdays, six on Saturdays, and four on Sundays. These routes enter the city on either Tulane Avenue or by crossing the Crescent City Connection. Routes are classified based on whether they operate on the Eastbank or Westbank. JeT carries about 6,800 riders on weekdays, 3,100 on Saturdays, and 1,200

¹⁴ RPC Comprehensive Operational Analysis, 2012

on Sundays. Headways are highly variable, with peak headways ranging from 20 to 78 minutes. Service begins at 5:20 AM and ends at 10:32 PM. Route E1 Veterans carries significantly more riders than any other route, with about 1,600 weekday boardings. The second highest route is E2 Airport, with about 1,110 weekday boardings (RPC Operational Analysis, 2012).



RTA operates four streetcar lines. The stops will make excellent locations for bike share stations and help integrate bike share into the existing transit network.
Source: Nelson\Nygaard

Outside of the CBD, major transfer points include the Cemeteries Transfer, the intersection of South Carrollton Avenue and South Claiborne Avenue, the intersection of Washington Avenue and South Broad Street and the intersection of Pace Boulevard and Sandra Drive. Placing bike share stations at transfer points is critical to integrating bike share networks into the existing transit network.

As shown in Figure 11, The Canal Street Ferry runs between Algiers Point and the CBD, providing access across the river for pedestrians and people with bicycles for \$2 each way. The ferry operates from 6:00 a.m. to 10:00 p.m. on weekdays, with shorter hours on weekends. A second ferry line operates between Lower Algiers and Chalmette. Bike share stations placed at the ferry terminals could allow users to dock their bikes before getting on the ferry, reducing crowding and preventing riders from accruing additional fees for time they are not riding the bike.

While headways and spans are generally adequate, there are few affordable alternatives for transit users who miss their bus or ferry and cannot afford to wait for the next. Service and hospitality jobs, which represent a large portion of the entry level jobs in New Orleans, frequently require late evening or early morning work hours. Bike share could provide an important means to supplement the existing transit system by providing additional flexibility and security for transit-dependent users and effectively extend the span of transit service to provide 24-hour mobility options.

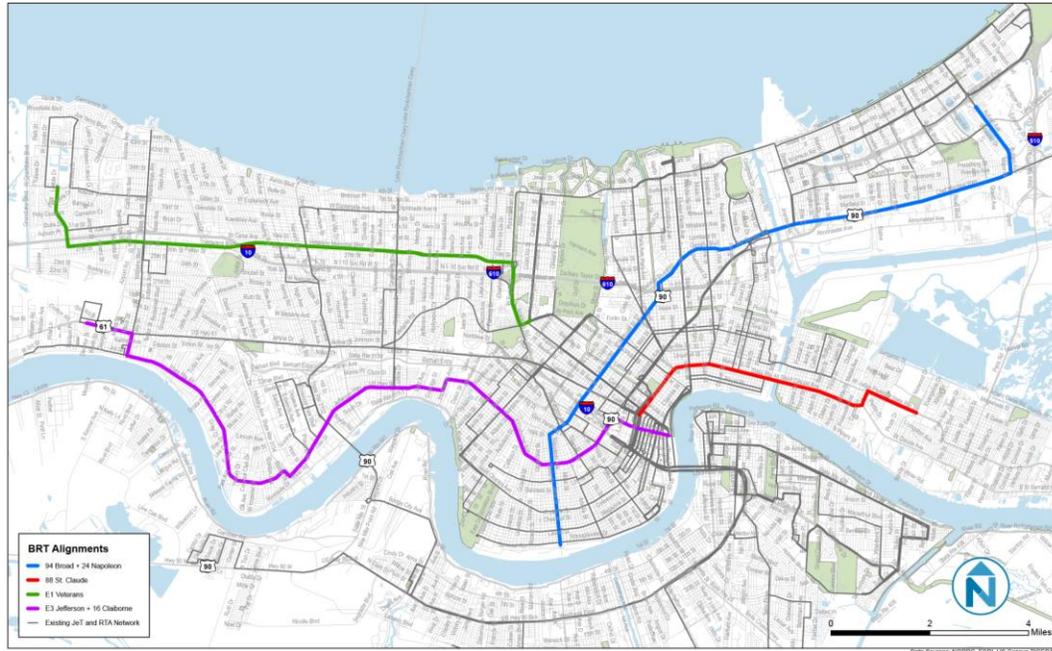
Proposed Transit Network

Based on conversations with RTA staff, the agency plans to add more than 43,000 hours of service to their existing bus routes in 2014. These hours are being allocated across both coverage and productivity routes. Other transit enhancements are planned for key corridors. The Regional Planning Commission’s recently completed Comprehensive Operations Analysis proposes the consolidation of several high ridership routes into four bus rapid transit (BRT) corridors. Of these four routes, the following two have good potential for development:

- **E3 Jefferson Highway + Route 16 Claiborne:** The corridor is long enough for implementation of BRT service. Stop reduction and signal priority have the potential to reduce up to 50 percent of runtime or about 25 minutes. Runtime savings would be attractive for riders to wait and use the BRT service over the local on a typical 3 mile trip.
- **Route 94 Broad + Route 24 Napoleon:** The corridor is long enough for implementation of BRT service. Stop reduction and signal priority have the potential to reduce over 30 percent of runtime or about 20 minutes. Runtime savings would be very attractive for riders to wait and use the BRT service over the local on a typical 5 mile trip.

The Loyola Avenue Streetcar Line opened in January 2013 and future expansion has been planned. The Rampart Streetcar Expansion will bring six sheltered stops on a 1.5-mile route extending from Canal Street to Elysian Fields Avenue. This line is expected to open in 2015 at the earliest.

Figure 12 Planned BRT Corridors



Four potential BRT corridors were analyzed in the Regional Planning Commission’s COA.

Source: Regional Planning Commission and Nelson\Nygaard, Comprehensive Operational Analysis, 2012

Private, For-Hire Options

Residents and visitors also have private, for hire transportation options such as taxi cabs, pedicabs, and private shuttles. While pedicabs are often utilized for the tourist experience (and not necessarily for mobility in itself), taxi and shuttle services are often procured for longer distance trips that are not well served by bike share. That said, bike share supports other public and private transportation services. Rather than viewing bike share as a competitor, representatives from all walks of transportation services and operations in cities across the United States have seen notable symbiosis with bike share. In many cases, bike share can alleviate peak demand (mostly benefiting transit and private shuttles) or eliminating the need to serve short, inefficient trips (particularly in the case of taxis, if priced appropriately). Bike share also supports one-way trips which could possibly encourage greater use of shuttles, transit, or taxis for return trips. Unmet demand during certain hours and special events may be more easily served with bike share. This is particularly the case during JazzFest and major events at the Convention Center and the Superdome.

IS NEW ORLEANS READY FOR BIKE SHARE?

Based on the experience of existing bike share systems and their metrics for success, New Orleans is well-equipped to support a successful and sustainable bike share system. A high-level feasibility determination based on known bike share demand factors is presented on the following page. These factors include urban form factors (population, employment and destination density, and amenities such as parks and programs), visitor population and hotel capacity, policy and planning support,

political support, partner availability, topography, weather, bikeway availability and quality, investment, and advertising potential.

Subsequent chapters will present key risks and sensitivities that might impact the bike share implementation timeline and the long-term success of the bike share system.

Figure 13 Bike share readiness matrix

What makes bike share work?	Readiness Level	Characteristics in New Orleans
Urban form	Medium-High	New Orleans’ dense linear development pattern consists of a variety of destinations serving a variety of travel markets (commuters, shoppers, visitors, students, etc.). Interspersed throughout this linear band of development are well used parks, civic spaces, and land uses that serve residents’ daily needs. Action required: None.
Visitor population and hotel capacity	High	New Orleans accommodates over 9 million visitors per year. Less than half (48%) arrive in a personal vehicle, and they spend about \$10 per day on local transportation. New Orleans has 33,500 hotel rooms (not including private rental units). That’s compared to 33,000 in San Francisco, a much larger city in terms of population and employment. Action required: Perceived competition with taxis, marketing to visitors, and balancing the accessibility needs of visitors and residents.
Major Events	High	New Orleans hosts a number of major events that would benefit from the convenience and flexibility of bike share. Mardi Gras, Jazz Fest, Essence Festival, sporting events, and others face major transportation challenges. Visitors and residents will be able to more easily navigate street closures during these events. Action required: Communicating transportation options to event attendants and promoting bicycle circulation during parades and other events.
Policy and planning support	High	Bike share supports a broad number of local, regional, and statewide planning and policy initiatives, including the New Orleans 2030 Plan, the Complete Streets Policy Ordinance, the Metropolitan Bicycle and Pedestrian Plan, the EPA Technical Assistance for Sustainable Communities: Building Blocks Report, RPC’s Comprehensive Operational Analysis, Public Works’ Standard Drawings for Pedestrian and Bicycle Facilities, and Downtown and Economic Development Studies, among many others. Action required: None.
Political support	Moderate	There is general interest in the ability of bike share to expand mobility options to lower income communities and areas that increase workforce access. However, there is skepticism that the City will be able to provide long-term financial support for the system. Action required: Not all political leaders are familiar with bike share and how it will benefit the city. Additional education and engagement is needed after completing this study.
Partner availability	High	New Orleans has a rich network of community partners that could help a bike share program fund initial capitalization, apply for grants, market and encourage bike share use, work with local businesses, and find job training programs for disadvantaged youth. Bike Easy, Broad Community Connections, Freret Street Main Street, the Downtown Development District, Louisiana Public Health Institute and various private sector leaders, among others, would make exceptional partners in developing a citywide system. Action required: Many community groups and potential funders are unfamiliar with how bike share will benefit the people, businesses, and places they represent.

What makes bike share work?	Readiness Level	Characteristics in New Orleans
Topography	High	New Orleans is much flatter than other cities with bike programs. Topographical elevation variations across the city are less than 20 feet; however structures such as bridges and overpasses do provide some greater elevation changes. This will not be a prohibitive factor for most users. Action required: None.
Weather	Moderate	The humid subtropical climate may be a major barrier to use. For six months of the year, the average high exceeds 80° F and rises to 90° F or higher for June, July, and August. These months are also the rainiest. Mild winters, however, make New Orleans a year-round biking city. November through April is drier, and the lower temperatures make for more pleasant biking conditions. Action required: None.
Sponsor potential	Moderate	New Orleans is home to numerous major employers, including several in the utility, energy, banking and gaming industries that may be interested in being corporate or partial sponsors of the program. Partial or co-sponsorship may come from hospitals, universities, or hotels. Action required: The bike share program leadership will need to seek out title or co-sponsors of the program to help fund and market the new system.
Transit network integration	Moderate	Buses, ferries, and streetcars allow people to access most neighborhoods throughout the city during the weekday. Some neighborhoods have limited access late in the evenings and on weekends. Action required: Prioritizing transit hubs with the greatest need for additional mobility options.
Bikeway availability	Low	Limited bikeway coverage and narrow, uncomfortable bikeway conditions would discourage bike share use. However, the dense network of low-volume, low-speed neighborhood street factor into New Orleans' bikeability even in the absence of improved/designated bikeways. Strategic bikeway development and better wayfinding is required to encourage broader levels of bicycling and bike share use in the future. Action required: The current bike network has gaps between key destinations (e.g. parks, grocery stores, tourist sites, etc.) The City should consider investing in key Uptown-Downtown connections as well as better connections between Mid-City/Lakeview and Uptown/Garden District.
Investment	Low	Capital investment coupled with redevelopment in dense urban districts like the biomedical corridor will help the City achieve the land use intensity needed to support bike share and other transit investments that accommodate short urban trips. However, efforts to increase density are limited. Action required: Current development code does not encourage the co-development of bike share stations with new mixed-use centers. This should be updated.
Advertising potential	Moderate	Sign code restrictions limit the ability to generate advertising revenue in the French Quarter and other historic districts. However, advertising on the bicycles' fenders and baskets is permitted. Outside the French Quarter and other historic districts, there is more potential for advertising at docking stations or information kiosks. Action required: Strict sign code in historic districts will reduce revenue from advertising.

4 RECOMMENDED ORGANIZATIONAL STRUCTURE

Bike share programs can be owned, managed, and operated in a variety of ways. The range of organizational structures currently employed provides a spectrum of different management arrangements, system operators, capital ownership, and financial risk and liability. Each type of organizational structure carries inherent tradeoffs for the public and private sector. Assessing the applicability of various bike share organizational structures for the City of New Orleans and the Regional Planning Commission (RPC) is a foundational element of determining bike share's feasibility. This assessment will highlight opportunities for funding, level of staff capacity and expertise, and other key decisions points such as financial risk and liability.

This section provides an overview of a range of organizational structures along with key characteristics that define each structure. The organizational structures summarized below include:

- Publically-owned, privately-operated
- Non-profit owned and operated
- Administrative non-profit
- Privately-owned and operated
- Publicly-owned and operated
- Owned and operated as part of a street-furniture advertising contract.
- Transit agency-owned, privately operated

The following characteristics will be used in a subsequent phase to help guide the evaluation of a bike share program in New Orleans and determine which organizational structure would work best given the local political environment, partners, and resources.

- **Financial Risk/Liability:** Bike share programs require a significant amount of capital investment (bikes and bike share stations) and come with a high level of liability (equipment safety, crashes, theft, etc.). Who takes on the financial risk and liability issues of the program will be a key decision factor for the City of New Orleans and RPC.
- **Funding Sources:** The organizational structure of the bike share program influences the funding sources available. Publicly-managed bike share programs, for example, do not have the ability to fundraise.
- **Operating Responsibility:** In any bike share system, there is an entity responsible for managing the overall operations of the system, including the customer service call center, remote system surveillance, and redistribution efforts, maintaining bicycle and station maintenance, and providing administrative services, marketing, fundraising. Deciding whether or not the City of New Orleans or RPC have the organizational capacity and expertise to manage and/or operate a bike share program will be a key decision factor.

- **Capital Ownership:** Who owns the capital property of a bike share program (i.e. bikes and bike stations) varies by organizational structure. Bike share programs require significant capital investment; who takes on this responsibility will need to be decided.
- **Separate Capital Vendor/Operator:** In some cases, the vendor who provides the bikes and bike share stations is different from the bike share operator. Bike share programs could benefit from this model since the vendor’s mission to increase its profit margin is separated from the operator’s mission which is to serve its customers.
- **Level of Staff Capacity:** Whether or not the City of New Orleans or RPC have the staff capacity, expertise, or desire to manage or operate the bike share system will play a role in deciding the appropriate organizational structure for New Orleans.

The bike share industry is the newest and fastest growing public transportation sector in North America. As such, the industry is constantly evolving, seeing new technologies, vendors and operators, and even fresh organizational approaches every year. Each innovation or update to the bike share industry offers cities considering bike share an ever expanding menu of technology and organizational options. As such, this report’s organizational recommendation is flexible, allowing the City of New Orleans to respond to changing political, economic, and technological conditions. Whether or not the City employs the organizational structure recommended in this chapter—which is based on current conditions—the selected operator and system manager must satisfy the goals of the bike share program and deliver this new affordable and sustainable mode of transportation in an equitable manner.

ORGANIZATIONAL OPTIONS

The most commonly employed operating models in North America that are applicable in New Orleans are summarized below. Additional detail and case studies related to these organizational options can be found in Appendix B.

Option 1: Publically-owned, privately operated. In this case, a city or region contracts with a private turnkey operator¹⁵. The public entity managing the system often owns the capital (bikes, stations, etc.) and is responsible for establishing a sustainable funding strategy. Funding sources are limited to public grants, membership revenue, and advertising revenue. Decision-making is typically guided by an advisory committee, but is managed through a conventional municipal governance process. Financial risk is assumed by the public entity, while liability coverage is assumed by the private turnkey operator. This structure would require limited staff involvement or expertise from the City of New Orleans and RPC since the main operating functions would be assumed by the private operator. City or RPC staff would be required to manage the contract with the turnkey operator, secure startup funding, and manage/coordinate a decision-making committee internally. Capital Bikeshare in Washington, DC operates under this model.

Option 2: Non-profit owned and operated. Under this model, a private, non-profit organization (either pre-existing or established specifically for bike share administration) manages, owns, and operates the bike share system. The non-profit organization manages a customer service call center, remote system surveillance, and redistribution efforts, maintaining bicycle and station

¹⁵ A “turnkey operator” refers to a private, for profit vendor business that provides bike share services. There are several such companies operating in North America. While their role and responsibility varies from city to city, most turnkey operators are, under contract, responsible for delivering bike share bikes and docking stations, managing communications and software systems, operating and maintaining the bikes and docking stations, and redistributing bicycles as needed. Turnkey operator may also play a role in marketing, funding development, expansion planning, and other administrative tasks.

maintenance, and providing administrative services, marketing, fundraising, etc. Decision-making is handled by a Board of Directors, which includes major private sector sponsors and elected leaders. The non-profit model potentially has a strong ability to leverage funding since it can retain both public funding and also fundraise from private sources. Under this structure, the City of New Orleans and RPC would require limited staff involvement and expertise since the main operating functions would be assumed by the private non-profit operator. Nice Ride Minnesota is an example of a statewide non-profit owner/operator.

Option 3: Administrative non-profit. Another example of a non-profit structure is one that owns and administers the system but does not operate it. In this case, a non-profit is formed to oversee all duties, except for day-to-day operations. The only difference between this and the *non-profit owned and operated* model described above is that the administrative non-profit does not operate the system. Instead, the non-profit often leads all fundraising efforts, prepares purchase orders for bike share equipment, and markets bike share services. The non-profit contracts with a turnkey private operator to implement the system roll out and operate the system. That said, the non-profit can require the turnkey operator or a third party specialist to fulfill any of the administrative tasks as part of the service agreement. Under this structure, the City of New Orleans and RPC would require limited staff involvement and expertise since the main management and operating functions would be assumed by the non-profit and private operator. Strategic decision-making is handled by a Board of Directors under the non-profit. Denver B-Cycle and Seattle's impending system (Pronto Cycle Share) are examples of this business model.

Option 4: Privately owned and operated. In this case, a private operator is procured to operate the system, while maintaining control of the capital. This operating arrangement has been implemented in Miami Beach (DecoBike) and New York City (Citibike). The private operator also takes ownership of fundraising, if necessary (i.e., in some cases, enough user revenue is generated to fund the system). A private operation offers public agencies less control of system size and growth; this depends largely on the private operator's ability to generate revenue and their strategy to turn a profit. This model offers public agencies limited requirement for staff time dedicated to bike share and completely transfers risk to the private operator. A major potential drawback for the City of New Orleans is this model's conflict with the need to become a leader in equitable system design and the likely reliance on subsidy or low profit margins. This option's likely influence on system growth would not sync with the City's desire to integrate bike share into neighborhoods that might not be profitable in the eyes of a private system owner. If the City develops strong operational parameters for the private operator/owner, the system could achieve the bike share program's equity goals. *Based on these reasons and current conditions, this operating model was not selected for further evaluation.*

Option 5: Publicly-owned and operated. In this case, the public agency—be it a city, parish, regional government, transit agency, or state entity—procures and owns the bike share bikes, docking stations, and supporting equipment and manages the day-to-day operations of the system. This includes managing a customer service call center, remote system surveillance, and redistribution efforts, maintaining bicycle and station maintenance, and providing administrative services, marketing, fundraising, etc. This operating model has been used in European and Asian cities (most notably in Guangzhou, China) due to their ability to secure greater public monies to support bike share as a core urban transportation service. There are no North American examples. Due to the lack of leading American examples, stakeholder preferences to separate bike share operations from the City's purview, and the amount of financial risk placed on the City, this option was not viewed favorably. *Based on these reasons and input from this study's stakeholder input process, this operating model was not selected for further evaluation.*

Option 6: Owned and operated as part of a street-furniture advertising contract. This operating model—common to European bike share systems—uses major street furniture advertising contracts (e.g. JCDecaux as funder, manager, and operator). The model relies entirely on the revenue potential drawn from bike share station sponsorship and advertising. Due to New Orleans’s strict public right-of-way and historic district sign codes (governed by the Historic District Landmarks Commission and the Vieux Carre Commission) and the community value of limiting visual clutter in the public view shed and streetscape, this operating model is likely not viable for New Orleans. Additional barriers include a cumbersome approvals process that is too difficult to justify financial risk to potential advertisers as well as a lack of proven experience providing sustainable funding in the United States. *Based on these reasons and input from this study’s stakeholder input process, this operating model was not selected for further evaluation.*

Option 7: Transit agency owned, privately operated. In this case, a transit agency contracts with a private turnkey operator. The transit agency managing the system often owns the capital (bikes, stations, etc.) and is responsible for establishing a sustainable funding strategy. Funding sources are limited to public grants, membership revenue, and advertising revenue. Decision-making is typically guided by an advisory committee, and, depending on the structure of the transit agency, may be managed through a quasi-governance process. Financial risk is assumed by the transit agency, while liability coverage is assumed by the private turnkey operator. In the context of New Orleans, the New Orleans Regional Transit Authority (RTA) staff would be required to manage the contract with the turnkey operator, secure startup funding, and manage/coordinate a decision-making committee internally. This can be an appealing model given that the transit agency’s top priority is to provide useful transit service, rather than generate revenues.

This model is not currently being deployed in the U.S.; however there are numerous European examples including Deutsche Bahn, the rail company in Germany, Dutch Railways in the Netherlands and Veloway (Veolia). Initial conversations considered the RTA as a potential program administrator, but RTA officials currently hesitate to operate the system due to labor costs. *Based on these reasons and input from this study’s stakeholder input process, this operating is currently not being selected for further evaluation.*

Figure 14 on the following page summarizes the various organizational structures and includes examples that are currently or soon to be in operation.

Figure 14 Summary of bike share organizational structures

Organizational Structure	Financial Risk/Liability	Funding Sources	Operating Responsibility	Capital Ownership	Level of Staff Capacity	Peer Example(s)
Publically-owned, privately operated	Financial risk assumed by public entity; turnkey operator takes on liability risk/coverage	Public grants, membership revenue, sponsorship, advertising revenue depending on the jurisdiction	Private turnkey operator	Public entity owns equipment	Medium	Washington D.C. (Capital Bikeshare) Boston, MA (Hubway)
Non-profit owned and operated	Financial risk assumed by the non-profit entity	Fundraising opportunities, public grants, membership revenue, advertising revenue depending on the jurisdiction	Non-profit	Non-profit	Low	Minneapolis, MN (Nice Ride Minnesota)
Administrative non-profit	Financial risk assumed by non-profit	Fundraising opportunities, public grants, membership revenue, possible advertising revenue depending on the jurisdiction	Private turnkey operator	Non-profit	Low	Denver, CO (Denver B-Cycle)
Privately-owned and operated	Financial risk assumed by private company	Fundraising opportunities, sponsorships, membership revenue, possible advertising revenue depending on the jurisdiction	Private turnkey operator	Private turnkey operator	Low	New York, NY (Citibike) Miami Beach, FL (DecoBike)
Publicly-owned and operated	Financial risk assumed by the public entity	Public grants, membership revenue, possible advertising revenue depending on the jurisdiction	Public entity		High	Various European/Asian systems
Transit agency owned, privately operated	Financial risk assumed by transit agency	Public grants, membership revenue, advertising revenue depending on the jurisdiction	Private turnkey operator	Transit agency owns equipment	Medium	Systems in Germany (Call a Bike) and the Netherlands (OV-fiets)
Separate operator and vendor	Financial risk assumed by non-profit, private company, or the public	Fundraising opportunities, public grants, membership revenue, possible advertising revenue depending on the jurisdiction	Private or non-profit turnkey operator or public entity	Private turnkey operator	Low-High depending on operator	Pittsburgh, PA

ORGANIZATIONAL ASSESSMENT

Prior to evaluating the various bike share organizational structure options, the consultant conducted a screening process based on stakeholder input. Three organizational models were selected for further evaluation and final screening based on input from the Project Advisory Committee, Business Advisory Committee, and various other stakeholder groups. **Other options could be evaluated in the future based on developing conditions.** The options that progressed to detailed evaluation include:

- **Option 1: Publically-owned, privately operated**
- **Option 2: Non-profit owned and operated**
- **Option 3: Administrative non-profit**

The following evaluation criteria were used to screen the organizational structure options and select a preferred bike share model for New Orleans:

- | | |
|-------------------------------------|--|
| ▪ Capital ownership | ▪ Ability to support major events (e.g. Mardi Gras, Jazz Fest) |
| ▪ Operational transparency | ▪ Citywide expansion potential |
| ▪ Profit sharing and risk/liability | ▪ Staff capacity / organizational interest |
| ▪ Operating expertise | ▪ Equity |
| ▪ Fundraising capacity | |

The matrix displayed in Figure 15 on the following page summarizes the comparative tradeoff analysis used to evaluate New Orleans’ three organizational model options. Based on the assessment, an **administrative non-profit model (Option 3)** is recommended for implementation in New Orleans. The primary reasons for this recommendation include:

- Ability of a non-profit to achieve key bike share system objectives, particularly those goals related to equity and financial sustainability. Related to equity, an administrative non-profit provides the flexibility to develop, test, and implement innovative solutions to engage disadvantaged communities and remove barriers to entry. Specific programs can be developed under the auspices of the non-profit in order to tackle core equity issues. The use of a turnkey operator does not affect the geographic scope of the system. Turnkey operators, in turn, often play a role in hiring people from disadvantaged communities.
- Ability of a non-profit organization to secure public, private, and non-profit funding sources, including public grant funding, general funds, non-profit contributions, and sponsor support. The administrative non-profit model simplifies the process of receiving and using private donations and there are no restrictions for federal funding being awarded to a non-profit. While the City aims to limit subsidies feeding into the bike share program’s capital and operations, low ridership or the lack of a sponsor is a real risk that may also lead to requests from the non-profit for public funding.
- The City has been historically successful at developing non-profit corporations to carry out city services (e.g. NOLA Business Alliance and the New Orleans Recreation Development Commission). The people of New Orleans tend to trust and place more value on grassroots initiatives and services. A non-profit owner would instill civic ownership, if it is designed to serve the diverse socioeconomic markets housed within the city.
- Potential business partners and private and institutional sponsors in New Orleans expressed a strong support for a non-profit organizational structure (as well as a strong preference to remove the prospective bike share program from the City’s purview).

- Liability and financial risk are not assumed by the City, but rather an independent non-profit with multiple interests serving on the board of directors with a stake in long-term system sustainability. This limits the potential negative public response to liability issues, underperformance, and system failure borne on the City of New Orleans.
- The City maintains the ability to influence station locations, compared to other models where the private operator has more control over service area definition and station locations.
- Provides opportunity for a fresh image and separation of bike share organization from existing political and public process constraints (i.e., ease of contracting, negotiations with private entities, etc.).
- Puts operations in the hands of an experienced private operator, while allowing a local organization to achieve the program's mission objectives.
- Overwhelming positive feedback on the administrative non-profit model from an array of public, private, and non-profit stakeholders.

Based on the success of other non-profit corporations operating in New Orleans, we recommend **establishing a non-profit corporation pursuant to the Louisiana Non-Profit Corporation Law, Title 12, Chapter 2 of the Louisiana Revised Statutes 1950.**¹⁶ While establishing an *independent* 501(c)3 is an option utilized in other systems, the City should leverage the demonstrated success of non-profit corporations established by City Ordinance while capitalizing on the benefits of obtaining and maintaining 501(c)3 status. This will ensure the community, public and private sector partners, and potential funders understand the City's vested interest in fostering a successful bike share program. We do not recommend using an existing non-profit to administer the bike share program, as they do not have the experience to steer a transit operation.

Note: This recommendation is flexible and the City may elect to pursue a different organizational structure in response to changes in the bike share industry or changes in economic conditions.

¹⁶ See Louisiana Revised Statutes 12:201 through 12:269.

Figure 15 New Orleans bike share organizational assessment

Evaluation Criteria →	Capital ownership	Operational transparency	Profit sharing and risk/liability	Operating expertise	Fundraising capacity	Ability to support major events (e.g. Mardi Gras, Jazz Fest)	Citywide expansion potential	Staff capacity / organizational interest	Equity
↓ Organizational Type (and recommendation)									
Option 1: Publicly-owned, privately operated <i>Not recommended.</i>	Public entity owns equipment and must address depreciation and replacement.	<i>Moderate - High.</i> Public entity controls system parameters and growth and establishes operator contract price.	<i>Moderate – High level of risk.</i> Financial risk assumed by public entity (i.e., City/Parish or State). Turnkey operator takes on liability risk / coverage.	Private operator provides operating expertise; public entity provides management capacity.	<i>Low – Moderate.</i> Private and institution funding/sponsorship opportunities limited when compared with non-profit model.	<i>High.</i> The City’s ability to support major events is largely determined by the service agreement with the turnkey operator. Ensuring operations continue during major events would not be as much of a challenge because adjusting the operation using in-house resources would be integrated with necessary permitting and staffing needs.	<i>Moderate-High.</i> Better penetration into areas underserved by other transportation options. Growth might be reliant on additional public funding.	<i>Very low interest.</i> Requires additional FTEs with skills to manage program. No funding available.	<i>Moderate.</i> The public entity will determine station location and how the program integrates into disadvantaged communities. Limited ability to develop supporting programs.
Option 2: Non-profit (NP) owned and operated <i>Not recommended.</i>	NP organization owns equipment and must address depreciation and replacement—as opposed to a public entity.	<i>Moderate.</i> Board of Directors provides transparency to all sector partners.	<i>Low – Moderate level of risk.</i> Financial risk and liability assumed by NP. Growth depends on net revenue including user fees and sponsorship. Revenue is not shared with a private operator.	Limited operator experience can reduce service quality, reliability, and customer satisfaction.	<i>High.</i> NP organization is best positioned to secure public and private funding and can serve as a reliable pass through for public funds.	<i>Low - Moderate.</i> The NP would be able to provide support during major events but would be limited by staff capacity. May need support from the City of New Orleans (e.g., permitting).	<i>High.</i> Expansion guided by financial sustainability and responsiveness to mission.	<i>Moderate interest in non-profit structure.</i> Limited impact on City staff capacity except for public sector representation on the NP’s Board. Existing staff could support program for minor in kind services.	<i>High.</i> Equity decisions and innovation are based on the NP’s mission. Strong ability to develop supporting programs. The City will have some say in station siting and marketing efforts in low-income communities.
Option 3: Administrative non-profit (NP) <i>Recommended for implementation due to minimal public sector risk, ability to attract private support, and ability to expand operations to lower demand neighborhoods.</i>	Either the non-profit owns the equipment and must address depreciation and replacement or the system may be publically owned if federal funds were used to procure capital.	<i>Moderate.</i> Board of Directors provides transparency to all sector partners.	<i>Low level of risk.</i> Financial risk assumed by the NP. Turnkey operator takes on liability risk/coverage.	Private operator provides operating expertise; the NP’s goal is to achieve broader mission and management capacity.	<i>High.</i> The NP organization is best positioned to secure public and private funding and can serve as a reliable pass through for public funds.	<i>Low - Moderate.</i> The NP’s ability to support major events is largely determined by the service agreement with the turnkey operator. A contractual agreement may ensure turnkey operator will provide support during events. May need support from the City of New Orleans (e.g., permitting).	<i>High.</i> Expansion guided by financial sustainability and responsiveness to mission.	<i>High interest in non-profit structure.</i> Limited impact on public staff capacity except for public sector representation on the NP’s Board. Existing staff could support program for minor in-kind services.	<i>High.</i> Equity decisions and innovation are based on the NP’s mission. Strong ability to develop supporting programs. The City will have some say in station siting and marketing efforts in low-income communities.

Evaluation Scale

Evaluation is based on each criterion’s impact on the City of New Orleans as well as their ability to meet the basic goals and objectives established by a group made up of public sector, private sector, non-profit, and citizen representatives that was created to explore opportunities for bike share implementation.



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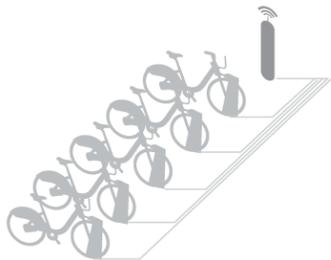
5 RECOMMENDED SERVICE AREA AND PHASING

Determining bike share demand is the starting point of developing a financially sustainable bike share system. This section illustrates the results of the demand analysis and presents recommended service areas and phasing for a station-based system and a hub-based smart-bike system. A second expansion phase has been identified for each system type, which is broadly defined. The service boundary for the second phase could be further segmented into sub-phases (e.g., Phase 2A, 2B, and 2C) based on available funding and community feedback for system sizing and expansion. Future expansion decisions beyond the initial roll out phase would be determined by the future bike share operator. Expansion would also be contingent on availability of operating surplus to expand operations and opportunities to secure capitalization funds (including sponsor, grant, contributions, and more). The section also illustrates conceptual station placement based on target station spacing parameters and adjusted for destination location and orientation toward the street. **Station locations illustrated in maps do not represent final or recommended station locations. Locations and final station sizing should be completed during the pre-implementation phase.**

SYSTEM TYPES ANALYZED

Bike share is a rapidly changing industry. The industry is becoming smarter, more efficient, and more resilient as operators adapt to market preferences and operating challenges, and as technology expands the utility and functionality of this nascent form of public transit. Because bike share is in its formative stages in the transit operations industry, New Orleans has the unique opportunity to assess the viability and strength of multiple types of bike share systems. This will allow the City to establish a system that is uniquely suited to the conditions and needs of the City, its residents, and visitors.

This study analyzes two types of bike share systems. This chapter develops two system scenario concepts and the following chapters convey the cost and operating tradeoffs of each. Chapter 7 presents the recommended system type for New Orleans.



Scenario 1: A traditional dock-based system with technology built into the docking stations



Scenario 2: An emerging hub-based smart-bike system with technology built into the bicycles themselves

Scenario 1: Station-based systems

Station-based bike share systems—the dominant form of bike share now in most U.S. cities.—provide customers a network of stations with payment kiosks and map panels. The rental exchange occurs at the docking point as station-based technology allows users to access a bicycle with a membership card, key fob, or access code following the purchase of a pass at the bike share kiosk or online. Bicycles are then returned to another docking point across a network of stations. Each dock is wired to the payment kiosk along the station’s base plate. Thus, each dock is enabled with wireless communications.

Figure 16 Advantages and issues of dock-based bike share systems



Source: Nelson\Nygaard

Advantages

- Proven technology backed by over 7 years of performance data
- Operations is well understood by bike share operators
- High visibility advertising space
- Docks are clearly identifiable for wayfinding and access/use
- Iconic, predictable, and reliable station locations

Challenges/Issues

- High capital cost
- No flexibility in where users can dock bicycles (relies on dense network of stations)
- Can require substantial rebalancing effort with high commuter use during peak periods
- Potential for proprietary issues with docks, bicycles and technology equipment
- Wireless internet connectivity outages and solar power disruptions can interrupt an entire station

Scenario 2: Smart-bike systems

Originally introduced in Europe, smart-bike systems utilize GPS tracking and an integrated fare payment and locking mechanism built into the bicycles frame. The lock is compatible to fasten with a network of public bike racks (e.g., U-Racks) that can be shared with private bicycles or with hub locations that corral racks for smart-bike use only. For the purposes of this study, the hub-based system is assumed allowing flexibility in the cost and amenity level of each hub location. Hubs can be outfit with rack plates, payment kiosks, and map panels—mirroring the look and feel

of a traditional dock-based system—with networking occurring on the bicycle itself, instead of on at the hub. We recommend eliminating out-of-hub parking to ensure reliable access to bicycles and simplify rebalancing efforts. An alternative approach is to allow users to return their bicycle outside the hub locations for a small fee. If this option is pursued, out-of-hub parking would only be an option outside of historic districts. Historic districts would require parking at hub locations to maintain the system’s orderly appearance.

A primary challenge for the City in selecting a hub-based, smart-bike system is that it is still a relatively new concept in the U.S. and domestic systems are still being tested. As these systems are rolled out, data and performance will be tracked and analyzed to determine needed operational enhancements and logistical challenges of this new system type.

Figure 17 Advantages and issues of hub-based, smart-bike systems



Source: Social Bicycles

Advantages

- Flexible fleet management for operators
- Flexible, modular hub design can include kiosks, map/advertising panels, or just the rack itself
- Lower capital costs (between 25-50% cost savings)
- Lower cost to implement and maintain (enables the potential for expanded service area)
- Opportunity for users to park outside of hub areas
- Opportunity to trip chain (i.e., park a bike outside of a hub location to make quick stops)
- Eliminates dock-blocking issues by allowing users to park at any public bike rack
- GPS data gathering allows the system operator to use data for system planning, assess infrastructure needs, and locate missing equipment

Challenges/Issues

- Costly wireless connectivity fees as the number of internet connections match the fleet size (direct impact on operating cost)
- Limited experience in the United States and almost no data available
- Rebalancing could be complicated and unpredictable if out-of-hub parking is permitted
- 3G wireless internet connectivity outages can disrupt an entire fleet rather than one hub location (especially problematic during large events when wireless connectivity is in large demand in localized areas of the city)
- Out-of-hub parking may limit reliable access to the system and complicate rebalancing, more so than with station-based systems
- Lack of existing bicycle rack facilities (only a challenge if docking is permitted outside of hubs)

CONDITIONAL SYSTEM RECOMMENDATION

This report clearly presents the functionality, system sizing, costs, revenue, and funding gaps for two conceptual bike share system types: A station-based scenario and a smart-bike, hub-based scenario. Based on the data and evaluation that follows, we recommend the City of New Orleans and the future operator develops a hub-based, smart-bike bike share system. Key rationale for this recommendation includes:

- Reduces station costs by twenty to fifty percent while maintaining similar functionality and aesthetic appeal as station-based system.
- Enables larger system coverage with the same capital cost (e.g. covers the same service area in Phase 1 as the station based system's Phase 2 service area)
- Substantial coverage area can be achieved beyond the first phase of implementation (depending on funding availability)
- More flexibility for the user and better integration with the fixed route transit system
- Serves a greater number of low-income neighborhoods, better connecting them to job centers and transit
- Doubles the potential long-term job creation at system build out than the station-based bike share system

We must caveat this recommendation, however. The hub-based, smart-bike concept is untested in a large urban area where trip chaining and out-of-hub parking can create cost complexities. While we believe this to be the best existing alternative for the City of New Orleans to achieve the stated objectives, optimize available funds, and embrace forward-thinking technologies; we recognize that such systems are still in their infancy in the U.S. and New Orleans can and should continue to monitor and learn from the experience of cities who have adopted the new approaches.



The City and its future operator should pursue a hub-based, smart-bike system, if this nascent system type proves successful where they have recently been launched (e.g., Phoenix and Tampa).

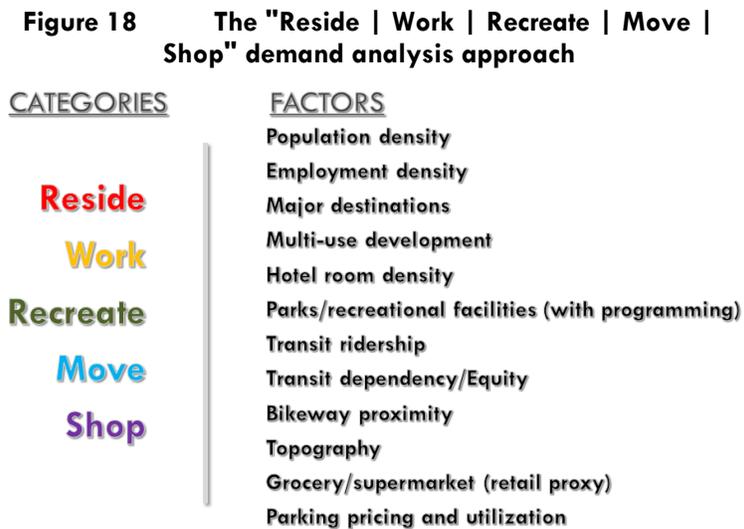
Source: Coast Bike Share

The City of New Orleans should proceed with implementation of the bike share non-profit over the next 5-6 months. In the meantime, City officials and interim Board members should coordinate with and track the performance and functionality of North American smart-bike systems in Phoenix, AZ (Grid Bikes), Tampa, FL (Coast Bike Share), and Hamilton, Ontario (Hamilton Bike Share), among others. In particular, the cost estimates included in this analysis should be compared to actual experiential costs of these systems as they become available and the numbers re-run if necessary. Areas of potential under-estimation of costs include self-balancing rates, price insensitivity to out-of-hub charges, and increased operating costs greater than revenue generated. If costs for the smart-bike system prove to be comparable to a station-based system, New Orleans should reconsider a station-based system. For this reason, this report continues to present data for both system types in the sections and chapters that follow.

DETERMINING BIKE SHARE DEMAND

This study uses a number of key assumptions based on available data to determine demand for bike share use in New Orleans. An initial assumption is that the system would be administered through a non-profit and operated by a private turnkey operator. Using this key underlying assumption, a phased system plan was developed seeking to attract the highest demand travel markets and greatest sponsorship opportunity as possible during Phase 1. The City and stakeholders engaged during the study process agreed it was important to establish a highly productive core ridership base that would generate the initial value of a new public transit system, while helping to finance future expansion. This assumes that the travel profile (high demand for short trips) and price insensitivity of a concentrated visitor market in New Orleans’ French Quarter and adjacent central city neighborhoods would serve as the initial base service area.

Bike share demand was determined by a weighted composite index methodology using a variety of bike share demand factors characterized as *Reside | Work | Recreate | Move | Shop*. These demand factors are proven indicators of bike share use propensity in systems across North America. Our estimation of demand is conservative, so not to overstate ridership and its corresponding impact on revenue generation. Equity was a foundational component of establishing the initial roll out and future expansion phases—balancing the need to establish a sustainable and productive ridership base with broad access to neighborhoods with diverse socioeconomic characteristics. The proposed system launch approach will expand coverage carefully in order to ensure long-term sustainable operations while accomplishing the public transit function of bike share.



The recommended system plan and phasing is based on an underlying demand analysis using the *Reside | Work | Recreate | Move | Shop* approach
 Source: NelsonNygaard

The demand factors employed for this plan (shown above) are based on data provided by RPC, the City of New Orleans, and the New Orleans Convention and Visitors Bureau. Demand factors were weighted based on their relative influence on trip generation, mode choice, and trip frequency. Demand scores were illustrated using a heat mapping approach. This approach conveys spatially relative demand and conceptually displays station density needs to be greatest in order to capture ridership potential (see the following section for more information on the station density parameters applied to the recommended Phase 1 and 2 system plans).

The inputs to the demand analysis and ridership forecast pivot model are summarized below with relative levels of importance.

Demand analysis inputs with relative levels of importance

The following list represents the demand analysis inputs for the New Orleans Bike Share Feasibility Study and Business Plan. These inputs were chosen based on known factors that impact bike share ridership (as well as available data) and relative weighting was developed based on local market conditions and ridership relationships in existing systems.

- Population Density **Very high**
- Employment Density **High**
- Restaurants **Medium**
- Retail **High**
- Transit Ridership **Low**
- Major Transit Transfers Points **Medium**
- Hotel Room Density **Very High**
- Parks **Low**
- Equity **Medium**
- Mixed-Use Developments **High**
- Existing Bike network **Medium**
- College Enrollment **Very Low**
- Major Destinations **Very High**

Ridership forecast inputs

The ridership forecasting methodology chosen for the feasibility study is a peer-based and data-driven direct generation pivot model approach. Ridership estimates are pivoted off of known productivities from peer systems and adjusted based on the prospective annual service timeframe in New Orleans (i.e., 365 days based weather and year-round demand). The productivities in each peer city (Capital Bikeshare, Miami Beach DecoBike, Chicago Divvy, Boston Hubway, and Nice Ride MN) were adjusted based on the following factors:

- Productivity (average daily rides per bike)
- Number of bike share trips (annually)
- Number of days of operation
- Number of bike share bikes
- Number of bike share stations
- Rides per bike

- Rides per capita
- Bikes per capita
- Bikes per square mile of service area
- Service area population and employment density
- Downtown parking costs (/ hr)
- Destination density (Area Walkscore proxy)
- Transit boardings (number of unlinked trips) per capita
- Number of tourists and visitors
- Number of hotel rooms per bike
- Number of university students
- Bikeway network density
- Bikeability, walkability, and transit orientation measures
- Bike share revenue operations (#bikes*#days operation)

This approach estimated a Year 3 season ridership range. A pivot model is a way to estimate ridership potential based on observed function of existing bike share systems. The model aggregates a host of factors assumed to be associated with ridership coupled current system statistics. Adjustments are made to remove some of the influences (+/-) that may distort current ridership figure. With these adjustments made, it is possible to develop an estimated ridership by “pivoting” off of average ridership of existing peer systems and adjusting outlier ridership phenomena based on known ridership factors.

Adjustments were applied to metrics that may be factors associated with ridership. The amount of adjustment per metric was determined by the assumed influence of the metric. For example, the cost of parking downtown and number of university students were not assumed to be as strongly associated with bike share ridership as the number of bikes in the system and the number of tourists who visit annually. These assumptions are based on actual ridership relationships. Adjustments ranges were placed on each metric using assumed influence. The adjustments were applied based on the distance from the average each city’s metrics were. These adjustments were totaled and the total adjustments were multiplied by the calculated productivity and then added to the productivity numbers. This calculation was averaged and then multiplied by .95 and 1.15 to give a range of relative productivity.

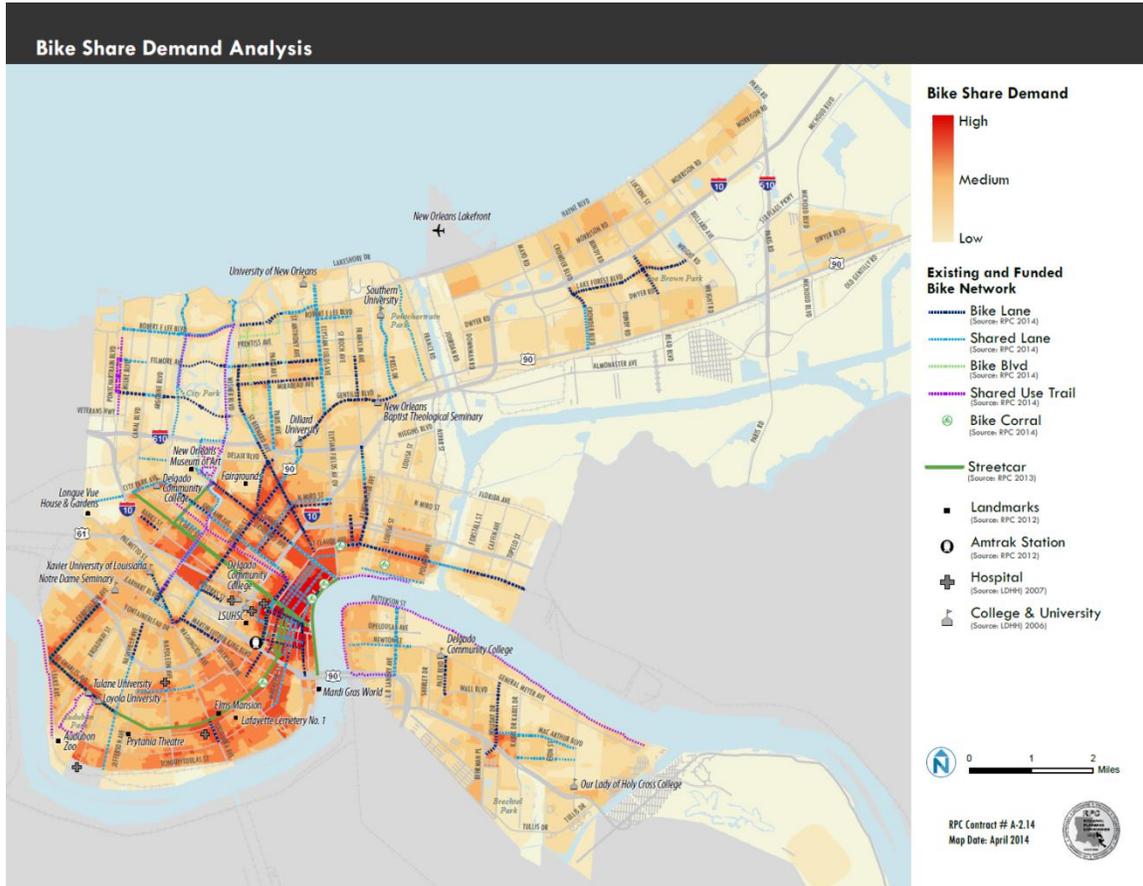
The Ridership Estimate is taken from the Revenue Operations calculations multiplied by the average, .95 and 1.15 ranges of relative productivity. This number represents the average estimated ridership of the peer systems were all associated (negative and positive) factors to be assessed. Actual numbers rely on system size and associated factors.

Figure 19 displays the clusters of bike share demand in New Orleans. Key “hot spots” where bike share demand is highest include the French Quarter, the CBD, and streetcar corridors along Canal and Carrollton. Propensity for bike share use drops off to moderate and low levels as you move to neighborhoods up and down river of the major visitor and employment centers.

It should be noted that this demand analysis and initial service area recommendations in subsequent sections are based on current conditions. As new land uses and major trip generators are introduced (e.g., LSU and VA Hospital facilities), demand for bike share trips will likely increase. This could necessitate new stations/hubs or increased capacity at existing stations/hubs.

Initial station/hub locations anticipate some of these changes, but not all. Final station/ hub locations will need to be refined during the system’s pre-implementation phase.

Figure 19 New Orleans Bike Share Demand Analysis Results



Source: Nelson\Nygaard

PHASE 1 AND 2 SERVICE AREA BOUNDARIES

The recommended Phase 1 and 2 service areas for both the dock-based and smart-bike, hub-based systems (Scenarios 1 and 2, respectively) were defined based on six main factors:

- Connectedness of demand clusters/destination density
- Network barriers (both bikeway network barriers that can be improved and street network connectivity challenges that may be difficult to overcome)
- Geographic constraints (e.g., waterways/levees)
- Connections to streetcar corridors, retail corridors, and trail facilities
- ¼ mile access buffer (based on typically tolerance for walking to public transit)
- System costs (summarized in Chapter 6)

Phase 1 Scenarios, Station Spacing, and Station Locations¹⁷

The recommended Phase 1 service area for Scenario 1 – dock-based system - (shown in Figure 21 on page 5-13) encompasses 3.19 square miles of central New Orleans serving Marigny, French Quarter, Iberville, the Central Business District, and portions of the Lower Garden District, Central City, Treme/Lafitte, and the Seventh Ward neighborhoods. In Scenario 2 – smart bike based system - (shown in Figure 22 on page 5-14), the recommended Phase 1 service area includes all neighborhoods within the Scenario 1 service area and expands system access to the Garden District, Irish Channel, and greater portions of Treme/Lafitte. It also provides access to the periphery of Bayou St. John and Central City.

The Phase 1 launch plan for Scenarios 1 and 2 exhibits varying levels of station density, and sizing. These differences are summarized in Figure 20. Scenario 1 assumes a 60-station network, while Scenario 2 enjoys a denser, more expansive network of 89 hub locations. This equates to average station density of 18.8 stations per square mile and 15.8 hubs per square mile, respectively. In both scenarios, station spacing varies roughly by relative demand in portions of the French Quarter and the CBD. Denser station spacing levels of 800 feet is applied to higher demand districts like the French Quarter and downtown, whereas most other districts exhibit station spacing between 1,000 and 1,300 feet.

These station spacing and station density standards are not applied arbitrarily. Rather, they represent the experiences of some of North America’s most successful bike share systems in cities with similar density and development patterns as New Orleans. More information related to station spacing and density standards are provided in the *System Parameters* section below.

¹⁷ Scenario 1 expansion assumes very incremental growth, while Scenario 2 expansion is full build-out. Scenario 1, Phase 1 should be considered a “demonstration” project, while Phase 2 is considered an expansion on Phase 1. Scenario 2 Phase 1 is a true phase 1 (rather than a demonstration), while Phase 2 is considered full build out of the bike share system. Scenario 2 Phase 2 would likely roll out incrementally in sub-phases.

Figure 20 Proposed system size scenarios

Characteristics	Scenario 1, Phase 1: Dock-based	Scenario 1, Phase 1 & 2: Dock-based	Scenario 2, Phase 1: Smart-bike Hubs	Scenario 2, Phase 1 & 2: Smart-bike Hubs
Area	3.19 sq. mi.	5.73 sq. mi.	5.64 sq. mi.	22.19 sq. mi.
Number of stations/hubs	60	82	89	366
Number of bicycles	827	1,001	1,245	3,924
Number of docks/racks	1,580	1,906	2,389	7,470
Station/Hub density	18.8 stations per sq. mi.	14.3 stations per sq. mi.	15.8 hubs per sq. mi.	16.5 hubs per sq. mi.
Dock-bike ratio	1.91	1.90	1.92	1.90

Note: Final station density may vary depending on the final station location plan.

Phase 1 station and hub locations for Scenarios 1 and 2, shown in Figure 21 and 19, were assigned throughout the street network based on recommended station spacing standards established above. The station locations were then adjusted based on several factors including:

- Clumping of stations at major destinations or major transit corridors
- Entrances of key destinations (including major tourist attractions)
- Major transit transfer locations
- Future redevelopment sites or major capital investments (e.g., Lafitte Greenway)
- Streets with bicycle infrastructure (conversely, shying away from high volume, high speed streets)
- Recreational hubs (e.g., parks and neutral grounds with trail facilities)

Upon completion of this study and development of the bike share operator, station locations should be further refined and finalized to provide direct station access from destinations and ensure stations’ spatial requirements adhere to local codes.

Phase 2: Future Expansion

As illustrated in Figures 23 and 24, Phase 2 expansion patterns vary significantly in Scenario 1 and 2 due to assumed cost savings from the lower capital costs of the smart-bike, hub-based system. We assume that all or part of the expanded service areas would likely occur within the first five years of operation. In Scenario 1 (station-based), minor expansion would occur at high to moderate demand clusters in the Garden District, Treme, and Lafitte.

In Scenario 2 (smart-bike, hub-based), expansion would occur in a more dramatic fashion, although this level of growth would likely need to be managed by sub-phase. Scenario 2 Phase 2 includes expansion beyond the Phase 1 service area to contiguous clusters of high, moderate, and low demand areas such as Mid-City, Central City, Bayou St. John, Treme, Lafitte, Hollygrove, Leonidas, Carrollton, Freret, Uptown, Bywater, St. Claude, the Seventh Ward, the Fairgrounds, and the south end of City Park, among other neighborhoods. For a comparison, Scenario 1 Phase 2 only serves 24% of the Scenario 2 Phase 2 build out service area. This is a substantial difference in service coverage. If the Scenario 1 Phase 2 service area were to match the Scenario 2 Phase 2 service area and fleet, the capital cost would come at a 288% premium (roughly \$17.4 million versus \$6.0 million). This was deemed unreasonable to fund given the funding and potential sponsor environment in New Orleans and Louisiana in general. Thus, Scenario 2 Phase 2 operates as potential implementation beyond Phase 1 that could be broken into multiple sub-phases as

funding becomes available. This explains Scenario 2 Phase 2's larger service area. Other benefits of this service area include service to key districts and corridors like:

- Biomedical corridor, with connections to nearby universities
- Esplanade Avenue, offering duplicative transit service to the adjacent neighborhood and alternative access options for residents and visitors attending major events at the Fairgrounds and City Park
- Major retail and commercial corridors like Freret Street, Magazine Street, St. Claude Avenue, Carrollton Avenue, South Claiborne Avenue, and St Charles Avenue
- Universities and major institutions like Tulane, Loyola, LSU Health Sciences Center, Xavier and Delgado Community College
- Redeveloping corridors and districts like Claiborne Avenue, Broad Street, the Lafitte Greenway, and OC Haley



Areas like Esplanade Avenue in Tremé are proposed for bike share service in Phase 2 of the smart-bike, hub-based system (Scenario 2).

Source: Nelson\Nygaard

In both scenarios, system expansion is recommended to occur as bicycle infrastructure is implemented to better connect these areas to the Phase 1 service area and between areas outside the Phase 1 service area. This would help increase propensity for using the system and connect more central demand centers to the edges of the service area boundary.

Implementing Phase 2 expansion opportunities depend on a variety of factors, including public response to bike share, fiscal health of the operator after initial launch, Board of Director decision-making, as well as funding availability. *Scenario 2 Phase 2 represents a conceptual service area that can be supported in the near term given current land uses, demographics, and bicycle infrastructure.¹⁸ This is a scenario that should be further segmented into sub-phases by*

¹⁸ The recommended service area is not necessarily considered a full system build out. This recommendation is based on current demand factors. As land uses and demographics shift and bike share technology and service delivery are improved, the recommended service area boundary could be augmented to serve other neighborhoods that are not included in the Scenario 2 Phase 2 system.

the bike share operator. Phasing should be determined by the “Criteria for expansion” section below. This will allow the system to grow in areas with greater demand or interest and give the operator (and its Board of Director strategic decision-makers) greater control in managing system expansion.

Key Neighborhoods not Considered for Expansion

While a large number of neighborhoods in New Orleans are well-suited for bike share—particularly in the smart-bike, hub-based system—more remote, less dense neighborhoods were not included in the Phase 1 or Phase 2 system plans of either system scenario. This is largely due to a lack of bike share demand and a lack of connectivity. In non-contiguous neighborhoods like New Orleans East and Algiers, system expansion would increase operating cost substantially as it would require additional service/rebalancing vehicles and storage facilities. Some of the neighborhoods not recommended for Scenario 1 or 2 system service include:¹⁹

- Gentilly
- City Park north of I-610
- Lakeview
- West End
- Algiers and areas down river (i.e., Westbank of Orleans Parish)
- Lower Ninth Ward / Holy Cross
- New Orleans East

These neighborhoods are not recommended for bike share on the basis of technical feasibility. However, the bike share program may want to include these areas as part of its equity initiative (see Chapter 9 for more details). Prior to system implementation, the bike share operator, the City, and local stakeholders should engage these neighborhoods and the broader community to gauge interest and determine the appropriate action to provide system access for use in other areas of the city.



Although bike share could provide a key last mile transit connection for ferry passengers, the Algiers Point neighborhood lacks basic conditions that figure into bike share demand, including population density, destinations, and bicycle facilities, among others.

Source: Image from City of New Orleans and Daniel Lobo

¹⁹ Some portions, but not all portions, of lower-income neighborhoods like Leonidas and Hollygrove are out of the ¼-mile walk buffer to a bike share station or hub location.

Figure 21 Scenario 1, Phase 1 System Plan (Station-Based System)

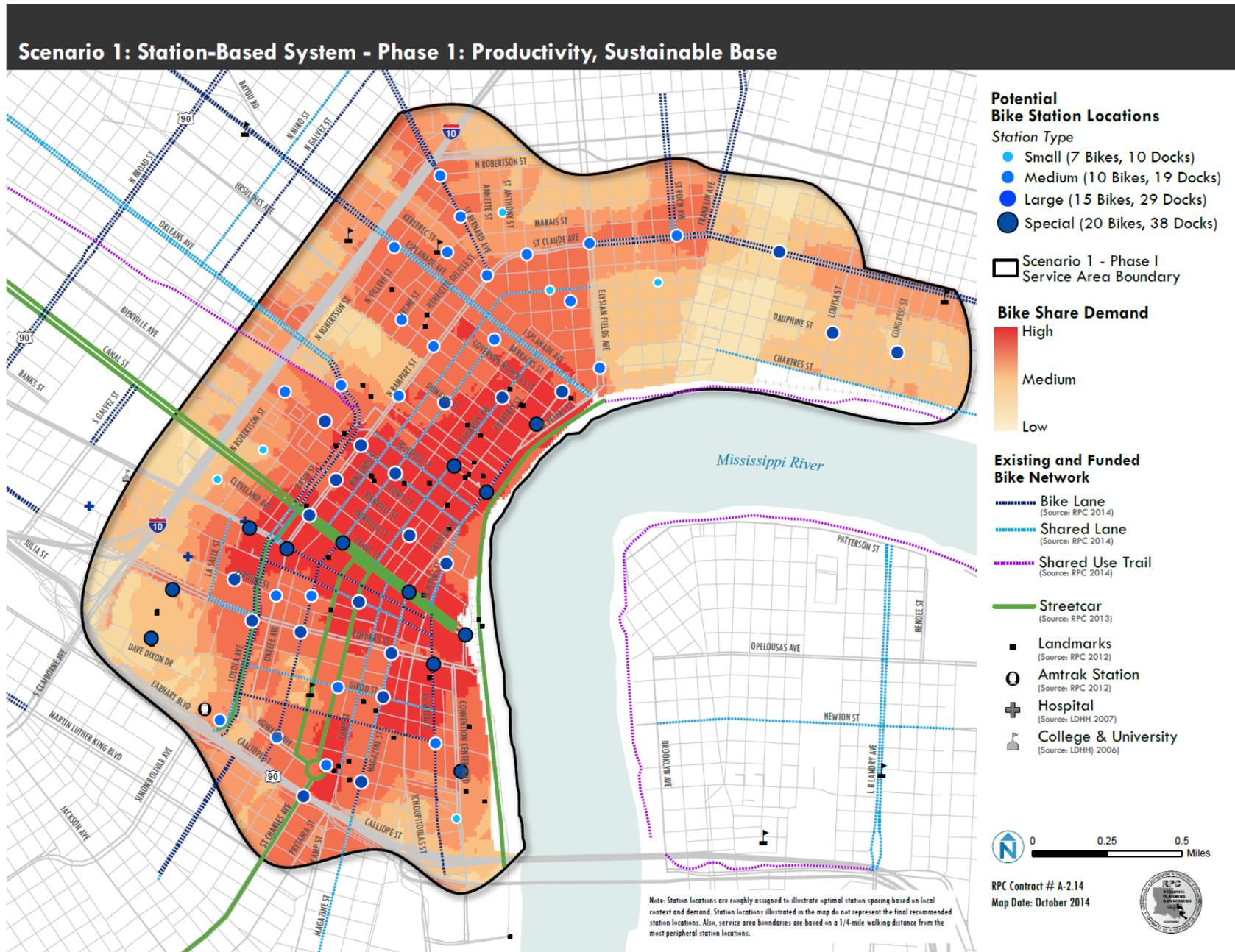


Figure 22 Scenario 1, Phase 2 System Plan (Station-Based System)

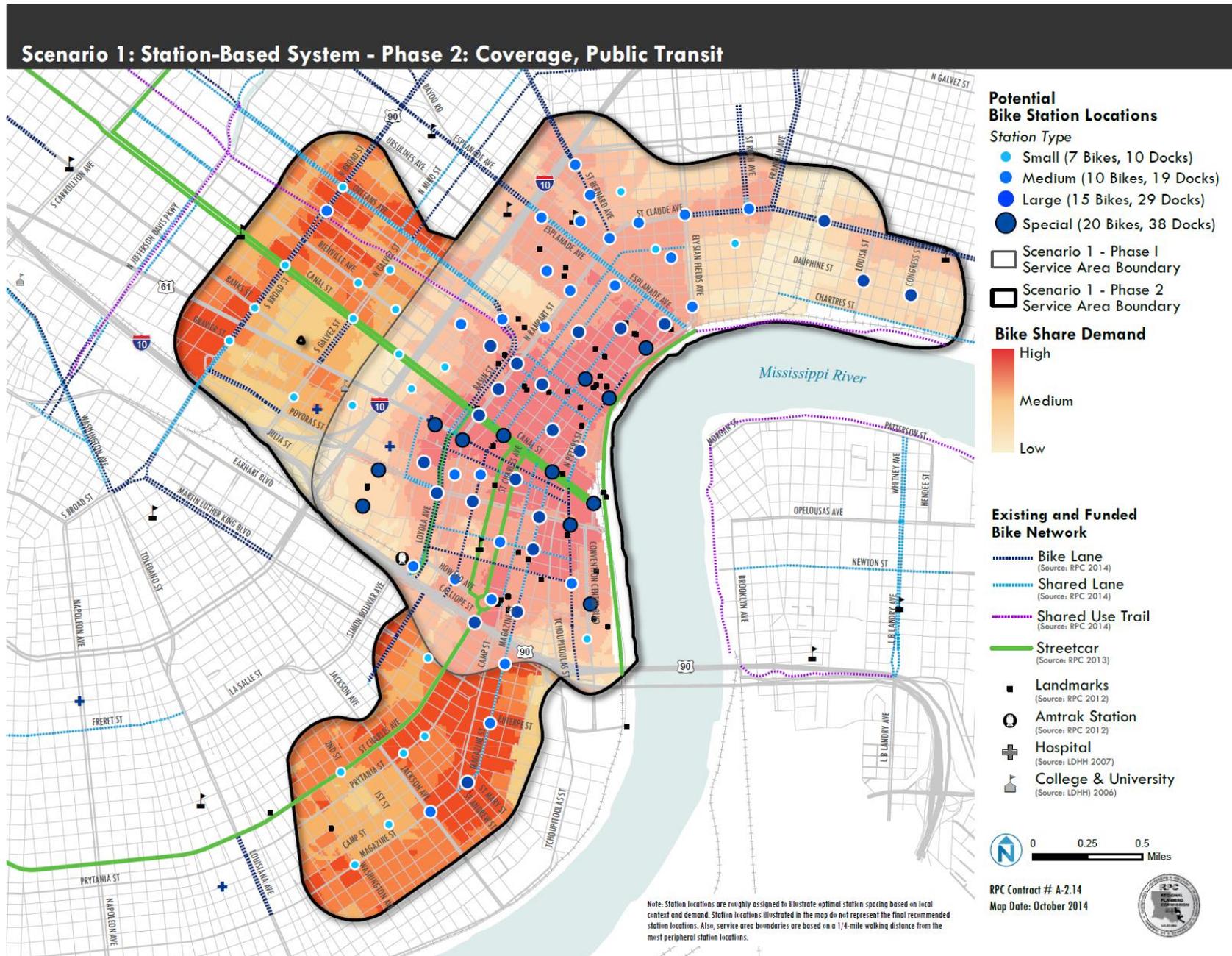


Figure 23 Scenario 2, Phase 1 System Plan (Smart-Bike, Hub-Based System)

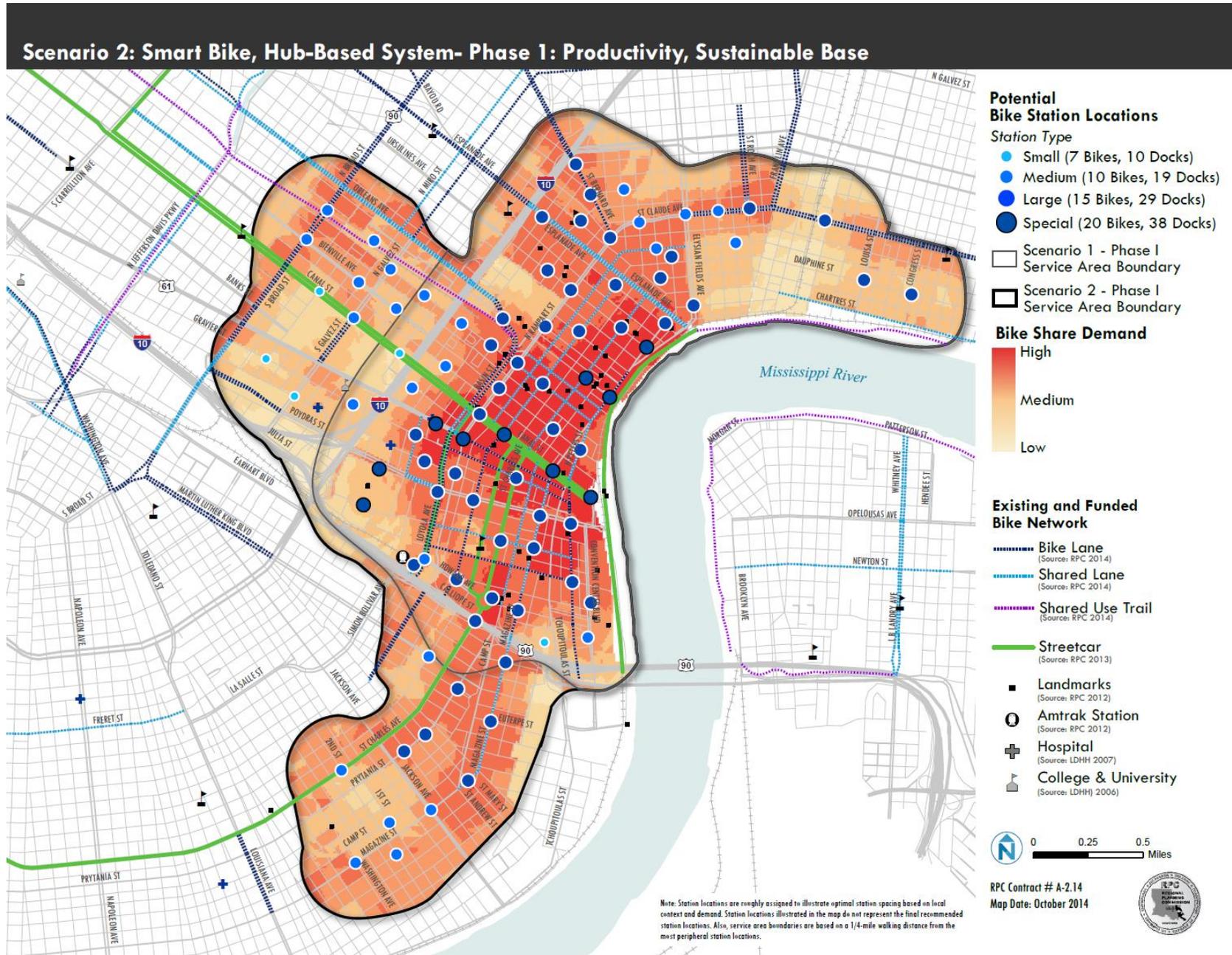
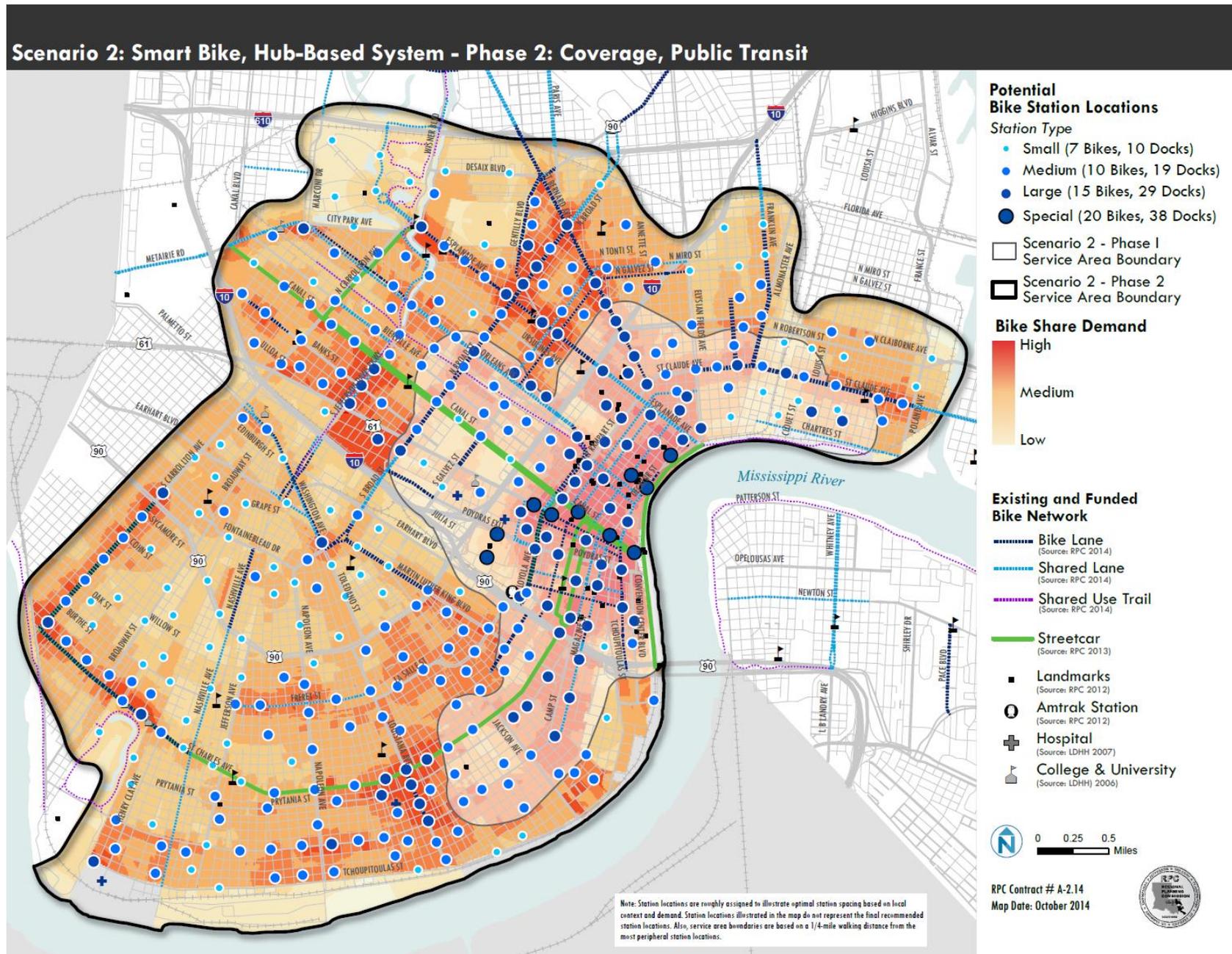


Figure 24 Scenario 2, Phase 2 System Plan (Smart-Bike, Hub-Based System)



SYSTEM PARAMETERS

The following system parameters aim to guide the future bike share operator as it plans its initial system launch. These parameters will also lend guidance as to when, where, and how to expand the service area. Factors include station spacing and density, out-of-hub parking, dock/rack availability, station types, expansion criteria and sizing, and measures of success.

Station spacing and density standards

The importance of establishing a dense network of stations or smart-bike hubs boils down to *time and effort* from a user access standpoint and *money* from a bicycle redistribution standpoint. Customers should ideally walk only five to ten minutes to access a bicycle and be provided numerous locations for docking options if a station’s docks or hub’s racks are full.²⁰ Paris’ Vélib bike share system established a benchmark for successful station spacing, boasting station density of 28.5 stations per square mile (citywide). This equates to roughly one station every 900 feet—a standard that other systems strive to support. However, station density can differ throughout the service area since districts typically exhibit relative levels of street connectivity and bike share demand. This is the case for most of central New Orleans (e.g., French Quarter, CBD, and corridors like Magazine Street versus lower demand locations like Broadmoor). The bike share operator must maintain station density and spacing standards while limiting the following two station/hub placement conditions:

- Placing stations/hubs on the same block (unless on a long block face with enough demand); or
- Placing stations/hubs less than two blocks from each other (due to street connectivity).

As the system expands, station spacing and density standards will likely need to be loosened to account for the lack of destination density, street connectivity, and bike share propensity. A recommended maximum standard is one station every 1,300 feet or 15 stations per square mile.

Figure 25 Station density and spacing comparison

System	Stations	Bikes	Station density (#/mi ²)
New Orleans			
Station-based, Phase 1	60	827	18.8
Station-based, Phase 1 & 2	82	1,001	14.3
Smart-bike, hub-based, Phase 1	89	1,245	15.8
Smart-bike, hub-based, Phase 1 & 2	366	3,924	16.5
Hubway (Boston)	110	1,100	26.4
Capital Bikeshare (DC)	231	1,850	5.6
Divvy Bikes (Chicago)	222	2,200	6.7
DecoBike (Miami Beach)	115	1,000	53.4

²⁰ The smart-bike, hub-based system always offers the relief valve of parking at a public bike rack for a nominal fee.

Out-of-hub parking

For the smart-bike, hub-based system (Scenario 2), we recommend not allowing parking outside of the hub locations. Prohibiting out-of-hub parking now would reduce the flexibility of the system, but increase the availability of bicycles. To take advantage of the smart-bike capabilities, however, a “hub” area should be considered not only the designated corral but some compact area around it – say within 100 feet to mitigate concerns about stations potentially being “all full.”

If the bike share program decides to allow out-of-hub parking, setting a high out-of-hub parking fee will be critical to discourage parking away from established hubs, and maintain some level of reliability for bike share’s customers. The operator must balance the user value of parking a bike when and where they want (on-demand parking) with system reliability and legibility (parking based on available supply). If out-of-hub parking is pursued, we recommend the bike share operator eliminate the possibility for out-of-hub parking in the historic districts. Based on conversations with the Historic District Landmarks Commission (HDLC) and the Vieux Carre Commission (VCC), it was determined that the smart-bike, hub-based system was deemed a palatable system option from an aesthetic and design stand point, only if the system maintains orderly parking in the historic districts. The most feasible way to do this is to program the system to encourage parking at hubs (or within a few feet of the hub locations).

Dock/Rack availability

Much like traditional public transit, the utility of bike share may only be realized if the service is perceived as efficient and reliable. Providing enough dock availability at trip destinations to quickly end a bike share trip is a critical reliability factor that can develop a long-term or annual subscription user rather than a one-time or once-per-year user. Stranding users at full stations should be avoided as much as possible. Therefore, a 1.9 dock/rack per bike ratio is recommended to ensure bikes can be reliably returned at stations near users’ intended destination and to reduce redistribution costs. This is particularly important in hub-based systems where smart-bikes can be used to park to any public bike parking rack (unless in a historic district, as recommended above).

Stations and hub locations should be sized based on projected demand, actual use rates (once the proposed system is operating), and proximity to major demand generators. For example, although maintaining the same 1.9:1 dock-to-bike ratio, a neighborhood retail center would likely require less docks and bikes than the Superdome, which would create large pulses during sporting or other entertainment events.

Sample station or hub types and siting

The number of bicycles and docks at any given station shown in the Phase 1 and 2 preliminary station locations was established by determining the relative demand of each station location and applying an appropriate station size to meet that demand.²¹ Larger stations were designated for locations that have massive demand throughout the day or during peak flows (e.g., after the ending of a convention center, sporting, Jazz Fest event). These peak flows often require redistribution shortly thereafter. Station accommodations can range between 7 bicycles with 10 docks and 20 bicycles with 38 docks. While this range is flexible and depends on demand and

²¹ Station sizing and design will need to be refined during next phase of implementation.

peak flows, it also roughly adheres to the dock-bicycle ratio standard listed above. The final station designs will include station sizes that vary slightly from this sample station typology.

Station or rack sizing also depends on right-of-way available to locate bike share facility. The following types of station or hub locations are recommended

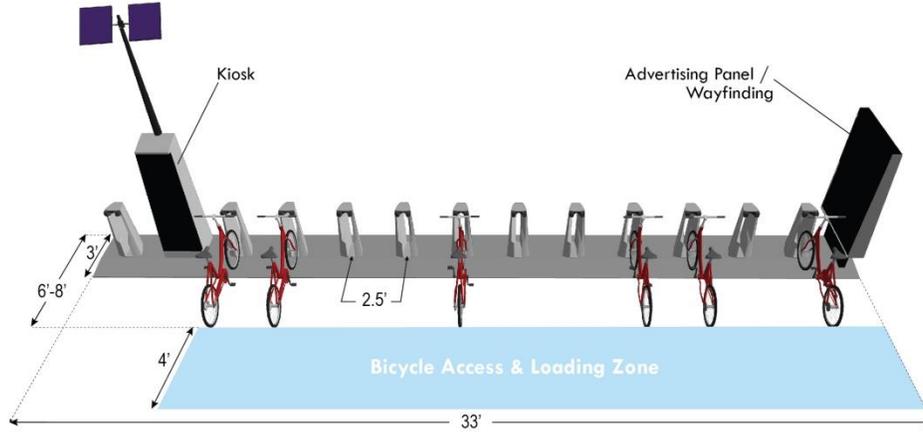
- **Sidewalks greater than 12’:** The lack of available sidewalk space in New Orleans is pervasive and limits bike share siting significantly—particularly in the historic districts. Bike share stations should be located in the furniture zone unless spatial constraints dictate the station’s location in a building frontage zone.
- **Parking stalls:** On-street parking stalls can be repurposed for a large number of bike share docking stations or hub locations. This is likely the best opportunity for station/hub location siting throughout the city.
- **Public or private surface parking stalls:** Off-street surface parking stalls can be repurposed for bike share docking stations or hub locations. This should only be considered if the proposed site is clearly visible from the street.
- **Park space:** In coordination with the Parks and Parkways, bike share stations could be located on park land. This is likely not subject to USDOT Act of 1966 4(f) Evaluation and Approval due to the non-permanence of stations and hubs.
- **Neutral ground:** The neutral grounds located throughout the city offer substantial space for bike share stations or hub locations. This is likely not subject to USDOT Act of 1966 4(f) Evaluation and Approval due to the non-permanence of stations and hubs.
- **RTA property:** Co-locating bike share with transit passenger facilities ensure seamless connections between transit modes and reinforces the last-mile link that bike share would likely fulfill for outlying neighborhoods. Based on conversations during the planning process, RTA is interested in working with the bike share program to site bike share on or near RTA facilities. This collaboration is viewed as an opportunity to attract future transit ridership.
- **Private property:** This includes sites on private property that are visible and accessible from the public right-of-way and supported with wayfinding signage, as feasible per New Orleans’ sign code.

Where right-of-way is constrained or bike share access is challenging due to arterial traffic conditions, stations or hub locations should be sited on side streets as close to the intersection as possible. Figure 26 presents a series of graphics that demonstrate the basic station designs and dimensions for a variety of station configurations and requirements for parking ingress and egress. Figure 27 on page 5-24 displays the basic configuration and ingress/egress plan for a smart-bike, hub location. The dimensions of the smart-bike hubs are much more flexible than station-based floor plates as each rack includes an individual floor plate.

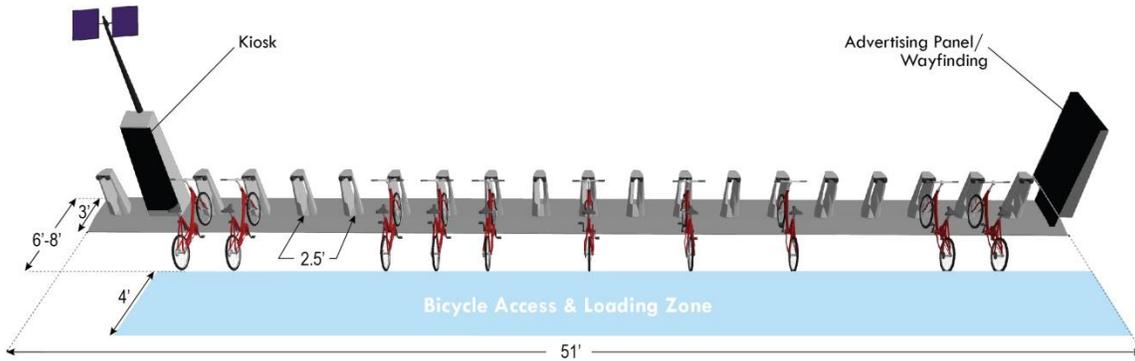
As the bike share industry matures and equipment vendors respond to the unique needs of system owners, station equipment are becoming more flexible in their design and respond to the unique challenges of the urban built environment.

Figure 26 Bike share station-based dimensions and access requirements

Type: Linear	Capacity: 12 docks	Notes: Ideal for more constrained spaces and locations with lower demand.
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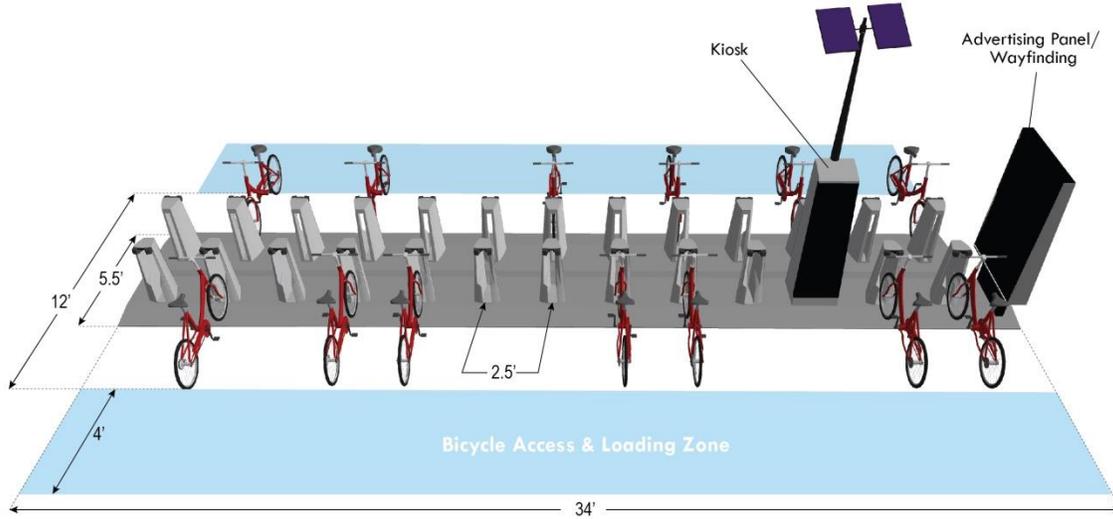
Type: Linear	Capacity: 19 docks	Notes: Requires larger spaces that are unobstructed by utilities and other physical features.
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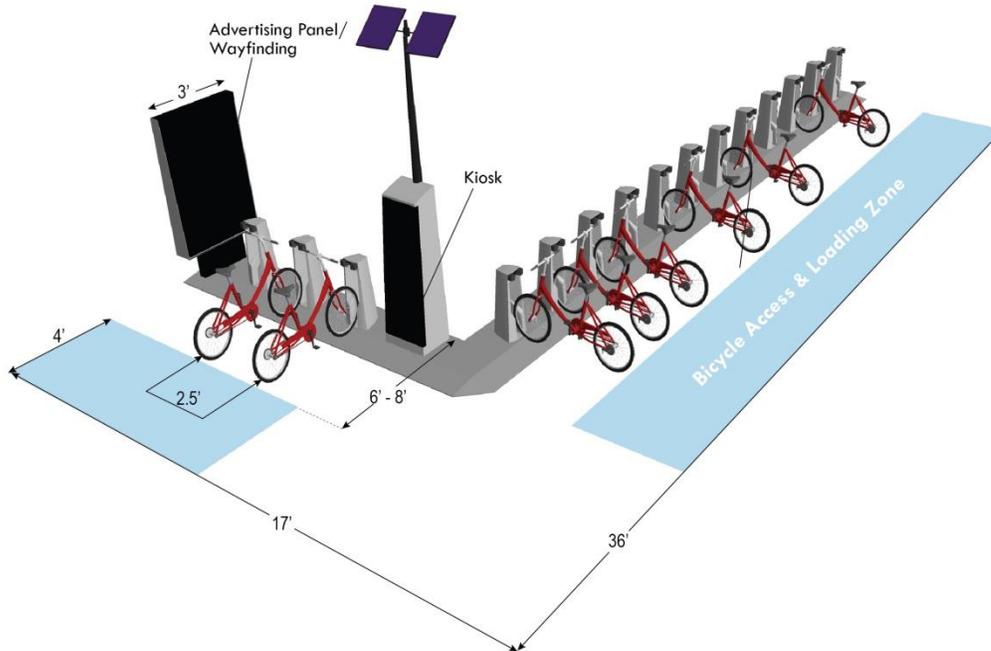
Source: Nelson\Nygaard

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Type: Double	Capacity: 25 docks	Notes: Doubles docking capacity without extending the stations' length.
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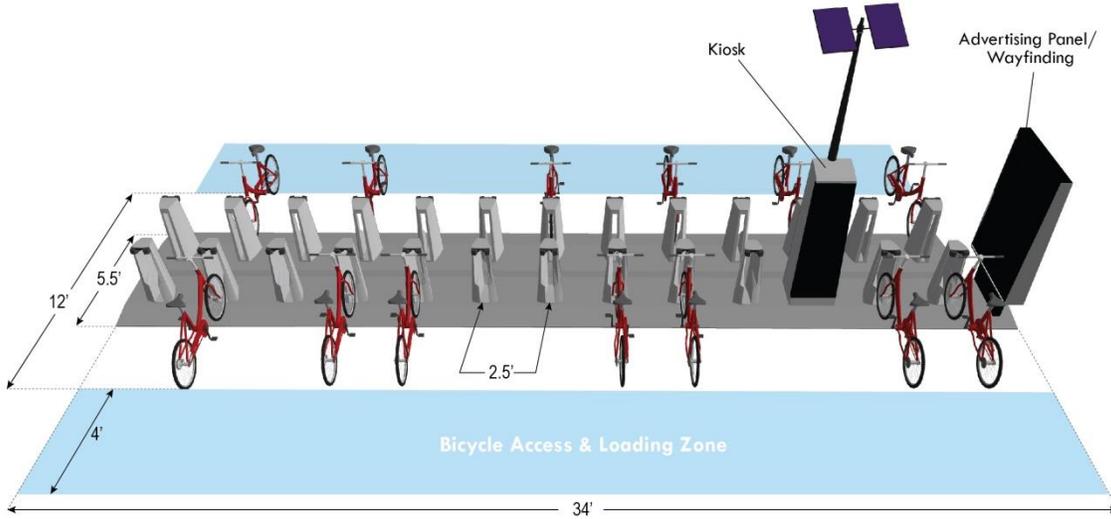


Type: L-Shape	Capacity: 15 docks	Notes: Ability to wrap around planters and other physical features.
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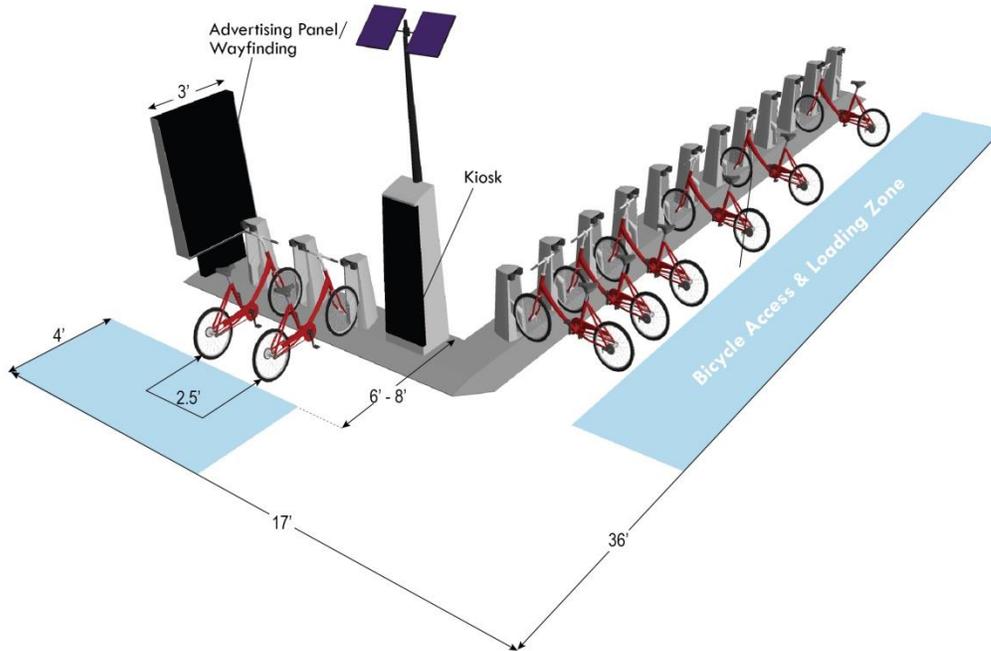


NEW ORLEANS BIKE SHARE FEASIBILITY STUDY AND BUSINESS PLAN | FINAL REPORT

Type: Double	Capacity: 25 docks	Notes: Doubles docking capacity without extending the stations' length.
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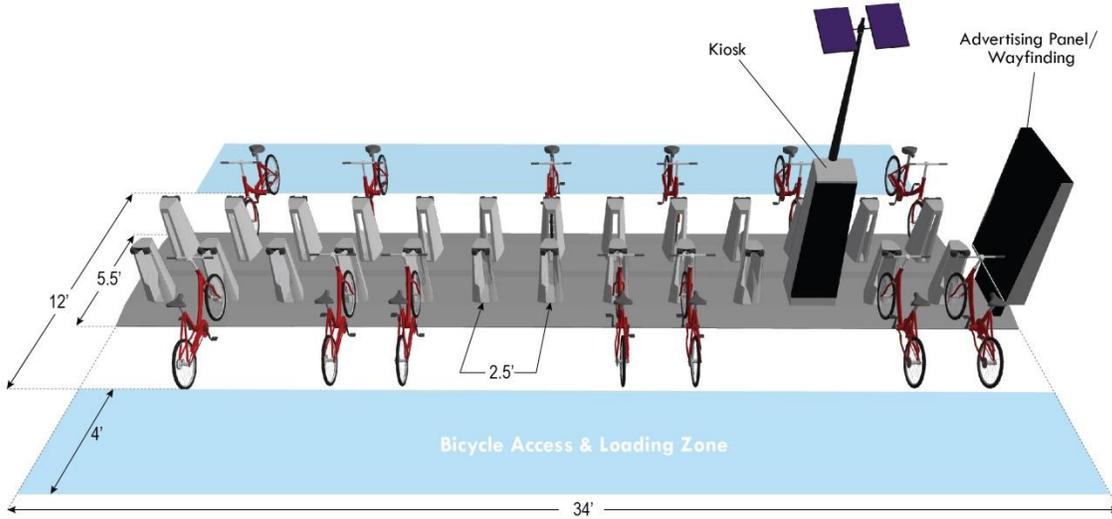


Type: L-Shape	Capacity: 15 docks	Notes: Ability to wrap around planters and other physical features.
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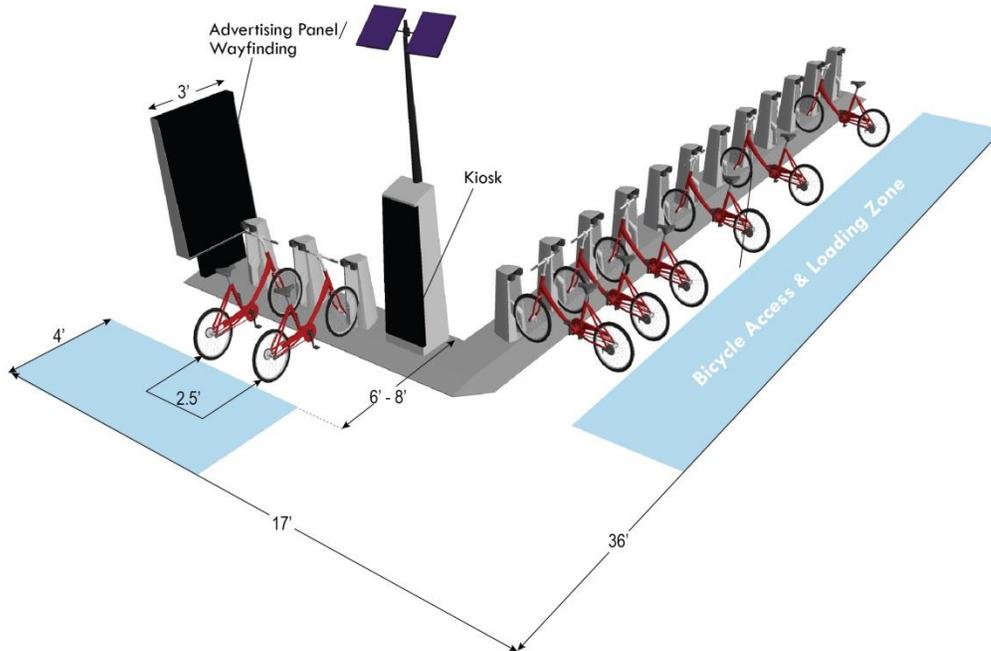


NEW ORLEANS BIKE SHARE FEASIBILITY STUDY AND BUSINESS PLAN | FINAL REPORT

Type: Double	Capacity: 25 docks	Notes: Doubles docking capacity without extending the stations' length.
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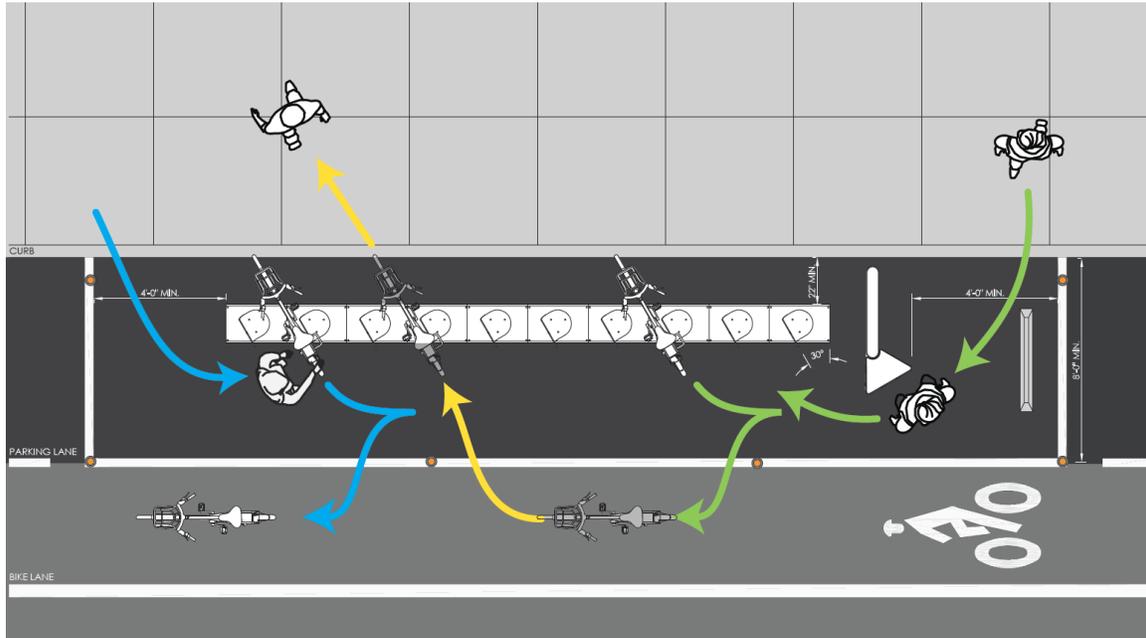


Type: L-Shape	Capacity: 15 docks	Notes: Ability to wrap around planters and other physical features.
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Source: NelsonNygaard

Figure 27 General smart-bike hub dimensions and access



Source: Social Bicycles

Criteria for expansion

Expansion beyond the Phase 1 service area in both the dock-based and hub-based, smart-bike systems options will require the recommended bike share operator to meet a variety of different factors. Potential expansion criteria may include the following provisions:²²

- Available funding
- Ability to meet the system’s goals
- System performance, which can be measured in terms of productivity (trips per dock per day), revenue generation, ability to spur community development, or a number of other measures of success
- Public support, in the form of broad public acceptance of the system and community support for expansion
- Community and business requests for expansion
- Financial sustainability through user fees and ability of the initial phase service area to support future expansion
- Future development in planned redevelopment areas
- Private and public partner support (both financial and in-kind)
- A density of destinations that can support a network of stations-- roughly maintaining the station spacing and density standards listed above

²² Specific metrics should be developed and monitored by the non-profit’s Board of Directors.

Measures of Success

Monthly performance measurement and financial statements of New Orleans' bike share system should be arranged for internal tracking. A more public facing performance indicators report should be conducted annually. System metrics that are commonly employed to monitor performance, benchmark success, and gauge system health include cost recovery and system productivity. System productivity can be further segmented by the type of market a station is serving (e.g. daily commuter stations, visitor-based stations, and equity stations).

Cost recovery: Farebox recovery ratio is a critical performance measure as it measures the percentage of operating costs covered by subscriptions and fees. In some cities, bike share systems recover all or nearly all of their annual operating costs (including Nice Ride Minnesota in the Twin Cities, Capital Bikeshare in Washington D.C., and Denver's B-Cycle). Other systems like Miami Beach's DecoBike are actually turning a profit. Due to the likely high volume of tourist use in New Orleans, we have a high degree of confidence that bike share in urban New Orleans will operate a net positive profit that can be reinvested in the system or used to finance the initial capital investment. One challenge will be the cyclical nature of cost recovery. The major revenue generating months will likely coincide during months with major events like Jazz Fest (i.e., between April and June).

Productivity: The number of bike share trips per bike per day is one industry standard for measuring bike share system productivity. In some ways, the success of a system is determined by the layout/density of stations across the service area, but also, system success is determined by the density of potential bike share users, including residents and visitors. Figure 28 below displays varying levels of productivity in systems across the U.S. Another measure of productivity that New Orleans' bike share operator should consider tracking is trips *per dock* per day (or trips *per rack* per day in the case of a hub-based system). This alternative measure monitors both system productivity and system efficiency (i.e., the ability of the system operator to efficiently balance the system). Monitoring the system's ability to balance its bicycle fleet will be a critical measure for Scenario 2 as this system type has not been applied on a citywide basis in North America. The operator must carefully monitor this performance metric and develop rebalancing solutions (e.g., operational changes or strong user incentives for self-balancing) if user reliability²³ is not achieved.

Other metrics being tracked by bike share systems include:

- Cost per trip
- Cost per trip per user (by user type)
- Revenue generation (e.g., revenue per trip or revenue per 30+ minute trip)
- Non-revenue trips (rebalancing trips)
- Membership by type and annual turnover (e.g., annual, monthly, etc.)
- Safety (collisions, severity, fatalities)
- Fleet maintenance (or the inverse, percentage of fleet in service)
- Station or hub location full/empty occurrences (tied to system reliability)

²³ On-demand bicycle availability at every hub location or dense cluster of hub locations (limited to a 450-600 foot walk).

- Number of user rebalancing trips (measure of incentive strength and system self-rebalancing for smart-bike, hub-based system only)
- Local use versus tourist use
- Number of unbanked individuals that access the system (and other equity considerations)
- Customer satisfaction
- Non-traditional metrics like retail influence, VMT reduction, and station sponsorship requests, among others.

Figure 28 Bike share productivity in select systems (trips per bike per day in 2012)

System	Trips per bike per day	# of bikes	# of stations
Capital Bikeshare (Washington DC)	3.23	1,850	231
Divvy Bikes (Chicago)	1.4*	2,200	222
Nice Ride Minnesota (Twin Cities)	0.97	1,300	170
DecoBike (Miami Beach)	2.75	1,000	115
Boston Hubway	2.12	1,100	110

*Chicago Divvy's productivity data is from 2013.

6 HOW MUCH WILL BIKE SHARE COST?

Establishing New Orleans’ bike share program—and the operator that administers the program—is comprised of three main cost elements: 1) pre-launch start-up costs (including non-profit development and pre-roll out activities, if pursued); 2) near- and long-term capital costs; and 3) ongoing operating costs. The following sections present planning-level cost estimates for the station-based and hub-based, smart-bike scenarios. Costs for system capital expenditures and operations are forecast for the first five years, incorporating a conceptual cost schedule for system expansion and its associated increases in operating costs. Beyond five years, system cost forecasts become speculative; therefore these assumptions are not included.

Note: As stated in Chapter 5, Scenario 2 (hub-based, smart-bike system) is conditionally recommended, but Scenario 1 (station-based) costs are shown for comparative purposes.

PRE-LAUNCH START-UP COSTS

If the City pursues the organizational recommendation, the initial implementation phase of New Orleans’ bike share program includes key activities like forming the administrative non-profit, hiring key staff, conducting community outreach, and completing more detailed system design and station/hub location planning for the bike share operation. These pre-launch activities represent a key funding challenge for New Orleans as bridge funding may require public funds, charitable gifts, and/or foundation funding. Basic non-profit infrastructure, staffing, administrative, and final planning and design activities need to be established to begin the bike share implementation process, including fundraising. Cost elements of the pre-launch phase include:

- Executive Director salary
- Website design and programming
- IT and communication systems
- General supplies, materials, travel and other expenses
- Marketing and promotions
- Legal fees
- Insurance
- Station location planning and design (could be assumed or supported by the private operator)
- Community outreach (could be assumed or supported by the private operator)

Based on detailed cost estimates presented in the Appendix, the pre-launch phase would cost:

- **Scenario 1:** \$474,000 one-time cost in Phase 1 (plus \$109,000 for expansion)
- **Scenario 2 (Recommended):** \$557,000 one-time cost in Phase 1 (plus \$789,000 for expansion)

The high end of the cost range includes funds for detailed station/hub location planning, site design, and permitting as well as community outreach. These two activities are time and cost intensive and, thus, are recommended for completion earlier in the implementation process. Based on conversations with City and private sector stakeholders, community outreach will need to be extensive and thorough. Therefore, the estimated cost of community outreach and supporting programming is conservatively high.

Station location planning and outreach should be conducted as a separate effort from a vendor/operator contract, likely by a consultant with expertise in more detailed implementation. The City of New Orleans could provide in-kind support. This approach will allow the non-profit to allow for a proactive start on these critical activities.

NEAR- AND LONG-TERM CAPITAL COSTS

Projected capital costs include all bike share equipment and activities related to installation including the bicycle fleet (3-speed bicycles are assumed), solar-powered docking stations or hub racks and plates (with kiosks and platforms provided at high demand locations), bicycle and station/hub assembly, bicycle and station/hub spare parts, GPS replacement units for smart-bikes, and maintenance and redistribution vehicles. The total one-time capital costs for each scenario are presented below by phase.

- **Scenario 1, Phase 1:** \$4.1 million (\$1.1 million per sq. mi. served)
- **Scenario 1, Phase 2:** \$1.3 million (\$0.23 million per sq. mi. served)²⁴
- **Scenario 2, Phase 1 (Recommended):** \$3.1 million (\$0.55 million per sq. mi. served)
- **Scenario 2, Phase 2 (Recommended):** \$6.0 million²⁵ (\$0.27 million per sq. mi. served)

State of Good Repair

As with any transit system, bike share capital equipment will degrade over time and will require replacement. While, most bike share bicycles and stations have a useful life of roughly five years, the useful life of racks and rack plates in a smart-bike system is likely much longer. Hub kiosks and map/advertising panels likely experience the same wear-and-tear and useful life as a traditional bike share station.

Although all major North American bike share systems have been in operation for less than five years, major capital maintenance and replacement efforts are on the horizon. An important goal for the New Orleans system is to be financially sustainable over the long-term. Thus, the program must account for replacement costs during the early planning phases. This includes incremental costs for replacement parts (per unit assumption) and annual assumptions for fleet replacement banking (1.5% per year). This proactive approach to equipment life costing feeds into the bike share program's initial sponsorship and fundraising strategy.

²⁴ Total square mileage, not just the new square mileage added by Phase 2.

²⁵ Note: This cost represents the total capital cost for a coverage area that could be segmented into sub-phases (based on available funding and operator decision-making).

ONGOING OPERATING COSTS

Establishing a clear and detailed understanding of how much it will cost to operate the recommended bike share system every year is critical to inform the program’s funding strategy (in Chapter 7). The operating cost model used for this study assumes the following ongoing operating costs:

- Employee labor including general administrative and operations staff
- Direct expenses including facilities and equipment, administrative and maintenance materials and vehicle leasing, and IT, website, and other communication-related costs

A large component of annual operating costs will be consumed by rebalancing efforts—a necessary daily activity to ensure reliable, on-demand access to bicycles. In systems of comparable size to New Orleans’ build out scenarios, roughly 1,000-1,300 bicycles are rebalanced on a daily basis. Rebalancing helps the system recalibrate during and after peak commute flows from outlying neighborhoods to the major job centers like the CBD, medical districts, and universities, as well as overloaded docking demand at key destinations often utilized by casual or daily subscribers.

Preliminary estimates for on-going annual operating costs in each of New Orleans’ scenarios are:²⁶

- **Scenario 1, Phase 1:** \$1.5 million per year (\$0.41 million per year per sq. mi. served)
- **Scenario 1, Phase 1+2:** \$1.7 million per year (\$0.29 million per year per sq. mi. served)
- **Scenario 2, Phase 1 (Recommended):** \$1.9 million per year (\$0.34 million per year per sq. mi. served)
- **Scenario 2, Phase 1+2 (Recommended):** \$4.7 million per year²⁷ (\$0.21 million per year per sq. mi. served)

Due to the changing nature of the bike share industry and the sudden emergence of smart-bike technology, operators are just beginning to understand the rebalancing cost implications. For that reason, operating cost assumptions for Scenario 2 (smart-bike, hub-based system) are conservative.

²⁶ Note: Phase 2 operating costs do not represent an additive increment upon Phase 1 operating cost. These costs represent the new total annual operating costs.

²⁷ Note: The Scenario 2, Phase 2 operating cost figure represents the total operating cost for a coverage area that could be segmented into sub-phases (based on available funding and operator decision-making). If implemented in sub-phases, the annual operating costs would reduce substantially, but not proportionally.



Rebalancing bicycles (left) and other staff intensive activities like facility maintenance (right) greatly influence annual operating costs.

Source: Nelson\Nygaard and Hubway

A summary of Scenario 1 and 2 system start-up costs and ongoing operating costs are presented in Figure 29 and Figure 30. Detailed initial capital and ongoing operating costs are presented in the Appendix. As the system expands, capital expenditure and ongoing operating costs will increase. Figure 31 and 32 present projected 5-year capital and operating costs.

Figure 29 Scenario 1 pre-launch start-up, capital, and operating costs by phase

	Start-Up	Capital	Annual Operating
Phase 1 (827 bicycles, 60 stations)	\$474,000	\$4,100,000	\$1,510,000
Cost/station		\$68,602.75	\$25,167
Cost/bike		\$4,977.22	\$1,826
Phase 1+2 (174 additional bicycles, 22 additional stations)	\$109,000	\$1,300,000	\$1,667,000
Cost/station		\$60,444.50	\$20,329
Cost/bike		\$7,642.41	\$1,665
TOTAL (1,001 bicycles, 82 stations)	\$583,000	\$5,400,000	\$1,667,000 (Phase 1+2)

Note: All costs are planning-level.

Figure 30 Scenario 2 pre-launch start-up, capital, and operating costs by phase

	Start-Up	Capital	Annual Operating
Phase 1 (1,245 bicycles, 89 hub locations)	\$557,000	\$3,100,000	\$1,910,000
Cost/hub		\$34,600.39	\$21,461
Cost/bike		\$2,473.44	\$1,534
Phase 1+2 (2,679 additional bicycles, 277 additional hub locations)	\$789,000	\$6,000,000	\$4,705,000
Cost/hub		\$21,787.71	\$12,855
Cost/bike		\$2,252.78	\$1,199
TOTAL (3,924 bicycles, 366 hub locations)	\$1,346,000	\$9,100,000	\$4,705,000 (Phase 1+2)

Note: All costs are planning-level.

Figure 31 Scenario 1 five-year cost summary by phase

Phase by Cost Type		Pre-launch	Year 1	Year 2	Year 3	Year 4	Year 5
Capital	Start-up	\$474,000		\$36,333	\$36,333	\$36,333	
	Phase 1		\$4,100,000				
	Phase 2*			\$433,000	\$433,000	\$433,000	
Operations	Phase 1		\$1,510,000				
	Phase 2*			\$2,065,667	\$2,343,500	\$3,177,000	\$3,177,000
PHASE 1 TOTAL		\$474,000	\$5,610,000	-	-	-	-
PHASE 2 TOTAL		-	-	\$2,535,000	\$2,812,833	\$3,646,333	\$3,177,000

Note: All costs are planning-level.

* Phase 2 implementation is conceptually displayed over a 3-year timeframe (years 2 through 4). Actual implementation would likely occur over a longer implementation timeframe. Phase 2 implementation will be influenced by available funding and operator objectives and internal decision-making.

Figure 32 Scenario 2 five-year cost summary by phase

Phase by Cost Type		Pre-launch	Year 1	Year 2	Year 3	Year 4	Year 5
Capital	Start-up	\$557,000		\$263,000	\$263,000	\$263,000	
	Phase 1		\$3,100,000				
	Phase 2*			\$2,000,000	\$2,000,000	\$2,000,000	
Operations	Phase 1		\$1,950,000				
	Phase 2*			\$3,478,333	\$4,262,500	\$6,615,000	\$6,615,000
PHASE 1 TOTAL		\$557,000	\$5,050,000	-	-	-	-
PHASE 2 TOTAL		-	-	\$5,741,333	\$6,525,500	\$8,878,000	\$6,615,000

Note: All costs are planning-level.

* Phase 2 implementation is conceptually displayed over a 3-year timeframe (years 2 through 4). Actual implementation would likely occur over a longer implementation timeframe. Phase 2 implementation will be influenced by available funding and operator objectives and internal decision-making.

7 FUNDING STRATEGY

New Orleans is in a unique position to house a thriving bike share system that is financially sustainable. This analysis foresees consistent cash flow due to a large, event-centered visitor population, rapid re-urbanization in a post-Katrina economy, a relatively comfortable climate amenable to year-round bicycle use, and high demand for on-demand and duplicative transit services. While resident commuting is certainly a market segment that will be well served in New Orleans, the operator's funding strategy is firmly rooted in the influence of the city's tourist market. The tourist market will largely fund system operations; thus, the operator must capitalize on this reality.

The following sections recommend a fare structure for New Orleans's bike share system, forecast ridership for the first five years of operation, and identify funding options and revenue streams. The end of this chapter establishes a sample of funding ranges that will pay for net operating losses that will likely occur during the initial 2-3 years of operation

PROPOSED PRICING STRUCTURE

New Orleans' bike share operator should establish a fare structure that attracts annual, monthly, and daily (casual) customers to the system, while generating enough revenue to help pay for the system. The ability to use the pricing structure to facilitate wealth transfer and resident user subsidy was consistently mentioned during stakeholder Idea Sessions. New Orleans' proposed pricing scheme is presented on the following page.

In addition to subscription fees, the proposed fee structure includes overage fees for users that intend to keep a bicycle in circulation beyond the 30-minute free ride period. The proposed pricing structure is based on existing peer bike share systems as shown in Figure 33, but also local market factors and other transportation fees. The proposed pricing structure encourages short-term, short trip rental and respects market boundaries of other private transportation services like long-term bike rentals, taxis, and private shuttles.

The final pricing structure should be reviewed and approved by the operator. In addition, the operator should explore simplified fare structures akin to other public transit fares. Additional analysis should be conducted to establish per use, time-based fares with a fee program that accrues overages after a 30 minute free ride period. This will greatly simplify access and understanding of the system and reduce the complexity of integrating fares with RTA transit fare payment.

Fare payment

New Orleans' bike share system should employ credit/debit card-based online payment for monthly and annual subscriptions, while providing additional payment options for the unbanked or those that cannot afford lump sum payment for annual or monthly subscriptions. Daily or

multi-day subscriptions can be purchased via kiosk payment systems using a credit/debit card. Access to bikes is provided with either fare cards/key fobs (for annual or monthly subscriptions) or a unique code that can be dialed directly into the smart-bike or hub kiosk (for all other subscriptions). The bike share operator should develop a program with local banks, housing agencies and retailers to offer payment options for unbanked populations. This would likely include a debit form of payment that can be recharged at bank locations or select retail locations. More information on payment options that will expand system access to low income/unbanked populations is detailed in Chapter 8's equity strategy.



Fare payment can be completed at kiosks (left) or directly on the bicycle in the case of the smart-bike system (right).

Source: Streetsblog and Social Bicycles

Figure 33 Proposed pricing structure and overages

Proposed Pricing Structure and Overages

Peer system	Days of operation	System size	Subscription type					
			Annual pass	Monthly pass	7-day pass	5-day pass	3-day pass	24-hour pass
Miami Beach DecoBike*	365	115 stations/1,000 bikes	\$180	\$35	-	-	-	\$24
Capital Bikeshare**	365	231 stations/1,850 bikes	\$75	\$25	-	\$15	-	\$7
Chicago Divvy Bikes	365	222 stations/2,200 bikes	\$75	-	-	-	-	\$7
Bay Area Bike Share	365	70 stations/700 bikes	\$88	-	-	-	\$22	\$9
New Orleans (proposed)***	365	Minimum (Phase 1): 89 hubs/1,245 bikes Maximum (Phase 1+2): 366 hubs/3,924	\$75	\$30	-	\$25	\$16	\$9

Proposed Overage Fees

Peer system	Annual subscription overages			24-hour subscription overages		
	30-60 minutes	60-90 minutes	Add. 30 minutes	30-60 minutes	60-90 minutes	Add. 30 minutes
Miami Beach DecoBike*	\$4.00	-	-	-	-	-
Capital Bikeshare**	\$1.50	\$4.50	\$6.00	\$2.00	\$4.50	\$8.00
Chicago Divvy Bikes	\$1.50	\$4.50	\$6.00	\$2.00	\$4.50	\$8.00
Bay Area Bike Share	\$4.00	\$11.00	\$4.00	\$4.00	\$11.00	\$4.00
New Orleans (proposed)	\$1.50	\$3.00	\$6.00	\$2.50	\$6.00	\$8.00

Note: Some peer pricing includes taxes while other are the price shown plus tax.

*DecoBike annual pass is for unlimited 30 minute rides. There is also a \$300 option for unlimited 60 minute rides. Monthly pass is for 30 60-minute rides. There are also several hourly passes. This rate schedule is structure like a traditional bike rental.

**Capital Bikeshare also includes an annual subscription payment program for \$84.

*** The operator may elect to use lower rates, based on demand. This does not include reduced fares for university students or qualifying low income individuals, a pricing mechanism the non-profit should pursue and negotiate.

RIDERSHIP AND REVENUE FORECASTS

Forecasting user-generated revenue from the initial phase service area is based on several basic assumptions:

- The system’s propensity to generate trips
- The proportion of casual (daily) and member (subscriber) users
- How price sensitive users are to paying overage fees²⁸

Estimated bike share ridership for each system scenario and phase was forecast using a bike share pivot model developed by Nelson\Nygaard. This type of analysis is used for transit ridership forecasting where a specific transit service is being introduced. A pivot model is a way to estimate ridership potential based on known demand factors of existing bike share systems in comparable cities. The model aggregates factors assumed to be associated with ridership coupled with current system statistics. Adjustments are made to remove some of the influences that may distort current ridership figures. With these adjustments made it is possible to estimate ridership by “pivoting” off the average ridership of existing peer systems and adjusting outlier ridership phenomena based on known ridership factors.

Five peer bike share systems were chosen for this analysis based on similarities of scale, city characteristics, organizational structure, and likely operational needs. The five systems analyzed include Capital Bikeshare (Washington, DC); Chicago Divvy, Boston Hubway; Nice Ride MN (Twin Cities); and Miami Beach DecoBike.

Who will use bike share in New Orleans?

Three primary bike share markets are present in New Orleans:

Resident non-commute market: This market includes residents within New Orleans’ service area seeking to make short trips between key destinations or seeking last-mile transit connections. The residential market is currently limited due to New Orleans’s auto-oriented culture. An even smaller segment of residents seeks weekday or weekend connections to transit or neighborhood retail along corridors like Magazine Street.

Visitor/tourist market: New Orleans is a major regional tourist hub and attracts over 9 million visitors per year. While visitors are relatively insensitive to price, they also value cheap on-demand transportation. In some cases, they value fun or amenity-type transportation. Due to their length of stay, price insensitivity, limited need for time competitive transportation, and willingness to sightsee while in transit, the visitor market would make up the bulk of use in New Orleans.

Commuter market: This market includes employees and students throughout urban New Orleans seeking access to job centers, particularly in the CBD, French Quarter, biomedical corridor, and universities. Need for late night transit service signals that bike share could serve as a lifeline transportation option when RTA’s service is suspended at night.



Source: Nelson\Nygaard

²⁸ Overage fees are escalating charges imposed when a bicycle is not returned within 30 minutes of the original time of access.

Ridership

Based on the bike share pivot model analysis, the model forecasts up to 815,000 annual trips at system build out and at maturity (i.e., the system is broadly accepted and well marketed, any launch challenges have been fixed, and cultural shift begins). Ridership forecasts assume the system is operating 365 days per year. Figure 34 and Figure 35 summarize each scenario’s ridership by phase and by month at Year 3 (maturity). Forecast monthly ridership corresponds to New Orleans’ monthly visitor flows. Bike share ridership is likely to peak in April and May, corresponding to the city’s most well attended events and weather conditions that are most amenable to bicycle travel.

Figure 34 Scenario 1, Phase 1 & 2 ridership forecast by month at Year 3 (at maturity)

Month	Phase 1 (Low)	Phase 1 (High)	Phase 1+2 (Low)	Phase 1+2 (High)
January	19,100	23,200	23,300	28,100
February	18,500	22,400	22,500	27,200
March	19,800	23,900	24,000	29,000
April	29,600	35,900	36,000	43,600
May	29,600	35,900	36,000	43,600
June	19,800	23,900	24,000	29,000
July	23,500	28,400	28,500	34,500
August	16,100	19,400	19,500	23,600
September	17,300	20,900	21,000	25,400
October	17,300	20,900	21,000	25,400
November	19,100	23,200	23,300	28,100
December	17,300	20,900	21,000	25,400
TOTAL (rounded)	247,000	299,000	300,000	363,000

Note: All projections are planning-level.

Figure 35 Scenario 2, Phase 1 & 2 ridership forecast by month at Year 3 (at maturity)

Month	Phase 1 (Low)	Phase 1 (High)	Phase 1+2 (Low)	Phase 1+2 (High)
January	29,000	35,000	52,200	63,200
February	28,100	33,900	50,600	61,100
March	29,900	36,200	53,900	65,200
April	44,900	54,200	80,900	97,800
May	44,900	54,200	80,900	97,800
June	29,900	36,200	53,900	65,200
July	35,500	42,900	64,000	77,400
August	24,300	29,400	43,800	53,000
September	26,200	31,600	47,200	57,100
October	26,200	31,600	47,200	57,100
November	29,000	35,000	52,200	63,200
December	26,200	31,600	47,200	57,100
TOTAL (rounded)	374,000	452,000	674,000	815,000

Note: All projections are planning-level.

Annual and 24-hour Subscription and Fee-Based Revenue

As demonstrated in Figure 36, most bike share users in New Orleans will be casual, daily users (roughly 65%) largely from the visitor market, and they will access the system with a 24-hour subscription. Comparing apples to apples in Phase 1, 225,200 24-hour subscriptions would be purchased annually in Scenario 2 by Year 3 compared to 179,800 24-hour subscriptions in Scenario 1. The 24-hour subscription market is anticipated to make 36% more trips than the annual subscription user market in both system scenarios. After Year 3, annual and 24-hour subscriptions would increase roughly 10% in total, and remain constant.

Even using conservative assumptions related to user trip rates, trip duration, and visitor daily pass purchases (1% of annual visitors), New Orleans’ strong visitor market will lead to sizeable subscription and overage fee revenue. This analysis assumes out-of-hub fee of \$5 being accrued on 2.5% of trips (an industry rule of thumb). As detailed in Figure 37, Scenario 1 is estimated to annually generate roughly \$1.8 million in Phase 1 and \$2.3 million in Phase 1+2. This is compared to annual revenues of approximately \$2.9 million and \$4.1 million generated in Phase 1 and 2 of Scenario 2, respectively. Subscription revenue makes up the bulk of revenue generation in all phases of each scenario.²⁹

Note: This ridership forecast and market segmentation assumes a conservative estimated annual member base, although it is roughly proportional to the member base in Capital Bikeshare as it relates to system ridership.

²⁹ Note: Revenue projections use the average of each phase’s low and high ridership projection.

Figure 36 Year 3 projected trips by user market and scenario

Scenario/Phase	Casual (24 hr) Trips	Casual (24 hr) Subscriptions	Annual Member Trips	Annual Member Subscriptions
Scenario 1, Phase 1	177,500	179,800	95,600	5,857
Scenario 1, Phase 1+2	215,500	198,800	116,000	10,681
Scenario 2, Phase 1	268,500	225,200	144,600	11,215
Scenario 2, Phase 1+2	483,900	333,000	260,600	17,437

Note: Trips are based on the average of low and high ridership estimates by phase. Casual subscriptions were calculated using a conservative casual trip rate (2 trips per subscription) plus 1% of total annual New Orleans visitors based on 2012. Convention and Visitors Bureau data (conservatively assumes 1 trip per subscription). Given the likely similarity in visitor and resident use to Capital Bikeshare (CaBi), annual subscriptions are modeled by applying the proportion of New Orleans ridership to CaBi ridership (i.e., 11% and 22% of the average of New Orleans' low and high ridership estimate in Scenario 1 and 2, respectively) to the total number of CaBi annual subscriptions.
 Note: This ridership forecast and market segmentation assumes a conservative estimated annual member base, although it is similar to annual membership figures seen in Boston and Minneapolis.

Figure 37 Summary of Year 3 subscription and average fee revenue ranges

	Scenario 1, Phase 1	Scenario 1, Phase 1+2	Scenario 2, Phase 1	Scenario 2, Phase 1+2
User fee revenue				
Annual user fee revenue	\$11,800	\$18,200	\$15,700	\$35,500
24-hour user fee revenue	\$454,000	\$544,600	\$453,800	\$544,500
Out-of-hub fee (2.5% of all trips at \$5)	-	-	\$528,400	\$652,600
Subtotal ⁱ (rounded)	\$396,000	\$478,000	\$848,000	\$1,048,000
Subscription revenue				
Annual subscription revenue	\$439,300	\$801,000	\$841,100	\$1,307,700
24-hour subscription revenue	\$1,618,200	\$1,789,200	\$2,027,700	\$2,997,000
Subtotal ^{**} (rounded)	\$1,440,000	\$1,813,000	\$2,008,000	\$3,013,000
TOTAL REVENUE (rounded)	\$1,836,000	\$2,291,000	\$2,856,000	\$4,061,000

*Subtotal incorporates a 5% non-collection and 10% vendor profit discount. Out-of-hub fee revenue is provided for Scenario 2 only.

**Subtotal incorporates separate 10% discounts for vendor profit, Employee Benefit Reductions (annual subscriptions only), and 24-hour subscription giveaways.

ⁱFee revenue assumes overage accrual based on the average overages observed in Capital Bikeshare and Nice Ride (2013 data).

Note: All projections are planning-level. Revenue levels shown above are estimated to be met by Year 3 of operation.

The ridership and revenue findings above serve as a proxy for the financial sustainability of the two system scenarios. New Orleans’ 5-year trip and subscription estimates are presented in Figure 38. The escalation in ridership after Year 3 results from increased annual subscriptions stemming from assumed expansion of bicycle infrastructure and gaining popularity from the local and visitor 24-hour subscription markets. As the program gains traction and the utility of the system becomes more widely understood, ridership will increase. Gradual increases in ridership are common in most system launches. It is rare that system ridership skyrockets at system inception.

The Operating Profit/Loss metric is an important input into the system’s funding strategy. Based on the financial forecast, Scenario 1 Phase 1 would operate in the black by Year 2 and Scenario 2 Phase 1 would operate profitably at the end of the first year of operation. Profits could be used to reinvest into the next phase of system expansion Phase 2 of Scenario 1 would operate in the black by Year 2 compared to Phase 2 of Scenario 2, which would require a sponsorship or other supplemental revenue model to cover the operating loss to meet the coverage and equity goals of the system. Because Phase 2 of Scenario 2 will operate as a public transit system that serves a significant portion of the city’s population, projected operating loss for Phase 2 of Scenario 2 would require a funding approach that generates supplemental revenue. This is a similar trajectory as seen in Washington DC (Capital Bikeshare) and the Twin Cities (Nice Ride MN).

Note: Operating Loss in Phase 2 of Scenario 2 would likely be reduced if broken into sub-phases.

Figure 38 Scenario 1 five-year ridership and user revenue projection, Phase 1

	Year 1	Year 2	Year 3 (Maturity)	Year 4	Year 5
Phase 1					
Ridership	191,100	232,050	273,000	286,650	286,650
Revenue	\$1,285,200	\$1,560,600	\$1,836,000	\$1,927,800	\$1,927,800
Operating Cost	\$1,510,000	\$1,510,000	\$1,510,000	\$1,510,000	\$1,510,000
Operating Profit/Loss	\$(224,800)	\$50,600	\$326,000	\$417,800	\$417,800

Note: Ridership is based on the average of low and high ridership estimates by phase.

Note: Years shown represent the point at which the phase is implemented. That is, Year 1 of Phase 1 and Year 1 of Phase 2 would occur in different years.

Figure 39 Scenario 1 five-year ridership and user revenue projection, Phase 1+2

	Year 1	Year 2	Year 3 (Maturity)	Year 4	Year 5
Phase 1+2					
Ridership	232,050	281,775	331,500	348,075	348,075
Revenue	\$1,603,700	\$1,947,350	\$2,291,000	\$2,405,550	\$2,405,550
Operating Cost	\$1,667,000	\$1,667,000	\$1,667,000	\$1,667,000	\$1,667,000
Operating Profit/Loss	(\$63,300)	\$280,350	\$624,000	\$738,550	\$738,550

Note: Ridership is based on the average of low and high ridership estimates by phase.

Note: Years shown represent the point at which the phase is implemented. That is, Year 1 of Phase 1 and Year 1 of Phase 2 would occur in different years.

Figure 40 Scenario 2 five-year ridership and user revenue projection, Phase 1

	Year 1	Year 2	Year 3 (Maturity)	Year 4	Year 5
Phase 1					
Ridership	289,100	351,050	413,000	433,650	433,650
Revenue	\$1,999,200	\$2,427,600	\$2,856,000	\$2,998,800	\$2,998,800
Operating Cost	\$1,910,000	\$1,910,000	\$1,910,000	\$1,910,000	\$1,910,000
Operating Profit/Loss	\$89,200	\$517,600	\$946,000	\$1,088,800	\$1,088,800

Note: Ridership is based on the average of low and high ridership estimates by phase.

Note: Years shown represent the point at which the phase is implemented. That is, Year 1 of Phase 1 and Year 1 of Phase 2 would occur in different years.

Figure 41 Scenario 2 five-year ridership and user revenue projection, Phase 1+2

	Year 1	Year 2	Year 3 (Maturity)	Year 4	Year 5
Phase 1+2					
Ridership	521,150	632,825	744,500	781,725	781,725
Revenue	\$2,842,700	\$3,451,850	\$4,061,000	\$4,264,050	\$4,264,050
Operating Cost	\$4,705,000	\$4,705,000	\$4,705,000	\$4,705,000	\$4,705,000
Operating Profit/Loss	(\$1,862,300)	(\$1,253,150)	(\$644,000)	(\$440,950)	(\$440,950)

Note: Ridership is based on the average of low and high ridership estimates by phase.

Note: Years shown represent the point at which the phase is implemented. That is, Year 1 of Phase 1 and Year 1 of Phase 2 would occur in different years.

Productivity and Cost Effectiveness Validation

Productivity and cost effectiveness metrics were compared with the experience of existing bike share systems to validate forecast bike share ridership and revenue in New Orleans. Metrics used in this cross-examination include subscriptions per bike and trips per bike per day. Systems used for this analysis are based on similar operating characteristics, business plans, and available data. Although slightly more productive in Scenario 1 Phase 1, Scenario 1 Phase 2, and Scenario 2 Phase 1, New Orleans is most similar to Denver B-Cycle, Boston Hubway, and Nice Ride MN when comparing trips per bike per day. When comparing annual subscriptions per bike, New Orleans is most similar to Capital Bikeshare.

The ridership and revenue forecasts summarized in the previous four figures are deemed reasonable and have been validated.

Figure 42 Productivity and cost effectiveness forecast validation

System	Bicycles	Annual subscriptions ¹	Annual trips ²	Trips per bike per day	Annual subscriptions per bike
New Orleans (Scenario 1, Phase 1)	827	5,857	273,000	0.9	7.0
New Orleans (Scenario 1, Phase 2)	1,001	10,681	331,500	0.9	10.7

NEW ORLEANS BIKE SHARE FEASIBILITY STUDY AND BUSINESS PLAN | FINAL REPORT

System	Bicycles	Annual subscriptions¹	Annual trips²	Trips per bike per day	Annual subscriptions per bike
New Orleans (Scenario 2, Phase 1)	1,245	11,215	413,000	0.9	9.0
New Orleans (Scenario 2, Phase 2)	3,924	17,437	744,500	0.5	4.4
Capital Bikeshare (DC only)	2,574	41,176	2,623,272	2.8	16.0
Denver B-Cycle³	709	4,023	263,000	1.3	5.7
Boston Hubway⁴	1,200	7,048	533,755	1.9	5.9
Nice Ride Minnesota⁵	1,556	3,000	305,000	0.9	1.9

¹ Represents New Orleans's low end annual subscription estimate for Year 3 of each respective phase of development.

² New Orleans' Year 3 ridership projections are used to compare 2013 ridership from existing systems.

³ Based on a 278 day season.

⁴ Based on a 240 day season.

⁵ Based on a 217 day season.

SNAPSHOT OF THREE-YEAR FUNDING SHORTFALL

As a theoretical exercise, Phase 1 capital and operating costs for both scenarios were projected out three years to understand the funding gap that is necessary to be recover through grants, sponsorship, and other contributions. The results of this exercise are shown in Figure 43. Based on the Year 3 maturity threshold used to cap capital costs, operating costs, and revenue (see ramp up in Figures 38 and 39), initial funding levels (projected revenue plus initial known funding from RPC) only make up 76% of Scenario 1, but fully cover the capital and operating funding needs of Scenario 2. The remainder needs to be generated through other funding and revenue streams. *Based on the experience of other bike share systems, opportunities for sponsorship, and the conservative revenue projections, it is well within reason to assume that the shortfall shown below can be covered by additional funding mechanisms.* The following section details funding and revenue options to make up that gap.

Figure 43 Snapshot of Phase 1 Funding Need

	Scenario 1: Station-based system 827 bicycles, 60 stations	Scenario 2: Smart Bike, hub-based system 1,245 bicycles, 89 hubs
Total capital costs	\$4.1 million	\$3.1 million
3-year operating costs	\$4.5 million	\$5.7 million
Initial 3-year costs	\$8.6 million	\$8.8 million
3-year revenue (see Figure 38 & 39)	\$5.0 million	\$7.3 million
Initial investment (RPC + local match)	\$1.5 million	\$1.5 million
Initial 3-year funding	\$6.5 million	\$8.8 million
Delta/Shortfall	(\$2.1 million)	\$0.0 million

Note: All cost and revenue figures are for Phase 1 only.
All figures are rounded to reinforce the conceptual nature of this analysis.

FUNDING AND REVENUE OPTIONS

User revenue alone cannot finance the initial capital in full and is unlikely to be sufficient to cover future phase expansion. A diverse funding strategy is necessary for a long-term, sustainable bike share operation.

Bike share often operates as a public-private venture. Most successful bike share programs receive funding from a range of public and private sources, and each sector’s participation strengthens the ability to leverage funding. Although frequently touted as a private market approach to transportation, bike share programs almost always require some public funding to launch and maintain the operation. More recently, private investment has shouldered much of the capital and operating investment as a way to leverage bike share’s positive impact on social, environmental, and economic goals in their own public outreach campaigns. The private sector’s willingness to contribute signals future success to potential program sponsors, the media, and the public.

The following sections summarize funding options available for New Orleans' initial phase system launch. Most funding options can be applied regardless of the organizational structure pursued by the City.

Public Funding and Grants

Numerous federal agencies offer funding streams that bike share programs across the country have used for capital and operating funds. These include the Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), the U.S. Department of Energy (DOE), U.S. Department of Housing and Urban Development (HUD), and the National Park Service (NPS).

Bike share programs nationwide have received federal and state awards through open communication and collaboration with state departments of transportation and metropolitan planning organizations, such as the Regional Planning Commission (RPC). As a relatively new component to the transportation system, bike share has unique barriers to implementation. For this reason, operators and local agencies have centered discussions on how bike share will address challenges such as air quality, job access, transit ridership, economic development, and public health. Funding for bike share capital or operating costs is often a smaller component of a larger transportation, housing, or economic development project. The federal and state grants discussed below will require the operator and/or local agencies to address these challenges while coordinating grant writing with the Louisiana Department of Transportation and Development (DOTD), RPC, the Louisiana Department of Natural Resources (DNR), the Housing Authority of New Orleans (HANO), or the Louisiana Department of Health and Hospitals (DHH). In addition to local agencies and a potential bike share operator, existing non-profits can work to secure grants. Broad Community Connections, Freret Business and Property Owner Association, Old Algiers Main Street, Bike Easy, and other local non-profit community development groups may have grant options that public agencies do not.

Additional challenges come with eligibility. According to the FTA, bike share is not formally defined as public transit. As a result, the bicycles cannot be paid for with FTA dollars, but other components of the system can. The FHWA, however, does fund bicycles because they are defined as part of the parking system. Attention to these details is critical for successful grant applications.

Federal Funding Sources

Congestion Mitigation and Air Quality (CMAQ) Improvement Program. Bike share funding from FHWA frequently comes through the CMAQ Improvement Program. Recipients of these funds include government agencies and private, non-profit organizations, particularly in urban areas that do not meet National Ambient Air Quality Standards. Even though New Orleans meets these standards, the Louisiana DOTD still receives approximately \$11.5 million per year in maintenance funding that may be used for bike share program development and capital procurement. To initiate this grant process, the program administrators will need to request RPC to place bike share on the list of Transportation Improvement Program projects. Likewise, coordination with DOTD is critical to ensure livability-oriented investments that reduce congestion and further clean air efforts—like bike share—are considered for CMAQ awards. Programs that have benefited from this funding source include Boston Hubway, Bike Chattanooga, and Capital Bikeshare, among several others. None of those programs required local match grants, but in general CMAQ matching is 20% local match. The next call for projects is expected in the first quarter of 2016.



Roughly 80% of Capital Bike share's initial system launch and 75% of its expansion to Arlington was funded by CMAQ funds.

Source Nelson\Nygaard

Moving Ahead for Progress in the 21st Century (MAP-21). The current federal transportation bill, MAP-21, includes a grant program for alternative transportation projects called the Transportation Alternatives Program (TAP). Because the grant program has just begun, only a handful of bike share programs have benefited from this revenue source. For example, Puget Sound Bike Share—an administrative non-profit—received a \$750,000 Transportation Alternatives grant administered through the Washington Department of Transportation. DOTD will administer the final apportionment, so the bike share operator and/or public agency needs to communicate bike share's relatively minor funding needs and major benefits to DOTD for funding consideration. Of the federal revenue sources on the list, the Transportation Alternatives Program is one of the most flexible, but also one of the most competitive. Program sponsors will need to underscore the ways in which bike share will help achieve existing state and local transportation goals. Grants require a 20% local match and the next application period is due July 31, 2016.

Federal Transit Administration (FTA). The FTA offers an additional set of bike share funding sources. FTA funding sources have been used in a number of different ways, including planning, docking stations, and on-street infrastructure. These funds, however, have not historically paid for the bicycles themselves because bicycles are not formally recognized as a form of public transit. Bike share funding from FTA generally comes with the stipulation that the system must directly enhance transit service. Therefore, the operator and/or public sponsor needs to work with the City of New Orleans, RTA, and JeT to consider ways in which bike share can support and enhance transit service. While transit capital funding received by RTA or JeT could qualify to be used for bike infrastructure, these revenue sources compete for funding with transit operations and other capital needs. Grant opportunities include the following:

- **FTA 5316 Job Access Reverse Commute** funds can be used if the stations help connect lower-income residents and employees to jobs and job training sites. This grant aims to address the unique transportation challenges faced by welfare recipients and low-income persons, many of whom have difficulty accessing jobs from inner city locations. If a proposed bike share service includes lower income areas and employment centers, the

New Orleans bike share program could qualify for FTA 5316. This grant requires a 20% local match.

- **FTA 5307 Urbanized Area Formula Program** funds stipulate that pedestrian and bicycle access projects are eligible for funding. The challenge is that this may compete with funding for RTA and JeT. Coordination with the City of New Orleans is required. These grants require a 10-20% match.
- **FTA Bus Livability Discretionary Grants** (unallocated Section 5309 Bus and Bus Facilities funding) fund projects that fulfill the six livability principle of the Interagency Partnership for Sustainable Communities. Bicycle infrastructure and bike share are eligible if the bike share program is oriented toward bus stop integration. This may entail docking stations or information kiosks at bus stops—an approach that was successfully employed by Boston Hubway. The New Orleans Bike Share program should work with the City of New Orleans and RTA to determine how the program can best achieve this objective. Capital assistance grants are funded up to 80% of the net project costs. The application timeline is on a rolling basis. Historically, the program has been fully earmarked. However, if the program is not fully earmarked, unallocated or discretionary funds may be available. Such funds may be allocated at the discretion of the federal Secretary of Transportation.
- **FTA 5309 New Starts** funding as part of the North Rampart streetcar extension could be used for bike share station procurement as this would constitute an eligible station access improvement.

TIGER Grants. The Transportation Investment Generating Economic Recovery (TIGER) Discretionary Grant program has broad eligibility, making it a highly competitive program. Bike share programs have won awards for system expansion, but these awards have come through multimodal grant applications. For instance, Chicago’s Divvy bike share system benefitted from a \$20 million TIGER grant to repair 3.6 miles of track on the Chicago Transit Authority’s Blue Line. To build a successful grant application for New Orleans bike share, the applicant must demonstrate how bike share will address transportation challenges of national importance. This may entail a joint application with another transportation project, such as streetcar expansion or busway improvements. Regardless of the approach, working with closely with RTA and JeT is highly recommended. Most successful grant applications are filed through transit agencies or departments of transportation. This grant requires an 80% federal/20% local match. The 2015 application deadline is not available.

Centers for Disease Control and Prevention (CDC). The CDC’s Division of Nutrition, Physical Activity, and Obesity cooperative agreements, Prevention and Public Health funds, and the Communities Putting Prevention to Work Program provided funding to help communities reduce obesity rates. Boston Hubway, Nashville B-Cycle, and San Antonio Bike share have received this grant by considering the public health benefits bike share brings to cities.

The CDC has also recently announced a new funding opportunity to advance obesity prevention and promote equity.

- **DP14-1417 Partnerships to Improve Community Health** will provide funding to local public health offices, local housing authorities, school districts, and local transportation. Ten to 15 large cities will receive awards ranging from \$1 million to \$4 million on projects that create environments promoting good health for all. Successful projects will work to promote healthy weight and improve access to health care services.

While the 2014 cycle application deadline was July 22, 2014, another round of funding is expected in 2015.

New Orleans bike share program administrators will need to demonstrate bike share's potential public health impacts on obesity, type 2 diabetes, and air quality when applying for public health grants. Partnering with local public health organizations, the New Orleans Health Department and the Louisiana Department of Health and Hospitals will help reinforce the positive health impacts of bike share, build support for the program's implementation, and demonstrate to the CDC that the groundwork for meeting health goals has been laid.

U.S. Department of Energy (DOE). Numerous bike share programs have benefited from DOE's Energy Efficiency and Conservation Block Grant program. The grant program's goal is to reduce fossil fuel emissions and reduce total energy use. These grants benefit projects that support these goals and also spur economic development. Denver B-Cycle and San Antonio Bike share received this grant after stipulating emissions reductions and potential vehicle miles traveled savings. Working with the business community, particularly local business associations, may inform bike share program leadership on economic development opportunities. This may result in a stronger case for why bike share should receive the DOE grant.

Federal Lands Access Program. MAP-21 established the Federal Lands Access Program, which aims to improve transportation facilities that provide access to Federal lands. The program supplements state and local resources for public roads, transit systems, and other transportation facilities, emphasizing high-use recreation sites and economic generators. The program provides flexibility for a wide range of transportation projects, including bicycles projects. New Orleans is home to New Orleans Jazz National Historical Park and the Jean Lafitte National Historical Park and Preserve in the French Quarter and the Jazz Walk of Fame at Algiers Point. These sites would be accessible by bike share and would therefore qualify for the grant. The grant gives preference to high use sites, which would make these locations candidates for docking stations, information kiosks, or other equipment a bike share program may need.

This grant uses a sliding scale for local match funding requirements. "Soft-matches" or "in-kind matches" (e.g., donations of funds, materials, services, right-of-way acquisition, utility relocation) may be permitted from the project sponsor. More detail on the matching options can be found in United States Code Title 23, Section 120.

HUD Community Development Block Grants. The U.S. Department of Housing and Urban Development's (HUD) Community Development Block Grant Program is a flexible program that provides communities with resources to address a wide range of unique community development needs. The program areas provide assistance for cities of all sizes, neighborhoods, and areas affected by natural disasters. The Entitlement Communities program area may be the most suitable for bike share funding in New Orleans. This program allocates annual grants to larger cities to develop viable communities. The funding can be used for housing and opportunities to expand economic prospects for low- and moderate-income residents. This grant would require working with the Housing Authority of New Orleans to gain approval from HUD. Although HUD has granted funds for bicycle programs and infrastructure, the applicant would need to legitimize how funding components or marketing in lower income areas would improve the living and employment situation of residents. Bike share would likely need to be a smaller component of a larger housing or economic development project to have a successful grant application. The application period begins in November 2014. For formula grants, action plans associated with the Consolidated Plan must be submitted based on the grantee's program year, but no earlier than

November 15, 2014 or no later than August 15, 2015 of the fiscal year for which the funds are allocated.

State, Metropolitan, and City Funding Sources

A small number of bike share programs have relied on state funding, either directly from the state departments of transportation, departments of health, or through universities. The University of Minnesota, for instance, provided \$150,000 for the start-up of Nice Ride Minnesota. The Florida Department of Transportation granted \$300,000 to Broward B-Cycle (Fort Lauderdale), covering about 28% of the start-up costs. State health departments have committed funding as well. The Hawaii State Department of Health has committed \$1 million toward bike share capital from their Healthy Hawaii Initiative tobacco settlement funds.

Considering bike share's benefits to the tourism market, tourism grants could be one other source of revenue. The Louisiana Office of Tourism has a competitive grant program for marketing, which may help fund some of the promotion of bike share before its launch. Events also eligible for grants include the grand opening of a new Louisiana tourism attraction. A successful grant could ensure a smooth rollout for the bike share tourist market. The New Orleans Tourism Marketing Corporation, the City's leisure travel promotion agency, may also work to smooth this transition by dedicating some of its more than \$7 million budget for marketing and promotion of the bike share program. The same could be said for the Convention and Visitors Bureau and the Convention Center, which have annual budgets amounting to \$12.6 million and \$57 million, respectively.³⁰

A more flexible source of funding could come from RPC. Formula funding from metropolitan planning organizations are available for planning activities that support the economic vitality, increase safety of the transportation system for non-motorized users, promote energy conservation, and improve the quality of life. **RPC has \$1.5 million or more of funding that could be used for the planning of the bike share network.** This funding, however, requires a 20% match from the City.

City transportation funding has been one of the more common sources of funding, especially for ongoing maintenance and operations costs. Dedicating a relatively small amount of funding from a stable revenue source can help the system run smoothly, equitably, and safely. Funding from the automated traffic enforcement camera fund or parking revenue are two options to promote long-term program stability.

Other local funds could stem from the BP Gulf Coast Oil Spill settlement funds. The 2010 Deepwater Horizon disaster led to more than 100 nonprofit organizations and government entities receiving \$44 million from BP. Of this total, Louisiana agencies received \$16 million for tourism. Recipients included the New Orleans Tourism Marketing Corporation, New Orleans City Park, New Orleans Museum of Art, New Orleans Convention & Visitors Bureau, and the Louisiana Department of Culture, Recreation, and Tourism. Any of these agencies or non-profits could set aside a small portion of this revenue for information kiosks, bicycles, or docking stations, if applicable.

³⁰ 2014 Convention and Visitors Bureau and the Louisiana Division of Administration

Private foundations, Loans, Grants, and One-time Gifts

Although public grants are more common revenue sources, private and institutional grants are small, but common elements of bike share funding.

The Robert Wood Johnson Foundation helped fund the planning of bike share programs and other bicycle initiatives. The Bristol-Myers Squibb Foundation, Lilly Endowment, Richard King Mellon Foundation, and the Ruth Mott Foundation helped fund bike projects and may provide a new source for bike share revenue. Companies such as REI have provided grants of less than \$50,000 on bike projects through the Bicycle Friendly Community Grants Program. Trek Bicycle has also given money to bicycle projects through the Bicycles Belong Program. Private universities served by the system may also help pay for bike share programs. For instance, Nice Ride Minnesota received \$30,000 from Macalester College to help fund a station at their campus. Local universities would likely benefit from a bike share program in New Orleans. These universities may sponsor stations, promotional materials, bicycles, or information kiosks, particularly if these are on their campuses.

Other bike share programs have considered smaller private donations from individuals and small businesses. The City of Boulder launched a fundraising program that focused on small gifts of about \$20 to fund capital costs. Larger one-time gifts from institutions, charitable groups, and individuals may also generate sizable amounts of capital.

The Community Reinvestment Act, a Federal law designed to encourage banks to help meet the needs of borrowers in low- and moderate-income neighborhoods, loaned \$41 million to New York City's Citi Bike. This helped Goldman Sachs reach its \$2 billion requirement under the Act. The bike share system must serve lower income neighborhoods to qualify for this program, however. A variety of banking institutions located in New Orleans may provide opportunities for these loans. These include Regions, Chase, and Iberia.

Corporate wellness programs and benefits packages

Corporate membership programs reduce motor vehicle trips and may be an excellent revenue generator, especially with multi-year contracts. Employers may choose to add bike share membership to healthcare and wellness programs. This idea was well received during healthcare and business stakeholder meetings.

Sponsorship and Advertising

Sponsorship and advertising are the primary funding sources used to cover capital and operating costs in systems across North America. Private companies or other organizations, such as financial groups or health insurance companies, have provided up to 100% of the capital costs for some programs. Sponsors raise the revenue to ensure the system is fully funded and also build relationships with other community partners to support and promote the system. Advertising, a mechanism frequently employed by sponsors or program operators to generate revenue, has appeared at kiosks, on billboards, on street furniture, and on the bicycles themselves. As opposed to sponsorship, companies that advertise through bike share infrastructure do not necessarily play a role in promoting or managing the system.

Sponsorship types

Different bike share programs have raised revenue through a variety of sponsorship types. With each of these sponsorship types come different challenges and opportunities. Three of the most common sponsorship types are explained below:

Title or Presenting Sponsor. In these programs, the sponsor integrates its brand directly into the bike share system. The color and logos appears on bikes, and the title of the system includes the sponsor's name. The term of commitment typically ranges between 3-5 years with first right of refusal on renewal. Examples of title sponsors include London's Barclays Cycle Hire and New York City's Citibike. The advantage for the sponsor is brand exposure during the launch of the program, and the sponsor in turn funds a significant percentage, often up to 100% of the capital costs for the exclusivity provisions.³¹ The municipality, however, will have a limited input on the aesthetics of the bikes, stations, and kiosks. Under this sponsorship type, the system sponsor may seek other corporate partners. These secondary sponsors, called presenting sponsors, may also place their logo on the bicycle or serve as the official payment sponsors. Examples of presenting sponsors include New Balance in Boston's Hubway system and Blue Cross Blue Shield of Minnesota in Nice Ride Minnesota's system.



Salt Lake City's GreenBike program has a presenting sponsorship from Select Health and a basket sponsorship (a type of presenting sponsorship from Rio Tinto).

Source: SLC Bike Share

³¹ Although some systems are fully funded by a title or presenting sponsor, 30-40% is a more typical level of investment.

Stakeholder outreach found that there are a number of local health care organizations, hotels, local businesses, and other organizations that have the resources and interest to enter into a sponsor agreement with connections to New Orleans.

There is also potential for multiple presenting sponsorships. While a single title or presenting sponsor might yield a larger upfront capital investment and reduce efforts during the second wave of sponsor negotiations, it is unclear that this model is well suited to the New Orleans market. An alternative is to seek multiple presenting and major sponsors. This would make sponsorship more accessible to smaller businesses to invest in the system and reduce competition for a smaller number of sponsorships. Potential drawbacks to this approach may include the effort required to securing and maintain numerous sponsors and that brand recognition may become diluted with a broader set of sponsors.

The hospitality industry, professional sports franchises like the Saints and Pelicans, event spaces, could provide full or partial sponsorship.

Major Sponsor. Major sponsors contribute revenue to the system and receive some privileges, such as advertising on marketing material or exclusive advertising rights on the bicycles or at kiosks. Major sponsors, however, do not have their company name attached to the bike share program title, and they may have only a limited role in choosing the bike color, system design, and marketing campaigns. This sponsorship brings in less revenue for the program than title sponsorship, but system operators have more control over aesthetics and marketing.



Seattle Children's[®]
HOSPITAL • RESEARCH • FOUNDATION

In July 2013, Seattle Children's Hospital became a \$500,000 major sponsor of the future Puget Sound Bike Share system and will receive employee memberships to the bike-sharing program as well as marketing exposure.

Source: Seattle Children's Hospital

Station Purchase Sponsor. Universities, private businesses, and organizations frequently purchase stations to ensure employees have easy access to their campuses by bicycle. Several universities and a number of hospitals are located within the bike share operating footprint and may consider sponsoring a station. Station sponsor opportunities are also often located at large employers or major hotels, many of which are concentrated in the CBD, opening up station sponsorships as a way for employers to better cater to their employees and visitors.

Equity Matching. To promote an equitable system, private entities may choose to purchase or sponsor bike share stations or information kiosks located in lower income neighborhoods. For instance, if a major company would like to sponsor a station near their building, they can be asked or required to sponsor a station located in a low-income community that would benefit from

being a part of the network. This may be particularly effective with hospitals, which need to be accessible to all income groups.

Figure 44 Bike share sponsorship types

Sponsor Type	Investment Level	Benefits
Title or Presenting Sponsor	\$1 - \$2.5 million (lump sum or 3-5 year incremental payment)	Logo on all bikes and materials and media
Major Sponsor	\$100,000 - \$500,000	High exposure on bike share materials and media
Station/Hub Purchase Sponsor	Up to \$65,000 per station (could be more depending on the station design)	Guarantee station at corporate site, logo on website

Note: Actual investment levels may vary. For the purposes of this study, the investment levels detailed above correspond to sponsorships secured in similar markets.

Advertising

Many businesses may be interested in the advertising opportunities that bike share brings to a community. Although New Orleans’ historic districts have strict sign codes, advertising on mobile units and vehicle markings is not as limited. Placing advertising on the basket or rear fender has brought in additional revenue to many systems, including Miami’s Deco Bike. Businesses have also purchased ads at information kiosks, though these will likely not be permitted in the French Quarter and other historic neighborhoods.

On a larger scale, some cities have paired advertising contracts with the bike share program. Examples include Brisbane, Lyon, and Paris. Additional billboards and smaller signage throughout the city have generated stable revenue streams, helping some of these programs operate without any contributions from the local government.

This revenue stream comes with a number of challenges. The administrative costs of working with businesses in developing appropriate ads can cut into the profits. Moreover, additional advertising can lead to ad clutter, detracting from the aesthetics of New Orleans’ community.

Other opportunities

The New Orleans bike share program may also choose to leverage New Orleans’ energy industry resources to sponsor solar docking stations. Community partners may sponsor the implementation of solar panels and will in turn have a small decal acknowledging their contributions (e.g., “This bike share station is powered by Company X”).

Another option could be to work with the land development community. If a developer purchases or sponsors a station near a new development, the City could grant tax credits or reduce parking requirements in return for bike share accommodations. This may have the added benefit of reducing rents for residents and businesses.

Moreover, local businesses, such as retail stores, hotels, and restaurants, may choose to make contributions to stations that are sited near their location. Bike share program administrators may choose to follow in the footsteps of other bike share programs by providing promotions and coupons on their website and in newsletters. Coupon books featuring bike share station-adjacent businesses provide a promotional opportunity and may build community support for the program.

8 AN ACTION PLAN FOR BIKE SHARE

Throughout the Feasibility Study and Business Plan process, public and private sector stakeholders have expressed support and excitement for establishing a bike share system in New Orleans. This study determined that bike share is not only feasible, but it will flourish as a community mobility tool. It is clear that internal staff, advocates, and the business community are eager to move forward with implementation as quickly as possible.

Implementing New Orleans' bike share system will require the bike share non-profit (or other organizational lead if the non-profit is not pursued) to develop a clear and actionable work plan. This chapter offers insight into some of the key implementation action items as well as stakeholder-generated features that will help distinguish the bike share program as uniquely New Orleans.

IMMEDIATE ACTION PLAN

The following actions will move the bike share program forward to the vendor selection and pre-launch phase. The following Immediate Action Plan and supporting recommendations are intended to guide the project partners through key initial activities prior to establishing the non-profit's structure and hiring the non-profit's Executive Director.

The following six actions are recommended for execution over the next six months. These steps could be completed in a number of scenarios depending on how the program unfolds and what entities become involved. As recommended in Chapter 5, these actions should be completed as the Board of Director's monitor performance of hub-based, smart-bike systems in other cities.

Note: While several immediate actions only apply to non-profit development, many others are still applicable if another organizational structure is ultimately pursued.

Establish the bike share non-profit

The first step in implementing bike share is to form the 501(c)3 non-profit corporation (pursuant to the Louisiana Non-Profit Corporation Law, Title 12, Chapter 2 of the Louisiana Revised Statutes 1950. The City of New Orleans' home rule charter authorizes the foundation of non-profit corporations as components of City commissions. To form the bike share entity as an administrative non-profit corporation, it is necessary to establish a mission statement complementary to the City's mission, file articles of incorporation with legal representation, develop a financial structure, and apply for tax exempt status.

Next Steps and Responsibility: The City of New Orleans staff, led by the Mayor's Office should begin discussions internally to develop the bike share non-profit corporation ordinance, its internal structures, basic protocols, and terms of membership. The City should review the process of developing the New Orleans Business Alliance and the New Orleans Recreation

Development Commission to identify lessons learned when establishing those non-profit corporations.

Establish Interim Board of Directors

An interim Board of Directors should be established to guide the development of the bike share non-profit and establish initial protocol and bylaws. Critical roles for the interim Board would be to finalize and approve non-profit bylaws, hire an Executive Director, and begin early sponsorship discussions. The bylaws may be amended when the Executive Director is hired and the non-profit's new Board of Directors is selected. We recommend the interim Board consist of mayoral appointees and representatives of the Regional Planning Commission, private sector, non-profit sector, or from other institutions (such as universities). Established funders should be given priority on the Interim Board.

Next Steps and Responsibility: The Project Advisory Committee and Business Advisory Committee for the Bike Share Feasibility Study and Business Plan process should be convened within months of starting the implementation process to select members of the interim Board of Directors. .

Obtain Seed Funding

Identifying the initial funding to begin non-profit operations represents the most immediate challenge to implementing bike share. For the time being, no dedicated funding has been established to create and support operations of a non-profit corporation. Identifying seed funding is a critical initial step to bring the City closer to bike share implementation.

Next Steps and Responsibility: This Immediate Action Plan recommends identifying one or more interim lead fundraisers in subsequent immediate actions. More detail on fundraising is presented below.

Hire an Executive Director

More than any one person, the non-profit Executive Director will be instrumental in the program's success. Finding the right leader is imperative. A list of desired characteristics and qualities for the Executive Director position are presented in Figure 45.³²

Other important attributes include experience with Board management, relations, and getting Board resolutions passed; understanding of local permitting processes and permit expediting; and the ability to run a "lean" organization. The Executive Director must be adept at writing RFPs such as vendor and operator contracts and should be comfortable negotiating contracts with the support of a legal representative.

To manage and extend the reach of New Orleans's bike share fundraising effort during the Immediate Action Phase, seed fundraising discussions for the non-profit need to be limited to a few key individuals. In addition to the Executive Director, having someone from the private sector or a local foundation in this role – preferably someone who would serve on the Board of Directors – would help build confidence with other potential funders. The Executive Director must coordinate the fundraising efforts; providing support and direction to the fundraising lead.

³² These qualifications are based on the real experience of current bike share non-profit Executive Directors.

Next Steps and Responsibility: The interim Board of Director’s should finalize a set of requirements and desired attributes for the Executive Director position and determine a selection process for hiring the best candidate. The interim Board should then advertise the position broadly to attract as many qualified candidates as possible. New Orleans has a wealth of qualified professionals and entrepreneurs. The collective rolodex of the interim Board, Mayor’s Office, and other influential stakeholders should be tapped in order to identify a pool of great non-profit/business leaders.

If sufficient funding is available, the interim Board should seek to hire an Executive Director under a contract of at least two years to ensure stability through the implementation process. It is also advisable to structure the Executive Director’s contract with financial incentives for securing sponsorship deals, hitting implementation targets, and meeting system performance measures.

The interim Board of Director’s should immediately identify one or more lead fundraisers, which could be a local champion figure, board member, or other well-connected volunteer. This point person should develop a basic “pitch book” with supporting sales materials that can be used to secure “interim funding” on behalf of the interim Board.

Figure 45 Desired Executive Director characteristics and qualifications

Characteristic	Description
Business and/or legal acumen	Starting up and running a successful bike share non-profit will require extensive understanding of local business and legal frameworks. Contract writing and strong negotiation skills will also be a critical skill set when negotiating with the turnkey operator and the City on issues of liability, ownership, station siting, and the like. Likewise, experience with non-profit management is an attractive skill.
Communications and partnership building experience	Successful bike share non-profits have many supportive partners and rely on public and private sector support. Good interpersonal skills and the ability to negotiate private sponsor and public sector interests are critical.
Understanding of New Orleans and statewide politics	The ideal candidate will need to navigate local and statewide politics to maintain progress towards initial start-up.
Fundraising experience and ability to identify innovative funding sources	Fundraising is one of the most important tasks of an Executive Director. It is important for a candidate to have intimate knowledge of the local business environment and relationships with key businesses, the tourism industry, major institutions, and others interested in investing in sustainability initiatives.
Experience or understanding of business operations (bike share operations or otherwise)	Because the recommended operating model is an administrative non-profit, it is not critical that the Executive Director knows service operations. However, experience in this area would help ensure quality control and the ability to produce contracts with appropriate performance metrics.

Identify and retain partners and resources to support the bike share program

Professional and organizational resources need to be secured, formed, or identified to support the development of the non-profit organization or other organizational lead. Key supporting needs for the Immediate Action Plan and ongoing implementation include:

- Establishing an internal working group including representatives from the City of New Orleans Mayor's Office, Department of Public Works, City Planning Commission, City Council, RPC, RTA, Historic District Landmarks Commission, and Vieux Carre Commission and other key public sector stakeholders. The Working Group can provide support on items such as permitting and siting stations, historic district design review considerations and permitting, media outreach, public sector funding development, and fare integration. The City would need to dedicate a significant number of public employee hours to coordinate issues regarding permitting and other activities required to expedite bike share program development.
- Attaining marketing support and public messaging about bike share from RTA. Because a successful bike share system will yield positive ridership impacts for the local fixed route transit system, RTA confirmed interest in marketing and messaging bike share as an integrated component of the public transit system.
- Brokering partnerships with the New Orleans Business Alliance, Housing Authority of New Orleans, Greater New Orleans Housing Alliance, New Orleans Redevelopment Authority, and others to help site hub or kiosk locations, educate potential users, identify bike share champions or ambassadors, and learn about barriers to entry. This will feed into the strategy for equitable access.
- Establishing partnerships with groups like Bike Easy and Ride New Orleans that will serve as bike share ambassadors and provide education, advocacy, and outreach support.
- Formalizing a convention program with the Convention and Visitors Bureau and the New Orleans Convention Center. During stakeholder focus groups, representatives from the Convention and Visitors Bureau expressed interest in purchasing daily or multi-day passes for convention goers. This would provide an immediate and long-standing influx of revenue.

Next Steps and Responsibility: The interim Board of Directors should convene an internal bike share working group. The working group should be tasked with establishing partnerships and relationships to support the non-profit. The working group should also meet on a regular basis to identify implementation challenges and brainstorm ideas for how to overcome these challenges. The working group should also produce a work plan that can be used to prioritize implementation tasks and convey the public sector's in-kind support for bike sharing.

The working group and interim Board should identify potential candidates for pro-bono legal support, if legal support cannot be provided through the City of New Orleans.

Develop a communications and community outreach strategy

The bike share operator should develop a communications and community outreach strategy that establishes a roadmap for community outreach, education, and citywide messaging and media correspondence. A communications and community outreach strategy can be required as part of the vendor and operator RFP (see below). The strategy should meet and exceed the City's goals for equity and outreach as part of detailed system planning and implementation and guide the bike share operator as it develops program messaging, outreach activities, and mechanisms that

engender local support. The bike share operator and the City of New Orleans will likely be responsible for coordinating and delivering community outreach and communications activities. During the pre-launch phase, and until the bike share operator is in operation, the City of New Orleans' communications director will coordinate all media communication. The RTA, RPC, and the City of New Orleans Department of Public Works can provide technical support. Messaging should be high level, focusing on the City and region's role in conducting a feasibility study and business plan. This message should remain until the bike share operator can become the "face" of the project to the media and the public.

Once the bike share operator is established, the organization should lead all communications and media activities. This is critical to ensure the bike share program builds brand recognition, trust, and a rapport within the community and with potential funders.

Next Steps and Responsibility: Per recent discussions with public sector staff, media communications should be coordinated by the City of New Orleans communications director. The agreed upon communications and media strategy should be employed effective immediately.

Separate Vendor and Operator RFPs

Selecting a vendor and operator is an important step in establishing the bike share system. Negotiating the details of service, performance, and roles will influence the relationship between the contractors and the non-profit corporation and between the users and the service. A critical next step is to develop and release a vendor/operator request for proposals (RFP). The RFP stipulates the needs of the program and sets basic expectations for the future contract vendor/operator. Requirements may include vendor responsibility for fundraising, marketing, detailed station site design and performance monitoring, as well as bicycle design, payment and transactional requirements, thresholds for local staffing, and even opportunities to experiment with new technology and station or hub location design. Several opportunities arose during the stakeholder Idea Sessions, including:

- Integrating private bicycle parking into the design of the hub locations; and
- Investigating the viability of citizen-led hub location design (i.e., painted racks and kiosks to make the system uniquely NOLA and less likely to be vandalized).

The contract should include specific language requiring the operator to collect basic performance information. The operator should be required to provide a performance reporting web platform accessible to the public. This information should be linked to established performance metrics. The contracts may be tied to attainment of performance metrics.

Next Steps and Responsibility: With the support of the City's bike share working group, the interim Board of Directors and the Executive Director should write separate requests for proposals (RFPs) for the vendor and operator contracts. Reviewing, interviewing, and negotiating the contracts will be the responsibility of the interim Board and Executive Director.

SUPPORTING STRATEGIES

In addition to the immediate actions, the non-profit should begin work on implementing supportive strategies that will ensure ridership potential is met and system goals/objectives are addressed. These strategies will help capture lasting value and broad excitement for the program. Once the Executive Director has been hired, he/she will serve as the face of the organization and will lead all remaining implementation activities with the support of the Board. The following actions should be undertaken after the Executive Director has been hired.

Note: Most of the supporting implementation strategies are intended to support the development of a non-profit administered bike share program. However, all supporting strategies could be implemented by another organizational lead.

Fundraising

Perhaps the most pressing action to be pursued after the hiring of the Executive Director is identifying and securing capital funding. Capital funding will likely come from a diverse set of sources including public grants, foundation grants, sponsorship, and private gifts/contributions, among others. See the funding and revenue section in Chapter 7 for more information.

Next Steps and Responsibility: Capital fundraising is the Executive Director's primary role. While he/she could garner fundraising support from the contracted vendor/operator and other champions, this is a core responsibility of the Executive Director as it not only secures funds for implementation, but also develops relationships with potential funders and vocal supports with political sway.

Design and implement initial kiosk/hub location planning and siting process (work with DPW, CPC, HDLC and the VCC)

Station siting and outreach to local communities and property owners represents one of the most time intensive elements of the bike share implementation process. The Executive Director should work with the City-led bike share working group to begin design and permitting of stations. The Executive Director should work hand-in-hand with the DPW, CPC, HDLC and VCC to ensure the concerns of historic district residents are addressed.

In addition to these tasks, the planning work should identify potential impacts including parking loss, sidewalk furniture zone needs, and coordination with bike infrastructure. The technical team would need to include specialists in business engagement and education.

Next Steps and Responsibility: The City of New Orleans should coordinate with the administrative non-profit. A scope of work for the station planning and design should be developed. Contracting this work through the bike share non-profit or the fiscal host should allow a relatively quick selection process relative to a public agency-led process.

Reduce parking requirements for developers that purchase bike share stations and fund operations

The City of New Orleans should establish a zoning mechanism that reduces parking requirement for developers that purchase a bike share station and cover annual operating funds for that station. This must be considered for the Comprehensive Zoning Ordinance due for completion by October 2014. Requiring the station to be sited at the development site will give tenants

additional transportation options and reduce parking demand at the site. A guaranteed contribution to the annual operating fund may be tied to a penalty fee held in trust.

Next Steps and Responsibility: City of New Orleans staff should probe land developers to assess the potential impact of the code change. With public and private support, the City should update the City zoning code to include the parking requirement reduction.

Establish a convention attendee pass program

The non-profit should work with the Convention and Visitors Bureau (CVB) and New Orleans Convention Center to develop a convention attendee sponsorship. Through a pass program for convention attendees the CVB purchases a bulk number of daily or multi-day passes for convention attendees to offer as a convention perk. This cost can be tied to the convention attendance cost and will provide a unique experience for attendees and revenue support for bike share.

Next Steps and Responsibility: The non-profit and the CVB need to negotiate a rate based on the number of passes purchased in bulk and the expected utilization of the passes by attendees. This price should be renegotiated as real data is collected about the utilization rate.

Establish shared mobility hubs at transit centers and in peripheral neighborhoods

Bike share should be viewed not as a standalone mode, but as part of a broader suite of mobility options. To that end, the City should develop a network of integrated mobility hubs equipped with bike share, transit, and car share facilities. Mobility hubs should be sited in transit rich centers, but also in peripheral neighborhoods that have gaps in transit service.

Next Steps and Responsibility: Coordination between the non-profit, RTA, and the City of New Orleans should identify mobility hub locations and study origin-destinations pairs for people living in peripheral neighborhoods. By studying where access improvements are needed, it will be possible to expand the reach of public transportation system, support bike share, and fill in current transit service gaps.

Develop a pre-implementation promotional demonstration

Many city festivals exhibit notorious congestion on streets surrounding the event venue and parking areas. The non-profit and the systems vendor/operator should use a major event as an opportunity to demonstrate the value of bike share. By providing bike share facilities to facilitate connections between hotels, retail areas, and dense residential neighborhoods to the festival venue site, the non-profit can begin to establish the need for bike share from an event congestion mitigation standpoint. Jazzfest is not recommended as a demonstration project because demand would overwhelm resources and possibly create a negative experience for users waiting for bikes.

Next Steps and Responsibility: Non-profit staff and the selected vendor and operator should coordinate with event organizers to implement a weeklong demonstration project with supporting marketing materials and staff.

Identify a highly visible, generally respected public icon as an “Active Living” spokesperson for the system

During the stakeholder Idea Sessions, it became clear that public perception of bike share and bicycling in general could be positively influenced if a high-profile figure promoted bike share and active living. Public icons could include sporting figures or other institutional mainstays in New Orleans.

Next Steps and Responsibility: City Hall and friends of the bike share non-profit should leverage their contacts and relationships with high-profile public figures to establish a public figure to begin promoting bike share and active transportation.

Integrate fare media

A key outcome of the stakeholder engagement effort was broad interest in consolidating and integrating fare media between RTA bus, streetcar, ferry, and bike share service. The vision is that public transportation customers can seamlessly navigate all options in the system –from ferry to streetcar to bike share –using one fare media.

Next Steps and Responsibility: Fare media integration is a major undertaking that needs to begin early in the bike share implementation process. The non-profit and the contracted bike share vendor/operator should coordinate with RTA to integrate bike share, bus, rail and other fares into a single fare media (e.g., card, key fob, smart phone, or other). The RTA is currently studying new fare media and bike share fare integration options. The bike share non-profit should specify in the equipment vendor RFP that bidders must demonstrate the ability of their hardware and software platforms to accommodate integrated fare media considered by RTA.

Extend bicycle infrastructure

Although the City of New Orleans has expanded the bicycle network in recent years, the Phase 1 and much of the Phase 2 service area is not well connected by bikeways. Providing a well-connected network of safe and comfortable bikeways in New Orleans is important to enable more casual, occasional riders and lay the groundwork for long-term ridership. Current gaps in the bikeway network need to be removed to establish continuous connectivity from upriver to downriver and from the River to the Lake. The wealth of fine grain connections afforded by the neighborhood streets are an opportunity to create continuous low-stress bicycle priority connections throughout the city (i.e., bike boulevards).

Idea Session participants also identified a citywide bicycle wayfinding system as a key low, hanging fruit investment.

Next Steps and Responsibility: Both prior to and after bike share is launched, the City of New Orleans should focus investment in bikeway implementation and a network of wayfinding signs.

Develop an Education, Safety and Awareness Campaign

An oft repeated message voiced by community stakeholders is that New Orleans has a strong car culture and the needs of people on bicycles are not generally understood by the broader public. A robust education and awareness campaign supported by the City in partnership with key stakeholders such as RPC, RTA, Ride New Orleans, and Bike Easy should work to change this perception and support new riders.

Next Steps and Responsibility: In addition to bikeway implementation (see recommendation above), the initial bike share launch needs to be supported by a visible and effective awareness campaign that educates people about bike share’s benefits, how to drive in the presence of cyclists and how to ride a bicycle in urban environments. There needs to be a coordinated strategy of infrastructure improvements, education, marketing, and enforcement. This could be coupled with helmet sponsorships, or programs that provide discounted or free helmets.

Promotion, Access and Use of Bike Share among Lower Income and Minority Residents

Bike share is public transportation; in New Orleans, the bike share network will promote access and use by the whole community. In the wake of Hurricane Katrina transit service was decimated and service is slowly recovering. Bike share fills an important void for users of public transportation, closing gaps in service and providing mobility and access for residents. The promotion, access, and use of bike share by lower income and minority residents is a high priority for the City and should be developed even before the non-profit is established. Messaging, information about bike share, and demonstrations that illustrate bike share’s role as public transportation will bolster use amongst lower income and minority residents.

Next Steps and Responsibility: Develop and implement an equity action plan. The call out box on the following pages provides background information and framing strategies that will help the non-profit and the City achieve its goals for meaningful, targeted, and equitable access to bike share.

NEW ORLEANS’ PRELIMINARY EQUITY STRATEGY FOR BIKE SHARE

Bicycling for Diverse Communities

Much research has been done of late on bicycle utilization generally among various demographic groups. Young men, overall, make up the largest portion of casual or frequent cyclists. White men comprise a large portion of this block. Women represent a much smaller proportion, although their numbers are growing, particularly in cycling for utilitarian purposes (commute to work or to accomplish errands). People of color make up a smaller portion of the cycling community than they do the extant population as a whole.

Barriers to cycling for low income, female and/or minority residents are real. The fatality rate for bicyclists is 23% higher for Hispanics and 30% higher for African Americans than it is for white residents. Lynn Weigand, PhD, former Director of the Initiative for Bicycle and Pedestrian Innovation at Portland State University, conducted a number of interviews with members of the African American, Hispanic and African immigrant communities in Portland, OR. Her research found that among Hispanics some of the significant barriers to cycling included the cost of procuring a bicycle, the inability to ride safely with their children, no safe place to store bicycles if they had one and a general lack of safety in their communities (in each instance over 60% of respondents identifying these concerns.) Among African Americans the dominant obstacle was a concern about driver hostility toward them with a full 100% of interviewees identifying this concern. Other barriers often identified for these demographic groups is a desire to travel in a group or with friends and a lack of a “bicycling culture” or a number of bicyclists of color

representing these groups. Despite this, over one quarter of people of color indicated they would like to ride more but were worried about safety.

Women are also under represented in the bicycling population as compared to the general population. Women make up only approximately 27% of bicycling trips made although they comprise 51% of the population. Women are often referred to as the “indicator species” for inviting bicycling conditions as women tend to be more risk averse in their cycling habits and will only brave cycling on streets if they feel well protected and generally safe in (or from) traffic. Cities have made extensive investments in bicycling facilities in recent years and, as a result, have seen a marked improvement in bicycling rates among women.

Income has also frequently been identified as a barrier to bicycling as well. Research, however, has failed to find a strong correlation between income and low bicycling rates. In fact, many low income workers have found that bicycling – with an average annual cost of \$308 per year – is a much more affordable and reliable transportation option compared to an average of \$8,220 to own and operate an automobile. Transportation costs can be dauntingly high for low income workers. Transportation costs for households earning less than \$25,000 per year can consume 40% of their income, exceeding even the cost of housing.

The New Orleans Context

New Orleans is a “majority minority” city. Nearly 60 percent of city residents identify as African American and 69 percent overall identify as people of color. It is also a relatively young city with an average age of 34.6 compared to a state median age of 38.5 years and a national average of 37.2 years.

It is a city that struggles with comparatively low incomes and high poverty rates. Although educational attainment levels rose from 2000 to 2010, incomes fell. The 2012 median household income for New Orleans was \$34,361 compared to the metro average of \$44,379 and the national median of \$51,371. Poverty rates have remained relatively static from 1999 to 2012 at roughly 29 percent -- well above the national poverty rate of 16 percent. African American households made up the largest share of households in poverty. 36 percent of renters in Orleans Parish are classified as “severely cost-burdened” – meaning that household costs exceed 50 percent of their household incomes – reflecting a dramatic rise in housing costs since 2000.

Although the unemployment rate in New Orleans roughly reflect the national unemployment picture (roughly 8.8% in 2012), unemployment is particularly acute among working age (16 to 64 years old) African American men in the city. According to a 2013 report, unemployment among this group, although typically disproportionately high in the city, has increased from 37% in 1980 to 52% in 2011 (compared to 25 percent unemployment rates for working age white males). Although educational attainment and changes in the make up of local industry are the most significant factors in this unequal employment landscape, access to reliable and affordable transportation may also play a role.

Access to employment also challenges some residents of New Orleans. Household access to an automobile improved markedly over the decade decreasing from 27 percent without such access in 2000 to 19 percent in 2012. 10 percent of working households in New Orleans lack access to a vehicle.

In terms of financial resources, 37 percent of New Orleans households are “asset poor” – meaning they have insufficient resources to support themselves at the poverty line for a period of three

months should they lose their income. Nearly one quarter live in extreme asset poverty. Over 70 percent of New Orleans residents, compared to 57 percent nationally, have subprime credit scores challenging their access to credit. 21 percent of New Orleans' non-elderly population lacks health insurance compared to 18 percent nationally.

Bike Share and Equity

Many bike share programs across the country have taken steps to ensure equitable access to the system and services; however utilization of bike share among low income and minority residents appears to lag far behind their proportional numbers in the population at large.

Bike share itself addresses some of the obstacles to bicycling identified by would-be bicyclists of color. Bike share is generally low cost and removes the financial burden of owning a bicycle. Bicycles are maintained by the system alleviating maintenance and vehicle reliability concerns. And bike share provides a safe and secure location for bicycle parking and storage.

Bike share often does not, however, passively address other concerns raised by women and people of color. Although bike share bicycles are among the safest and sturdiest on the road, bike share systems generally are not responsible for establishing bicycle facilities such as bike lanes, trails or protected cycle tracks. Bike share systems may include sensitivity campaigns for drivers to improve their awareness of and response to cyclists, however most education is directed at the bike share user rather than drivers. Bike share is generally not designed for use by children and therefore does not well-address desires or needs for family bicycling.

Many traditional practices or aspects of bike share systems may also inadvertently challenge use and access by low income or minority residents.

Station locations: To be financially viable, bike share stations must be productive – meaning they must have a high rate of utilization. This generally occurs in high activity and high density areas which tend to also be high income areas. The experience of several systems who have located stations in lower income and/or less dense areas is that these stations, although necessary and desired, have relatively low utilization rates and low productivity. Necessarily, the majority and higher concentration of stations are typically located in higher productivity areas.

Membership costs: Although bike share membership is relatively inexpensive (typically \$50 to \$85 per year) compared to other annual transportation costs, a lump sum payment of this amount can be too great for many low income workers or travelers to afford. Many systems have offered alternative membership arrangements to circumvent this obstacle including installment payments, free or dramatically reduced cost memberships.

Membership requirements: Many systems have been challenged in finding work arounds for other membership requirements – principally the need to securitize bicycle usage. Early systems required a credit hold to borrow a bicycle – thus requiring sufficient credit or personal account resources to provide. Increasingly systems have eliminated this credit hold, but most still require some access to a user's financial profile or accounts. Many still require even low income users to bear the cost of bicycle replacement in the event of loss or theft. Some have found third-party partners to cover bicycle replacement risk, however even in these instances users must provide sufficient financial deposits to cover any use overages (when the user exceeds the allowed "free" period of bicycle use). Because many low income residents lack access to credit, debit or sufficient stored value card accounts, this can present a significant obstacle.

Web-based system information: Most systems provide users with real-time information on the system – which stations/hubs have bicycles and docks available and which do not. This information is primarily accessed through smart phone apps, although is also available online through traditional webpages. While this is a great convenience to smartphone users with on the go data plans and internet access, it provides little benefit to those who rely primarily on text (MSM) communication. This is common among lower income and immigrant residents as texting plans are much more affordable than data plans and meet their communication needs.

Recommended Bike Share Equity Strategy for New Orleans

New Orleans must take specific and diligent action to provide equitable access to the bike share system and encourage representative use. These actions will steer New Orleans away from the symbolic initiatives that are traditionally established in bike share programs toward more targeted and effective equity programs. The following strategies are recommended:

Messengers matter. The City should engage in partnerships with existing groups that are known and trusted among the low income and African American communities of the city. There is often a high degree of distrust between minority communities and government programs or new nonprofit initiatives. Partnering with known groups such as public housing resident associations, health workers, school support networks, and others may help to penetrate these communities in order to provide information about the system, mitigate suspicion or distrust, and bring information back to system planners and operators about unique obstacles and potential solutions. This outreach should begin as soon as possible to both inform system development and reduce, to the extent possible, early perceptions that the system is only for use by higher income, tourist or white constituencies. If a board of advisors is formed for the system, a fair share of its members should be representatives from these target groups.

Membership media integration. Most, but not all, bike share systems include a unique card or fob for accessing the bicycle system. In order to increase utilization and ready access by low income and minority residents it is strongly advisable to seek out ways to utilize media these population groups may already possess. Low income and minority groups may be suspicious of providing personal identification information to a new system. By linking this system to existing programs for which they have already registered and provided such information, it removes another barrier. Systems to consider may include transit passes, library cards, parks or recreation program IDs, or WIC, food stamp or unemployment benefit stored value cards. It may be beneficial to solicit bike share operators to provide a system that does not require a unique card or fob at all but rather utilizes PIN codes or access numbers that can be texted to users at their request.

Extended usage periods. Demographic analysis of New Orleans indicates that many low income residents and un- or under-employed residents live a fair distance away from the major employment centers. In order to accommodate the use of the bike share system for access to employment and access to amenities (which also may be a good distance away from low income residences) the free grace period of bicycle utilization should be extended up to one-hour for annual members compared to 30 minutes for daily users. Escalation rates for usage beyond the grace period should also be reduced for registered low-income members in order to enable them to satisfy other travel needs (e.g. multi-stop shopping, errands or other non-commute trips).

Cash payments. Many low income residents function strictly in a cash economy. These potential users must be provided for options to “pay as you go” and to pay with cash. It is

theoretically possible for bike share kiosks to accept cash payment before providing an access code for bicycle utilization; however this may lead to vandalism of kiosks. It is instead recommended that New Orleans explore opportunities to enable payment at certain retail outlets (for instance chain pharmacies or grocery stores, post offices, lottery sales stations, etc.); and/or with partner banks through their ATM network. Users would provide the necessary fee in exchange for an access code for bicycle use.

Utilize MSM networks. As stated above, the “digital divide” has changed somewhat in form. Although a larger proportion of the population has access to cell phones, not all have access to unlimited data plans thus limiting the convenience of real time knowledge of bike share assets and availability. New Orleans should challenge bike share providers to provide a text based system to provide necessary information through MSM in addition to web-based apps.

Eliminate “holds”. Bicycle loss or theft is typically very low in bike share programs around the country. This fact has enabled most bike share programs to eliminate the necessity to place financial holds on annual members, and frequently on daily members as well.

Reduced cost membership. As other systems have done, New Orleans should offer dramatically reduced cost memberships to qualified low income members.

Identify partners to securitize bicycles. Despite being low, bike share operators still generally require some means to recoup costs in the unlikely event that a bicycle is lost or stolen. This generally means that, although they do not place “holds” on financial resources, users must demonstrate enough financial capacity to cover the cost of a lost asset. This potential debt would be devastating for many low income households should the unlikely ever come to pass. To eliminate this personal risk, New Orleans should seek partnership with some entity to provide this securitization. Local Community Development Financial Institutions, foundations, or other parties focused on poverty alleviation and access to jobs may be willing to provide security for bicycle use and possible overage charges. This partnership could be vital to providing access to the system.

Partner with health programs. Obesity and diabetes are significant concerns throughout New Orleans but are particularly acute in the low income and minority communities. The system should work in partnership with programs providing services, education and outreach to these communities to promote bike share utilization not only for travel to work, but for physical fitness. Given the benefits of improved physical fitness on decreasing health cost burdens, the city and health providers should consider providing monetary benefits to program participants who log miles onto the bike share bicycles to improve their physical health. These credits could help to offset membership or usage fees.

System rebalancing credits. System rebalancing is a significant cost in any bike share system. Imbalanced systems result in high levels of user dissatisfaction and lost revenues. New Orleans should challenge system operators to propose a system to provide usage credits to members who assist in rebalancing the system – bringing bicycles from full or nearly full stations to empty or nearly empty stations.

Community and Business Fare Vending. Develop a program where users can purchase memberships and daily passes at qualifying vendor locations. This could include community organizations, markets, and other retail locations that might want to drive traffic into their storefront. This would require basic infrastructure like payment apps and tablets. This type of program would also require annual pre-registration to tie users to a user account.

Station location. A prerequisite of any system in New Orleans is that stations be accessible not only in the high activity areas of the city, but also in lower income and less transit rich areas of the city to provide supplemental transportation services to these communities. Opportunities to extend physical access to the bike share network include *equity purchasing*. Developing an “equity purchase” funding mechanism that either requires station sponsors to pay a nominal incremental fee for permitting that could go into a equity station capital fund requiring dual hub location purchase for developers, business owners, or other interested station purchasers in areas with the highest demand for bike share use. This mechanism would ensure new lower cost/capacity hub locations (possibly without kiosks or map panels) are located in areas that are not currently served by bike share.

Short-term neighborhood bike loan program. Access to a bicycle is the single greatest barrier to minorities’ use of bicycles. The non-profit should partner with local organizations in targeted neighborhoods to offer participants a bicycle for up to four months. This program will help orient low- income individuals to bicycling, eliminating this basic barrier to entry. Participants will also learn how to access the bike share program and ascertain bike skills. This should be stipulated as part of the vendor/operator RFP. This type of program is being launched in Minneapolis and St. Paul in August 2014.

Develop bike share partnership with the City of Philadelphia—an emerging leader in bike share equity. The non-profit should leverage Mayor Mitch Landrieu’s relationship with Philadelphia’s executive staff to engage in best practice exchange.

IMPLEMENTATION TIMELINE

An 18- to 24-month implementation timeline is achievable based on the decision to pursue the recommended organizational structure, the ability of the City to create non-profit corporations, and initial funding opportunities from RPC and private companies. The timeline displayed below communicates a select number of critical implementation activities by month. Additional details related to specific launch activities (website development, hiring, smart phone app development, etc.) will be developed by the non-profit’s Executive Director, staff, and Board of Directors.

Figure 46 Bike share implementation timeline for New Orleans

Month 1-6 <i>Immediate action phase activities</i>	Month 7-10 activities <i>Pre-vendor selection activities</i>	Month 11-24 <i>Pre-deployment activities</i>
<ul style="list-style-type: none"> ▪ Track performance and experience of emerging hub-based, smart bike systems in North America ▪ Develop a multi-agency bike share working group ▪ Establish non-profit ▪ Establish an interim Board of Directors ▪ Identify and retain resources to support non-profit development ▪ Develop and begin implementing communications, media, and community outreach strategy ▪ Identify one or more interim lead fundraisers and secure seed funding ▪ Hire Executive Director 	<ul style="list-style-type: none"> ▪ Finalize the non-profit’s Board of Directors ▪ Brand and name system (public, grassroots process) ▪ Capital Fundraising ▪ Plan and design hub location planning and design (could also happen after vendor / operator is selected) ▪ Begin permitting/use agreement process with DPW, CPC, HDLC and VCC ▪ Establish vendor selection committee ▪ Begin hiring key support staff ▪ Develop and issue separate RFP for equipment and operations 	<ul style="list-style-type: none"> ▪ Select vendor/operator ▪ Continue securing capital and operating funding ▪ Deliver a promotional demonstration project ▪ Refine the business plan based on secured funding ▪ Launch system

APPENDIX A

Detailed Cost Estimates

DETAILED SCENARIO 1 (STATION-BASED) CAPITAL AND ASSOCIATED COSTS

Phase 1

Cost element	Unit cost	Quantity	Cost
19-dock solar station, including kiosk and platforms	\$46,000	60	\$2,760,000
Bikes	\$1,200	827	\$992,400
Station Assembly (per station)	\$1,200	60	\$72,000
Station Deployment Vehicle Costs (per station)	\$1,000	60	\$60,000
Bike Assembly (per bike)	\$75	827	\$62,025
Map Production/Printing (per station)	\$75	60	\$4,500
Bike Spare Parts (per bike)	\$120	827	\$99,240
Station Spare Parts (per station)	\$1,000	60	\$60,000
On-Street Bike Maintenance Vehicles	\$3,000	2	\$6,000
Total			\$4,116,165
Total (ROUNDED)			\$4,100,000
<i>per station</i>			<i>\$68,602.75</i>
<i>per bike</i>			<i>\$4,977.22</i>

Note: Assumes 60 stations and 827 bicycles

Note: All projections are planning-level.

Phase 2

Cost element	Unit cost	Quantity	Cost
19-dock solar station, including kiosk and platforms	\$46,000	22	\$1,012,000
Bikes	\$1,200	174	\$208,800
Station Assembly (per station)	\$1,200	22	\$26,400
Station Deployment Vehicle Costs (per station)	\$1,000	22	\$22,000
Bike Assembly (per bike)	\$75	174	\$13,050
Map Production/Printing (per station)	\$75	22	\$1,650
Bike Spare Parts (per bike)	\$120	174	\$20,880
Station Spare Parts (per station)	\$1,000	22	\$22,000
On-Street Bike Maintenance Vehicles	\$3,000	1	\$3,000
Total			\$1,329,780
Total (ROUNDED)			\$1,300,000
<i>per station</i>			<i>\$60,444.50</i>
<i>per bike</i>			<i>\$7,642.41</i>

Note: Assumes net addition of 22 stations and 174 bicycles to Phase 1 costs.

Note: All projections are planning-level.

DETAILED SCENARIO 2 (SMART-BIKE, HUB-BASED) CAPITAL AND ASSOCIATED COSTS

Phase 1

Cost element	Unit cost	Quantity	Cost
Freestanding Info/Map Panel	\$2,000	45	\$90,000
Freestanding Payment Kiosk	\$10,000	45	\$450,000
Custom, Branded Rack	\$175	2389	\$418,075
Rack Base Plate (per rack)	\$90	2389	\$215,010
Bikes	\$1,200	1245	\$1,494,000
Hub Assembly (per hub)	\$600	89	\$53,400
Station Deployment Vehicle Costs (per hub)	\$200	89	\$17,800
Bike Assembly (per bike)	\$75	1245	\$93,375
Map Production/Printing (per hub)	\$75	45	\$3,375
Bike Spare Parts (per bike)	\$120	1245	\$149,400
Kiosk/Map Panel Spare Parts (per hub)	\$1,000	89	\$89,000
On-Street Bike Maintenance Vehicles	\$3,000	2	\$6,000
Total			\$3,079,435
Total (ROUNDED)			\$3,100,000
<i>per hub</i>			<i>\$34,600.39</i>
<i>per bike</i>			<i>\$2,473.44</i>

Note: Assumes 89 stations and 1,245 bicycles

Note: Rack base plates are optional but prevent penetration into the street/sidewalk surface. Base plates are required for the kiosk and info/map panel. This cost estimate assumes 50% of Phase 1 hubs include a kiosk and info/map panel.

Note: All projections are planning-level.

Phase 2

Cost element	Unit cost	Quantity	Cost
Freestanding Info/Map Panel	\$2,000	55	\$110,800
Freestanding Payment Kiosk	\$10,000	55	\$554,000
Custom, Branded Rack	\$175	5081	\$889,175
Rack Base Plate (per rack)	\$90	5081	\$457,290
Bikes	\$1,200	2679	\$3,214,800
Hub Assembly (per hub)	\$600	277	\$166,200
Station Deployment Vehicle Costs (per hub)	\$200	277	\$55,400
Bike Assembly (per bike)	\$75	2679	\$200,925
Map Production/Printing (per hub)	\$75	55	\$4,125
Bike Spare Parts (per bike)	\$120	2679	\$321,480
Kiosk/Map Panel Spare Parts (per hub)	\$1,000	55	\$55,000
On-Street Bike Maintenance Vehicles	\$3,000	2	\$6,000
Total			\$6,035,195
Total (ROUNDED)			\$6,000,000
<i>per hub</i>			<i>\$21,787.71</i>
<i>per bike</i>			<i>\$2,252.78</i>

Note: Assumes net addition of 277 stations and 2,679 bicycles to Phase 1 costs.

Note: Rack base plates are optional but prevent penetration into the street/sidewalk surface. Base plates are required for the kiosk and info/map panel. This cost estimate assumes 20% of Phase 1 hubs include a kiosk and info/map panel.

Note: All projections are planning-level.

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SCENARIO 1 (STATION-BASED) PRE-LAUNCH AND ON-GOING OPERATING COSTS

Cost element	Type	Unit cost	Benefits	PHASE 1			PHASE 1+2		
				Units	Non-Profit/ Pre-Launch Cost	Pre-Launch + Ongoing Operating Cost (post-launch)	Units	Expansion Cost	Pre-Launch + Ongoing Operating Cost (post-launch)
EMPLOYEE EXPENSES									
General & Administrative									
Executive Director	FTE	\$80,000	\$16,000	1	\$96,000	\$96,000	1	\$-	\$96,000
Marketing and Public Relations	FTE	\$60,000	\$12,000	1	\$-	\$72,000	1	\$-	\$72,000
Finance, Accounting, and Grants	FTE	\$50,000	\$10,000	0.5	\$-	\$30,000	0.5	\$-	\$30,000
Human Resources	FTE	\$40,000	\$8,000	0.5	\$-	\$24,000	0.5	\$-	\$24,000
General Administrative	FTE	\$40,000	\$8,000	1	\$-	\$48,000	1	\$-	\$48,000
Operations									
Operations Manager	FTE	\$60,000	\$12,000	1	\$-	\$72,000	1	\$-	\$72,000
Shift manager	FTE	\$45,000	\$9,000	0	\$-	\$-	0	\$-	\$-
Redistribution crew	FTE	\$38,000	\$7,600	3	\$-	\$136,800	3	\$-	\$136,800
IT Specialist	FTE	\$55,000	\$11,000	1	\$-	\$66,000	1	\$-	\$66,000
Station Techs	FTE	\$50,000	\$10,000	1	\$-	\$60,000	1	\$-	\$60,000
In-Field Bike Maintenance	FTE	\$40,000	\$8,000	2	\$-	\$96,000	2	\$-	\$96,000
In-Shop Bike Maintenance	FTE	\$40,000	\$8,000	2	\$-	\$96,000	2.5	\$-	\$120,000
DIRECT COSTS									
Operations & Equipment									
Facility/Warehouse Set up / Rent	sf	\$21	N/A	3000	\$-	\$63,000	4500	\$-	\$94,500
Furnishings (post-launch)	% rent cost	5%	N/A	N/A	\$-	\$3,150	N/A	\$-	\$4,725
Utilities (pre-launch)	set	\$400	N/A	1	\$-	\$400	1	\$-	\$400
Utilities (post-launch)	% rent cost	25%	N/A	N/A	\$-	\$15,750	N/A	\$-	\$23,625

NEW ORLEANS BIKE SHARE FEASIBILITY STUDY AND BUSINESS PLAN | FINAL REPORT

				PHASE 1			PHASE 1+2		
Cost element	Type	Unit cost	Benefits	Units	Non-Profit/ Pre-Launch Cost	Pre-Launch + Ongoing Operating Cost (post-launch)	Units	Expansion Cost	Pre-Launch + Ongoing Operating Cost (post-launch)
Supplies and Equipment (pre-launch)	set	\$20,000	N/A	1	\$20,000	\$-	1	\$-	\$-
Supplies and Equipment (post-launch)	per station	\$200	N/A	60	\$-	\$12,000	82	\$-	\$16,400
Redistribution Vehicles	vehicles (per mo)	\$18,000	N/A	2	\$-	\$36,000	2	\$-	\$36,000
Maintenance Vehicles	vehicles (per year)	\$12,000	N/A	1	\$-	\$12,000	1	\$-	\$12,000
Station relocation vehicle rental	# of relocations	\$750	N/A	15	\$-	\$11,250	20	\$-	\$15,000
Fuel	% vehicle cost	10%	N/A	N/A	\$-	\$5,925	N/A	\$-	\$6,300
Fuel (Pre-launch)	Fixed cost	\$600	N/A	1	\$600	\$-	1	\$-	\$-
IT & Communications									
Web Site Design and Programming	Fixed cost	\$20,000	N/A	1	\$20,000	\$-	1	\$-	\$-
System Software Setup	Fixed cost	\$50,000	N/A	1	\$50,000	\$-	1	\$-	\$-
Software License, Support, Upgrades	per mo/station	\$140	N/A	720	\$-	\$100,800	984	\$-	\$137,760
Station wireless communications	per mo/station	\$40	N/A	720	\$-	\$28,800	984	\$-	\$39,360
Employee Communications	employees	\$720	N/A	14	\$-	\$10,080	14.5	\$-	\$10,440
Customer service	per station (annual)	\$2,250	N/A	60	\$-	\$135,000	82	\$-	\$184,500
Bike Share Launch and Upkeep Materials									
Site Planning and Permitting (per new station)	per station	\$2,000	N/A	60	\$120,000	\$-	22	\$44,000	\$-
Community Outreach	Fixed cost	N/A	N/A	1	\$75,000	\$-	1	\$50,000	\$-
Marketing and Promotional Materials	Fixed cost	\$60,000	N/A	1	\$60,000	\$-	.25	\$15,000	\$-

NEW ORLEANS BIKE SHARE FEASIBILITY STUDY AND BUSINESS PLAN | FINAL REPORT

				PHASE 1			PHASE 1+2		
Cost element	Type	Unit cost	Benefits	Units	Non-Profit/ Pre-Launch Cost	Pre-Launch + Ongoing Operating Cost (post-launch)	Units	Expansion Cost	Pre-Launch + Ongoing Operating Cost (post-launch)
(pre-launch)									
Marketing and Promotional Materials	Fixed cost	\$100,000	N/A	1	\$-	\$100,000	1	\$-	\$100,000
(post-launch)									
Staff uniforms	employee (annual)	\$200	N/A	14	\$-	\$2,800	14.5	\$-	\$2,900
Bike parts	per bike (annual)	\$20	N/A	827	\$-	\$16,540	1001	\$-	\$20,020
Station parts	per station (annual)	\$300	N/A	60	\$-	\$18,000	82	\$-	\$24,600
Annual bike replacement	% bicycle cost	1.5%	N/A	827		\$14,886	1001		\$18,018
Map Design	Fixed cost	\$20,000	N/A	1	\$-	\$20,000	1	\$-	\$20,000
Other Administrative Direct Costs									
Legal (pre-launch)	Fixed cost	\$12,000	N/A	1	\$12,000	\$-	N/A	\$-	\$-
Legal (post-launch)	Fixed cost	\$15,000	N/A	1	\$-	\$15,000	N/A	\$-	\$-
Travel (pre-launch)	Fixed cost	\$12,000	N/A	1	\$12,000	\$-	N/A	\$-	\$-
Travel (post-launch)	Fixed cost	\$12,000	N/A	1	\$-	\$12,000	N/A	\$-	\$-
Insurance (pre-launch)	Fixed cost	\$8,000	N/A	1	\$8,000	\$-	N/A	\$-	\$-
Insurance (post-launch; includes liability, equipment, auto, worker's comp)	Fixed cost	\$80,000	N/A	1	\$-	\$80,000	1	\$-	\$80,000
Total					\$473,600 (one-time)	\$1,510,181 (per year)		\$109,000 (one-time)	\$1,667,348 (per year)
Total (ROUNDED)					\$474,000 (one-time)	\$1,510,000 (per year)		\$109,000 (one-time)	\$1,667,000 (per year)
Cost per station						\$25,167			\$20,329
Cost per bike						\$1,826			\$1,665

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SCENARIO 2 (SMART-BIKE, HUB-BASED) PRE-LAUNCH AND ON-GOING OPERATING COSTS

Cost element	Type	Unit cost	Benefits	PHASE 1			PHASE 1+2		
				Units	Non-Profit/ Pre-Launch Cost	Pre-Launch + Ongoing Operating Cost (post-launch)	Units	Expansion Cost	Pre-Launch + Ongoing Operating Cost (post-launch)
EMPLOYEE EXPENSES									
General & Administrative									
Executive Director	FTE	\$80,000	\$16,000	1	\$96,000	\$96,000	1	\$-	\$96,000
Marketing and Public Relations	FTE	\$60,000	\$12,000	1	\$-	\$72,000	1	\$-	\$72,000
Finance and Accounting	FTE	\$50,000	\$10,000	0.5	\$-	\$30,000	0.5	\$-	\$30,000
Human Resources	FTE	\$40,000	\$8,000	0.5	\$-	\$24,000	0.5	\$-	\$24,000
General Administrative	FTE	\$40,000	\$8,000	1	\$-	\$48,000	1	\$-	\$48,000
Operations									
Operations Manager	FTE	\$60,000	\$12,000	1	\$-	\$72,000	1	\$-	\$72,000
Shift manager	FTE	\$45,000	\$9,000	0	\$-	\$-	3	\$-	\$162,000
Redistribution crew	FTE	\$38,000	\$7,600	3	\$-	\$136,800	8	\$-	\$364,800
IT Specialist	FTE	\$55,000	\$11,000	1	\$-	\$66,000	1	\$-	\$66,000
Hub Techs	FTE	\$50,000	\$10,000	1	\$-	\$60,000	1	\$-	\$60,000
In-Field Bike Maintenance	FTE	\$40,000	\$8,000	2	\$-	\$96,000	4	\$-	\$192,000
In-Shop Bike Maintenance	FTE	\$40,000	\$8,000	2.5	\$-	\$120,000	6	\$-	\$288,000
DIRECT COSTS									
Operations & Equipment									
Facility/Warehouse Set up / Rent	sf	\$21	N/A	3000	\$-	\$63,000	12000	\$-	\$252,000
Furnishings (post-launch)	% rent cost	5%	N/A	N/A	\$-	\$3,150	N/A	\$-	\$12,600
Utilities (pre-launch)	set	\$400	N/A	1	\$-	\$400	1	\$-	\$400
Utilities (post-launch)	% rent cost	25%	N/A	N/A	\$-	\$15,750	N/A	\$-	\$63,000

NEW ORLEANS BIKE SHARE FEASIBILITY STUDY AND BUSINESS PLAN | FINAL REPORT

				PHASE 1			PHASE 1+2		
Cost element	Type	Unit cost	Benefits	Units	Non-Profit/ Pre-Launch Cost	Pre-Launch + Ongoing Operating Cost (post-launch)	Units	Expansion Cost	Pre-Launch + Ongoing Operating Cost (post-launch)
Supplies and Equipment (pre-launch)	set	\$20,000	N/A	1	\$20,000	\$-	1	\$-	\$-
Supplies and Equipment (post-launch)	per hub	\$200	N/A	89	\$-	\$17,800	366	\$-	\$73,200
Redistribution Vehicles	vehicles (per mo)	\$18,000	N/A	2	\$-	\$36,000	3	\$-	\$54,000
Maintenance Vehicles	vehicles (per year)	\$12,000	N/A	1	\$-	\$12,000	3	\$-	\$36,000
Station relocation vehicle rental	# of relocations	\$750	N/A	20	\$-	\$15,000	50	\$-	\$37,500
Fuel	% vehicle cost	10%	N/A	N/A	\$-	\$6,300	N/A	\$-	\$12,750
Fuel (Pre-launch)	Fixed cost	\$600	N/A	1	\$600	\$-	1	\$-	\$-
IT & Communications									
Web Site Design and Programming	Fixed cost	\$20,000	N/A	1	\$20,000	\$-	1	\$-	\$-
System Software Setup	Fixed cost	\$50,000	N/A	1	\$50,000	\$-	1	\$-	\$-
Software License, Support, Upgrades	per mo/hub	\$100	N/A	1068	\$-	\$106,800	4392	\$-	\$439,200
Smart-bike wireless communications	per mo/bike	\$240	N/A	1245	\$-	\$298,800	3924	\$-	\$941,760
Employee Communications	employees	\$720	N/A	14.5	\$-	\$10,440	28	\$-	\$20,160
Customer service	per hub (annual)	\$2,250	N/A	89	\$-	\$200,250	366	\$-	\$823,500
Bike Share Launch and Upkeep Materials									
Site Planning and Permitting (per new hub location)	per hub	\$2,000	N/A	89	\$178,000	\$-	277	\$554,000	\$-
Community Outreach	Fixed cost	N/A	N/A	1	\$100,000	\$-	1	\$175,000	\$-
Marketing and Promotional Materials (pre-launch)	Fixed cost	\$60,000	N/A	1	\$60,000	\$-	1	\$60,000	\$-

NEW ORLEANS BIKE SHARE FEASIBILITY STUDY AND BUSINESS PLAN | FINAL REPORT

				PHASE 1			PHASE 1+2		
Cost element	Type	Unit cost	Benefits	Units	Non-Profit/ Pre-Launch Cost	Pre-Launch + Ongoing Operating Cost (post-launch)	Units	Expansion Cost	Pre-Launch + Ongoing Operating Cost (post-launch)
Marketing and Promotional Materials (post-launch)	Fixed cost	100,000	N/A	1	\$-	\$100,000	1	\$-	\$100,000
Staff uniforms	employee (annual)	\$200	N/A	14.5	\$-	\$2,900	28	\$-	\$5,600
Bike parts	per bike (annual)	\$20	N/A	1245	\$-	\$24,900	3924	\$-	\$78,480
Hub parts	per hub (annual)	\$300	N/A	89	\$-	\$26,700	366	\$-	\$109,800
Annual bike replacement	% bicycle cost	1.5%	N/A	1245	\$-	\$22,410	3924	\$-	\$70,632
Map Design	Fixed cost	\$20,000	N/A	1	\$-	\$20,000	1	\$-	\$20,000
Other Administrative Direct Costs									
Legal (pre-launch)	Fixed cost	\$12,000	N/A	1	\$12,000	\$-	N/A	\$-	\$-
Legal (post-launch)	Fixed cost	\$15,000	N/A	1	\$-	\$15,000	N/A	\$-	\$-
Travel (pre-launch)	Fixed cost	\$12,000	N/A	1	\$12,000	\$-	N/A	\$-	\$-
Travel (post-launch)	Fixed cost	\$12,000	N/A	1	\$-	\$12,000	N/A	\$-	\$-
Insurance (pre-launch)	Fixed cost	\$8,000	N/A	1	\$8,000	\$-	N/A	\$-	\$-
Insurance (post-launch; includes liability, equipment, auto, worker's comp)	Fixed cost	\$80,000	N/A	1	\$-	\$80,000	1	\$-	\$80,000
Total					\$556,600 (one-time)	\$1,910,400 (per year)		\$789,000 (one-time)	\$4,705,382 (per year)
Total (ROUNDED)					\$557,000 (one-time)	\$1,910,000 (per year)		\$789,000 (one-time)	\$4,705,000 (per year)
Cost per hub						\$21,461			\$12,855
Cost per bike						\$1,534			\$1,199



New Orleans Bike Share Feasibility Study

Appendix B: Bike Share Briefing Paper

May 2014
FINAL



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INTRODUCTION

Public transportation takes many forms – buses, streetcars, subways and, lately, public shared bicycles. City after city is (re)discovering that bicycles provide affordable transportation, reliable travel times, flexible routing and fun and exercise for traveling populations across race, income, age, and gender. Bicycle transit is a low-polluting, highly space-efficient travel mode that serves multiple city agendas from healthier communities to greener cities to congestion relief and economic competitiveness. In addition, people of all age groups, races, and income levels are choosing to live in dense urban centers. They bring new momentum and create lively, equitable, and economically vibrant environments that enable active lifestyles.

Nearly every large city in the United States, and several smaller ones as well, either has a bike share program in operation or has begun planning a program. Bike share, among transportation improvements and services, is a low cost, high impact investment. Bike share is a seemingly simple tool that supports broader urban reinvestment strategies, while providing another reliable transportation system for cities. By providing an inexpensive mobility choice, cities can help maintain the affordability of urban neighborhoods

The purpose of this document is to define bike share and its potential benefits for the City of New Orleans. The document includes descriptions of leading and emerging practices, many of which have been carried out in some of New Orleans' peer cities. From the experiences elsewhere, the City can determine if and why bike share is an appropriate choice for the Big Easy. In addition, this paper will document existing conditions and local policies and regulations that will directly or indirectly impact the feasibility or successful implementation of bike share in New Orleans. Finally, the briefing paper summarizes the structure and characteristics of applicable bike share organizational models. From these model options, three options will be evaluated, eventually resulting in a recommended organizational model for New Orleans. Much of the report's contents are framed based on the bike share program's goals, developed collaboratively by local and regional stakeholders in February 2014.



Bay Area Bike Share has seen early success, which has spurred earlier than anticipated expansion to areas throughout the San Francisco Bay Area.

Source: Bay Area Bike Share

Draft Bike Share Vision and Core Goals for New Orleans

Participants of the Feasibility Study's initial stakeholder engagement events voiced their aspirations and vision for a bike share system in New Orleans. Participants were asked why bike share was needed in New Orleans (or what problem it would solve). The following list summarizes these envisioned outcomes. A draft vision for the bike share program is presented below as well. This vision and its adjoining goals will be revised and tailored per the direction of the Regional Planning Commission, the City of New Orleans, and stakeholders.

Draft Vision Statement

Bike share will serve as an accessible and affordable transportation network that benefits residents and visitors across economic conditions and neighborhoods. This mobility tool will help New Orleans meet its equity, public health, workforce development, economic development, innovation, and congestion relief goals.

Draft Goals

The following goal statements derive from conversations with Idea Session and stakeholder interview participants.

Bike share in New Orleans will...

- Operate in a fiscally sustainable manner with no operating subsidy from the City of New Orleans.
- Provide more affordable and accessible transportation options.
- Lead as an international model for equitable bike share programs.
- Expand workforce mobility options.
- Connect residents and visitors to the places they want to go around the City.
- Employ local staff, especially from disadvantaged communities and at-risk youth programs.
- Promote health and wellness, helping New Orleans become one of the top ten fittest cities in America by 2018.
- Help achieve mobility objectives including VMT reduction, congestion relief, and reduced search-for-parking traffic and parking demand.
- Facilitate a change in street culture and safety resulting in respectful co-existence among people walking, bicycling or operating motor vehicles.
- Fully integrate into the public transportation system, including fare integration.
- Attract residents and visitors to all neighborhoods, spurring economic development and retail sales.
- Reinforce the City's objective to create a pedestrian and bicycle-friendly city.
- Introduce more residents to bicycle transportation and expand the number of daily bicycle users.
- Leverage public support and funding for increased and improved bicycle infrastructure.

BIKE SHARE AND ITS BENEFITS

Bike share is the most rapidly growing form of public transportation in the United States. Bike share systems deliver a flexible public transportation service that provides on-demand access to a network of public rentable bicycles. Urban bike share systems distribute bicycles across a service area at fixed, unmanned locations. Users can gain access to the system at payment kiosks or via phone or internet registrations, using either temporary (typically one, three, or seven day subscriptions via credit card payment) or annual subscriptions, which unlock bicycles. In addition, users can track bicycle availability and station capacity online or on smart phone apps, improving system reliability and trip planning capabilities.

Bike share is designed for relatively short trips, with most trips falling between one and three miles. The fee structure reinforces short trip making, as trips under 30 to 45 minutes are typically free after the subscription fee.¹

More than 30 cities in the US have bike share systems as of January 2014, and over one hundred more are in the planning or pre-implementation stages.



Boston Hubway docking stations provide affordable, convenient transportation options throughout the central city and neighboring Cambridge.
Source: Nelson\Nygaard

TYPES OF BIKE SHARE SYSTEMS

In the past decade, cities have tested out different types of bike share system models. The most popular bike share system model being employed throughout the world is station-based systems that utilize docking stations. Non-annual patrons provide a credit card at the unmanned kiosk and the bicycle is released. The patron rides the bicycle and must return the bicycle at another docking station throughout the system. Station-based bike share systems are ideally set up as a dense network of stations, where stations are spaced between 900-1,100 feet from each other (approximately every two to four blocks). The advantage of this system is it is iconic and legible (stations are clearly identifiable), bicycles are neatly organized (in docks) and stations are generally secure and static (bicycles may not be deposited anywhere but a station). Limitations of dock-based systems are that docking stations often fill up forcing the patron to find another, less convenient, station. Because bicycles must be deposited in a locking station, the bicycles themselves lack locks making them less accommodating of “trip chaining” – making short stopovers between Point A and Point B. Similarly, this system model can prove inconvenient when stations are not located near the users’ origins or destinations.

¹ For more information on fee structures visit Nice Ride MN’s website: https://www.niceridemn.org/how_it_works/

Considering docking stations cost \$10,000 or more and specialized bicycles are required to integrate with stations, one of the greatest drawbacks to the fixed station model for operators and sponsors is cost. Emerging models have removed the costly station infrastructure and proprietary bicycle requirements with Smart Bike programs, such as Social Bikes and Zagster. Users can locate and reserve a bike with either their computer or text enabled phone. They can then walk up to the bike and use a pin number to release the lock, ride to their destination and lock the bike at a hub location or at a regular bike rack. Hoboken, NJ, has just completed a six month Smart Bike system pilot project and aims to launch a larger program in the coming years. In addition to lower costs, the program offers greater convenience for users by readily accommodating trip chaining and errand-runs. Smart Bike systems have the advantage of being able to utilize existing city-approved standard bicycle racks thereby alleviating further design approvals or potential conflicts in historic districts. The benefits of flexibility in a Smart Bike system can also prove a liability as bicycles can be unintentionally occupied for much longer periods as patrons make multiple trips on the same cycle (incurring additional cost) and bicycles locked to balconies and light posts may create more visual clutter in the street environment.

Figure 1 highlights some key differences and operational tradeoffs that must be considered when evaluating these two system types. Hybrid systems – those incorporating elements of both the dock-based and Smart Bike programs – are feasible although none have yet been implemented.

Figure 1 Bike Share System Types

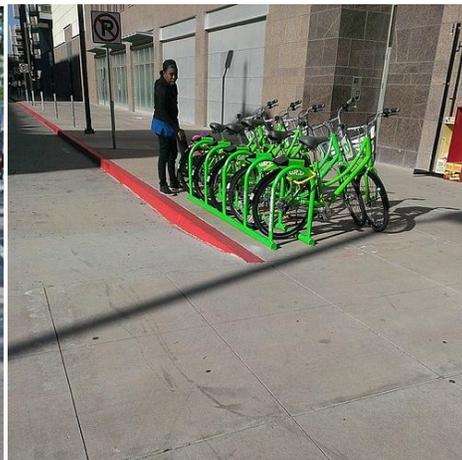
Characteristics/Tradeoffs	Station-based systems	Smart Bike, hub-based systems
Example	<ul style="list-style-type: none"> ▪ Capital Bikeshare ▪ Denver B-Cycle ▪ Boston Hubway 	<ul style="list-style-type: none"> ▪ Buffalo Bike Share ▪ Detroit Zagster ▪ Grid Bike Share (Tampa Bay)
Characteristics	<ul style="list-style-type: none"> ▪ Solar-powered modular docks with at payment kiosks and advertising panels ▪ Heavier, visually iconic bicycles ▪ Key-fob or microchip card access 	<ul style="list-style-type: none"> ▪ Utilizes public bike racks (capitalization often include package of new racks) ▪ Lighter utilitarian bicycles ▪ Accessed by code texted to user or by smart phone app
Benefits	<ul style="list-style-type: none"> ▪ Uniqueness of bicycles reduces value for theft or parts ▪ Docks are clearly identifiable for wayfinding and access/use ▪ Relatively predictable rebalancing operation 	<ul style="list-style-type: none"> ▪ Significantly lower capital cost ▪ Text-based system ▪ Usage fee is based on time or trip end ▪ Highly adaptable hard and software ▪ Potential for multiple operators (similar to a taxi regulated system)
Deficiencies	<ul style="list-style-type: none"> ▪ Docks and bikes are more expensive than Smart Bike ▪ Generally proprietary software ▪ Single operator model limits expansion opportunities 	<ul style="list-style-type: none"> ▪ Bicycles can be at risk of loss ▪ Less iconic/identifiable than dock-based systems ▪ Reduced reliability if not located near hubs, particularly for those without smart phones or web access ▪ Unpredictable inefficient/ rebalancing (must utilize user incentives) ▪ Greater reliance on internet and smartphones could present a barrier to use

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Station-based bike share systems like Capital Bikeshare in Washington DC and other adjacent communities utilizes docking and kiosk payment systems that require a credit card for securitization.

Source: Nelson\Nygaard



HERE IS
HOW IT WORKS



1

RESERVE
 BOOK A BIKE

Find and reserve a bike using our mobile app, on the web at app.socialbicycles.com, or at the bike using its keypad.



2

RELEASE
 UNLOCK A BIKE

Once you've reserved a ride, just enter your 4-digit PIN code on the keypad to unlock the bike. Remember to ride safely and follow [these rules](#).



3

RIDE
 ENJOY YOUR TIME!

Want to stop for coffee? Press the "HOLD" button and lock the bike to a rack. Just enter your 4-digit PIN to unlock and continue riding.



4

RETURN
 IT'S EASY!

To end your trip, just lock your bike to one of our convenient hub locations or at any regular bike rack for a small additional fee.

Emerging bike share programs, like Social Bikes Hoboken (top left), operate without docking stations. Emerging Smart Bike systems are established without payment kiosks but aggregate docking locations into hubs (top right). Procuring a Smart Bike requires a four step process. First users reserve a bicycle online, then they type in a pin to release the U-lock on the bicycle. After they ride, they return the bike to either a hub location or lock the bicycle to a regular rack.

Source: City of Hoboken (top left), Grid Bike Share (top right), Social Bicycles (bottom)

BENEFITS OF BIKE SHARE

Bike share is transforming urban mobility, while demonstrating the ability to improve local economic activity and access to jobs, quality of life, public health and environmental conditions. Furthermore, bike share systems have proven popular among residents, visitors, and businesses seeking walkable, vibrant urban neighborhoods. No other form of public transportation is able to unlock such wide ranging benefits for such a modest level of capital and operating investment. From the long list of benefits, successful programs prioritize goals and design a system that best meets those goals. A system aimed to cater to tourists may have a different spatial layout than a system focused on equity; similarly, a system with the intention of helping more people commute by bicycle would differ from a system focused on recreation.

This section outlines the major goals of bike share programs and will help New Orleans set its goal if the City decides to pursue a bike share program.

Equity

Many transit-dependent residents cannot, unfortunately, comfortably depend on transit. In many lower income, job-poor neighborhoods transit service is of lower frequency (30 to 60 minute headways), shorter span (reducing or suspending service after 8pm), indirect (requiring a transfer to the final destination) and/or unreliable (experiencing congestion delays that may delay arrival times). Entry-level or hourly workers can scarcely risk being late to work for fear of penalty or firing. Nor can they afford excessive unproductive (e.g. non-wage earning) time in transit while they must pay for childcare, leave children unattended, or miss the opportunity for additional time on their second or third job.



Capital Bikeshare prioritized system expansion in areas that served traditionally disadvantaged populations. Today, the system serves all neighborhoods in the District and is working to bring more stations to areas with the greatest need.

Source: Capital Bikeshare

Bicycle travel provides highly reliable travel times, virtually no limitation on “frequency” or “span” of service (as it is on-demand), and extremely low costs. According to American Community Survey five-year estimates, nearly 9% of employed residents in New Orleans do not have a vehicle available. In some areas, the rate of zero-car households is much higher. Along the Claiborne Corridor, an estimated 40% of residents do not have access to a vehicle, compared with 19% of households citywide.² Bike share may add convenience to many of these residents by providing reliable service to bus stops and other destinations.

For these reasons and more, many bike share programs have begun looking at the needs of lower income, job- and amenity-poor and/or lesser served neighborhoods when determining new

² American Community Survey 5-Year Estimates, 2008-2012

station locations. A study from London's Barclays Cycle Hire program found that stations in low income areas frequently outperformed those in higher income areas.³ Nice Ride Minnesota in the Twin Cities has sited stations in low income communities, particularly communities underserved by transit or places with higher rates of obesity, diabetes, or transit use. These stations are not located in areas with characteristics historically predictive of high bike share ridership, but they will help the program achieve its goal to improve transportation access across all incomes. Stations placed in low income areas of New Orleans could help deliver greater access to jobs, education centers, healthcare, groceries, libraries, and parks that certain areas of the city currently lack.

Bike share also may benefit members of the community who are unbanked, which means they have no checking or savings account. According to a study authorized by the U.S. Department of Treasury, 12.5% of Orleans Parish households are considered unbanked. This compares to 5.1% in the metropolitan area, 8.7% in the state, and 7.7% in the nation. This 12.5% represents 14,241 unbanked households. Another 25.5% or 29,053 of Orleans Parish households are considered underbanked. Underbanked is when a person has an account but continues to rely on alternative financial services, like check cashing services, payday loans, rent-to-own agreements, or pawn shops. Once again, the Orleans Parish percentage of 25.5% is higher than the metropolitan percentage of 18.1%, Louisiana's 22.9% and the nation's 17.9%.⁴

Transportation Efficiency

Bike share expands mobility, raises bicycling and transit ridership rates, and reduces automobile use. In some systems, up to 50% of users expressed that they make more trips by bicycle.⁵ Approximately 25-45% of bike share trips replace a vehicle trip.⁶ Bike share also helps improve transit efficiency and reduce urban core crowding on transit. In Washington, DC, 25% of Capital Bikeshare users switched from a short transit trip. Although converting some transit trips to bicycle trips, bike share does not negatively compete with transit. Instead it provides added overall system flexibility and travel choice that enables transit to confidently convert additional auto trips. In neighborhoods underserved by transportation options or offered with inefficient transit routing (e.g., loop routes), bike share can expand mobility and access options, improve connections to transit, reduce transit wait times, and even eliminate the need to transfer between routes or transit services. In New Orleans, this could help serve some of the most crowded bus routes, such as routes serving certain areas of the CBD, New Orleans East and Algiers.

More information related to meeting the equity challenge in underserved transit communities is listed in the case studies starting on page B-36.

³ Ogilvie, F. & Goodman, A. 2012. Inequalities in usage of a public bicycle sharing scheme. *Preventive Medicine* 55(1): 40-45.

⁴ City of New Orleans Office of Community Development <http://www.nola.gov/community-development/documents/general-reports/2012-2016-consolidated-plan-city-of-new-orleans-w/>

⁵ Velib' Website, "Now We Know You Better;" (http://www.velib.paris.fr/les_newsletters/10_aujourd_hui_nous_vous_connaissons_mieux).

⁶ Based on 2012 Denver B-Cycle and Capital Bikeshare data.

Last Mile Connectivity

Bike share systems in other cities have seamlessly provided transit connections, implementing bicycle docking stations at major transit centers like rail stations or bus transfer hubs. The New Orleans Regional Transit Authority (RTA) and the Jefferson Parish Department of Transportation (JeT) serve more than 400,000 residents, roughly a third of the population of the New Orleans–Metairie–Kenner Metropolitan Statistical Area. By locating bicycle docking stations at transit centers, New Orleans bike share could enable easier access to transit, particularly to residents living more than a half mile from a transit stop. This will provide added mobility that current transit cannot provide at a fraction of the cost. Moreover, in areas with limited nighttime or weekend service, bike share could help some transit patrons access their stops more efficiently.



Bike share stations in Minneapolis are located near transit stops to help transit riders reach the last mile of their destination.
Source: Nelson\Nygaard

Bike share works as a supplement to the transit system, enabling transit riders to get to the optimal transit lines for their trip. This minimizes their transfers between lines and makes transit a more convenient choice for a larger group of people.

Healthier Cities

Many people in New Orleans are afflicted with preventable diseases related to inactivity and sedentary lifestyles. Roughly 12% of New Orleans' population has diabetes, and 32% are clinically obese based on Body Mass Index (BMI).⁷ Bike share not only provides an additional option for meeting a necessary household trip but concurrently provides an opportunity for physical activity – an imperative to mitigate the upward trends of these diseases. For instance, a 15-minute bike connection made just four times per week would burn about 500 calories a week and 26,000 calories per year. In the first 6 years of Paris' Velib system, users burned a combined 19 billion calories. This upward trend in active transportation and increased physical activity is likely to be replicated in New Orleans, as other systems have reported up to 66% of surveyed users stating increased bicycling *outside of bike share use* since subscribing. Just as important, the endorphins released while engaging in active transportation increase personal happiness, blood circulation, energy, memory, and overall job performance necessary for employment success and advancement.

⁷ New Orleans Health Department (2010). *Healthy Lifestyles in New Orleans*. <http://www.nola.gov/nola/media/Health-Department/Publications/Healthy-Lifestyles-in-New-Orleans-Community-Health-Data-Profile-final.pdf>

In addition to the benefits of physical activity, bike share can also help residents lead healthier lifestyles by giving greater access to grocery stores. (According to a recent study, thirteen percent of New Orleanians live in a Census Tract without a full-service grocery store.⁸)

Healthcare organizations in cities across the country have seen the positive impact bike share has on the health of their communities. Frequently, these organizations, which include public health agencies, hospitals, and private foundations, provide grants to promote the use of the system, particularly in areas with health disparities.



The benefits of bike share grows with increased ridership. More people using the bikes means reduced VMT and vehicle emissions.

Source: Richard Masoner

Cleaner and More Sustainable Cities

Bike share contributes to broader environmental goals by providing alternatives to the motor vehicle. This results in reductions of vehicle miles traveled (VMT), greenhouse gas emissions, air pollution, and dependence on petroleum. In 2012, Capital Bikeshare trips in the Washington DC region resulted in 1.2 million pounds of carbon emissions avoided and reduced 4.4 million VMT. Paris' Velib system has saved 274 million pounds of carbon emission since beginning operations in 2007. As ridership grows, bike share programs can result in noteworthy reductions in a city's emissions.

⁸ New Orleans Health Department (2010). *Healthy Lifestyles in New Orleans*. <http://www.nola.gov/nola/media/Health-Department/Publications/Healthy-Lifestyles-in-New-Orleans-Community-Health-Data-Profile-final.pdf>

Competitive Cities

Cities are actively participating in a global marketplace of people choosing to live where they want, employers choosing where to locate, and consumers choosing where to make their next vacation and spend their disposable income. In order to attract employers, a talented workforce, and visitors, cities must offer amenities that make a place livable and easy to navigate.

Of the U.S.'s top ten vacation destinations, New Orleans is only one of two major tourist markets without a bike share system on the ground or in implementation phase.⁹ Nearly every city with a convention center either has a system, has it funded or has selected a vendor. This is not the case in New Orleans. Creating a bikeable city is increasingly attractive to people looking for places to live and tourists seeking urban destinations that do not require the use of a motor vehicle. Cities like Atlanta, Nashville, Memphis, and Raleigh are investing in bicycle infrastructure and programs as a tool to entice a workforce that is increasingly attracted to vibrant, diverse urban places.¹⁰

Economically Productive Cities

The retail spending behavior of bicyclists is well documented. In Portland, shoppers arriving by bicycle spend 20% more each month than those arriving by car (spending less per trip but making more trips). Bike share has been linked to increased retail activity and contributes to more lively and active mixed use and retail districts. In the Twin Cities, bike share users spend a net extra \$150,000 at businesses adjacent to bike share stations. These are purchases that would not have been made without bike share. A study of Capital Bikeshare in Washington, D.C. found that 70% of the 140 businesses surveyed stated that bike share has had a positive impact on the neighborhood, and 10% of respondents perceived an increase in customers due to bike share. The study also received more than 300 respondents from bike share users, two thirds of whom reported using bike share to reach a destination associated with consumer spending.¹¹ This figure would be compounded in New Orleans by the number of annual visitors who frequent the urban core.

Job Creation

The experience of cities of similar size to New Orleans has shown that bike share can create 10-15 new full time jobs and 5-20 part-time positions. Job creation, however, is related to the size of the system and the organizational model used. As the system expands to other neighborhoods or communities and ridership grows, employment increases. Bike share programs have an opportunity to partner with local workforce development organizations to hire from underprivileged populations for rebalancing the system, repairing the bicycles, or participating in marketing efforts.

⁹ Trip Advisor. Top 25 Destinations in the U.S. <http://www.tripadvisor.com/TravelersChoice-Destinations-cTop-g191>

¹⁰ Angie Schmitt (2013). "Chicago, Seattle Mayors Spar Over Bike Lanes, Tech Workers", Streetsblog: <http://dc.streetsblog.org/2013/02/21/chicago-seattle-mayors-spar-over-bike-lanes-tech-workers/>

¹¹ Anderson, Ryan, et al. (2013). Economic Impact & Operational Efficiency for Bikeshare Systems. <http://ralphbu.files.wordpress.com/2014/01/virginia-tech-capital-bikeshare-studio-report-2013-final.pdf>

Challenges

Frequently the expectations for bike share programs are set high as a result of the well-publicized success of larger programs. Although bike share is becoming a common form of transportation for many cities, it's still relatively new, which brings challenges that other modes of transportation do not have.

Safety: Despite the outstanding safety record of bike share programs, a frequent concern community members have is safety. A lack of on-street bike infrastructure alarms many community members, and low helmet rates among bike share users exacerbate these concerns.

Advertising: Another concern relates to advertising. In cities with strict advertising and sign codes, such as New Orleans, Honolulu, and Savannah, these concerns are heightened. Considering advertising revenue is a major source of revenue for the programs, programs must work through the existing code to raise revenue (see Supplement 1 for more information).

Historic Districts: If New Orleans implements a bike share program, a major challenge will be working within the existing codes related to development in historic districts (see Supplement 1 for more information). New Orleans has unique historic districts, but other cities have faced similar challenges in overcoming the codes. In New York City, for instance, "landmark districts" prohibit billboards and other large advertising. Stations were eventually permitted in these areas after working with neighborhood associations and historic preservation commissions. These stations, however, do not have large advertisements found at other stations.

Parking: Parking challenges also frequently develop when implementing stations. When the sidewalks are too narrow to site a station, docking stations may replace a parking space. This can result in objections from nearby businesses or residents.

Equity: As with all transportation investments, equity has become increasingly important. To many, bicycling is perceived as transportation mode for upper-class whites. Ensuring that all community members have access to the system will work to breakdown this misconception.

Vandalism: Even the largest bike share programs go more than a year without any reports of vandalism, but vandalism continues to be a concern among communities.

Evolution of bike share: Although modern bike share systems have grown rapidly, they are still a relatively new component to urban environments. In the past decade, the programs have continued to evolve to meet the travel needs of users and overcome the fiscal challenges many cities face with improving mobility. New operating concepts continue to come out, but being the first adopter of these untested models can be problematic and require more patience among users.

IMPLEMENTING A SUCCESSFUL BIKE SHARE SYSTEM

Some of the most important metrics of system success are qualitative rather than quantitative. While number of users is important, equally important are the urban objectives bike share supports. Urban revitalization, cultural shifts in how people move, and fostering a more bicycle-accepting culture are often overlooked components of bike share.

Yet, some neighborhoods yield higher ridership counts than others. Cities furnished with common elements of livable, bikeable communities are typically able to support a dense network of productive bike share stations. Nice Ride Minnesota characterizes these communities as *Bike Places*, which exhibit:

A **demographic shift** reflecting the national trend toward changing housing (urban rather than suburban), technology (reliance on smart phones), and travel (diminishing reliance on automobiles) preferences

Dense residential and employment centers able to support 18-hour activity

A continuous network of **dense, mixed-use neighborhoods** housing a variety of local and regional destinations

A diversity of **transportation options**

A wealth of **urban amenities** including public spaces and human-scale main streets with restaurants, bars, and other retail options

Comfortable and extensive **bicycle infrastructure**

Community programming, events, and cultural attractions

Visitor amenities including hotels and destinations

Parking pricing levels that might encourage non-auto travel

Productive transit system and a strong transit culture

General **cultural awareness** of bicycling

The collective conditions listed above make up a Bike Place and serve as the critical threshold of a community able to support a public bike share system.

Operational considerations bring different measures of success. Programs planned to limit the amount of rebalancing necessary lead to reduced emissions produced by the program. Additionally, many programs consider well maintained bicycle fleets and successful service calls when evaluating the success of the program.

ENVIRONMENTAL SCAN

An early step in determining the feasibility of bike share in New Orleans is to establish a baseline read of existing conditions relating to demographics, transportation, and land use. This environmental scan will provide a profile of demographics and tourism, assess the built environment and existing transportation network, and document key initiatives that support bike share. These findings will be used to inform the demand analysis and ridership forecast.

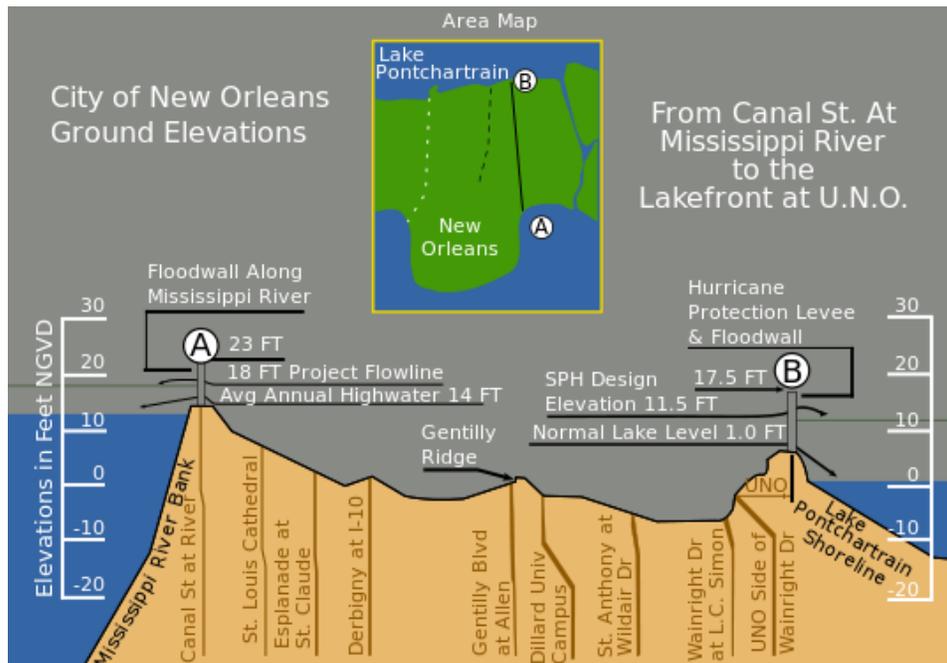
GEOGRAPHY, DEMOGRAPHICS, AND TOURISM PROFILE

This section provides an overview of factors related to bike share use propensity, including topography, climate, population and employment density, transit propensity, and tourism.

Topography and Climate

New Orleans is a flat city relative to many other places that have implemented or have planned bike share programs (e.g., San Francisco, Seattle, Pittsburgh). Yet, the city does have some minor elevation gains, most notably between Dillard University and the Mississippi River. This elevation gain totals less than 20 feet and will not likely be a prohibitive factor for most users. Most elevation change results from structures like bridges and overpasses.

The humid subtropical climate may become a major barrier to use. For six months a year, the average high in New Orleans exceeds 80°F and rises to 90°F or higher for June, July, and August. These months are also the rainiest, experiencing as much as eight inches of rain per month. These climatic characteristics may prevent many users from riding during the summer, but the mild winters make New Orleans a year-round biking city. November through April is dry relative to the summer, and the lower temperatures make for more pleasant biking conditions on most days.



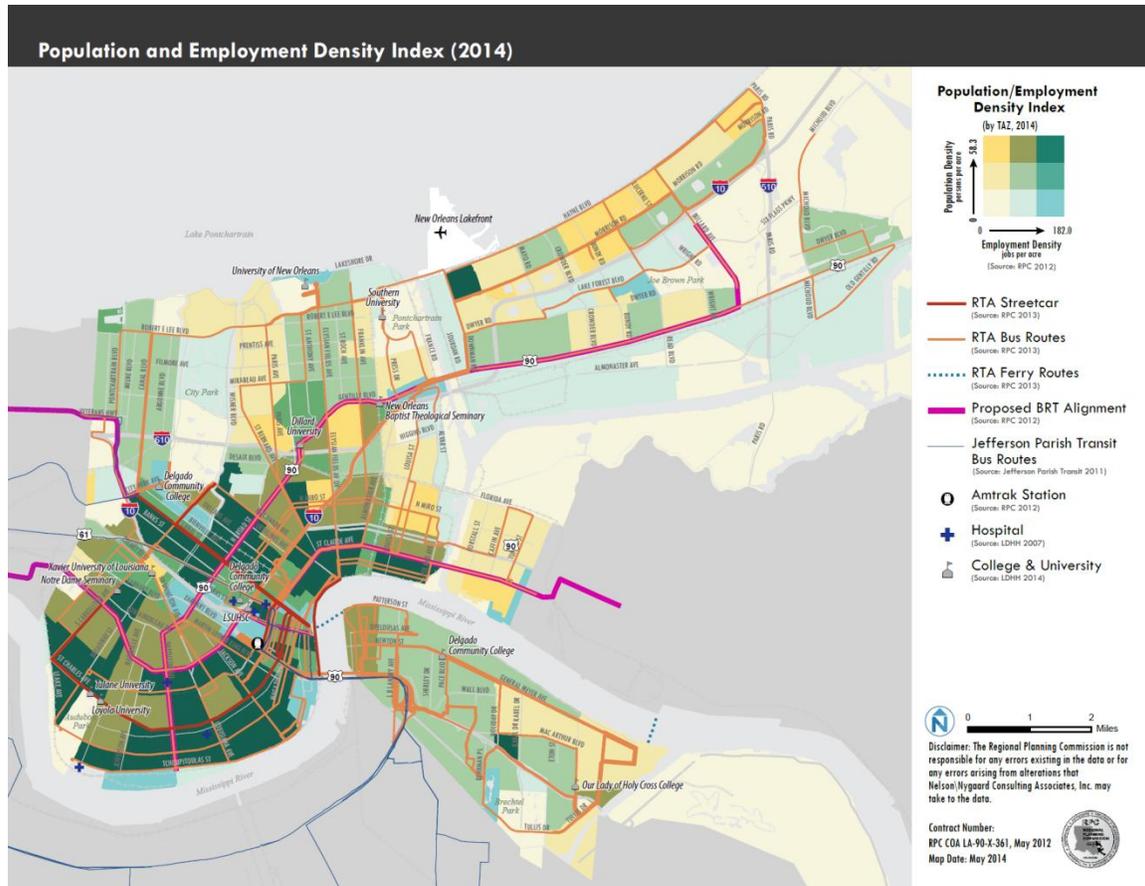
Relative to other cities with bike share programs, New Orleans is relatively flat.

Source: Wikipedia author Midnightcomm

Population and Employment Density

Population and employment densities are clustered in neighborhoods along the Mississippi River and Mid-City. Areas closer to Lake Pontchartrain and on the Westbank show lower population and employment densities. Historically, bike share stations surrounded by denser population and employment densities tend to have higher patronage than stations in areas with lower densities. The map below uses 2010 Census data and Longitudinal Employer-Household Dynamics (LEHD) data to map population and employment densities in New Orleans. Using this map as an indicator of neighborhood performance alone would predict that the French Quarter, Central Business District (CBD), Uptown, Mid-City, and adjacent neighborhoods have the greatest concentration of demand generators and therefore likely to support the highest rate of bike share usage. Parts of Gentilly, Algiers, and New Orleans East show moderate population and employment densities, but these areas would likely have lower ridership rates than the denser areas to the south.

Figure 2 Population and Employment Density Index (2014)



Population and employment densities are highest in the CBD, Mid-City and Uptown/Carrollton areas. Areas with higher density are more likely to host successful bike share stations.

Source: Nelson\Nygaard

Transportation Mode Split and Ridership

The City of New Orleans, which has twice the bicycle mode share (people using the bicycle as their primary commute vehicle) of any other major city in the South, has contributed to the growth in bicycling nationwide. New Orleans has seen its bicycle mode share more than double since 2005, rising from 1.0% of commute trips to 2.4% of commute trips in 2012.

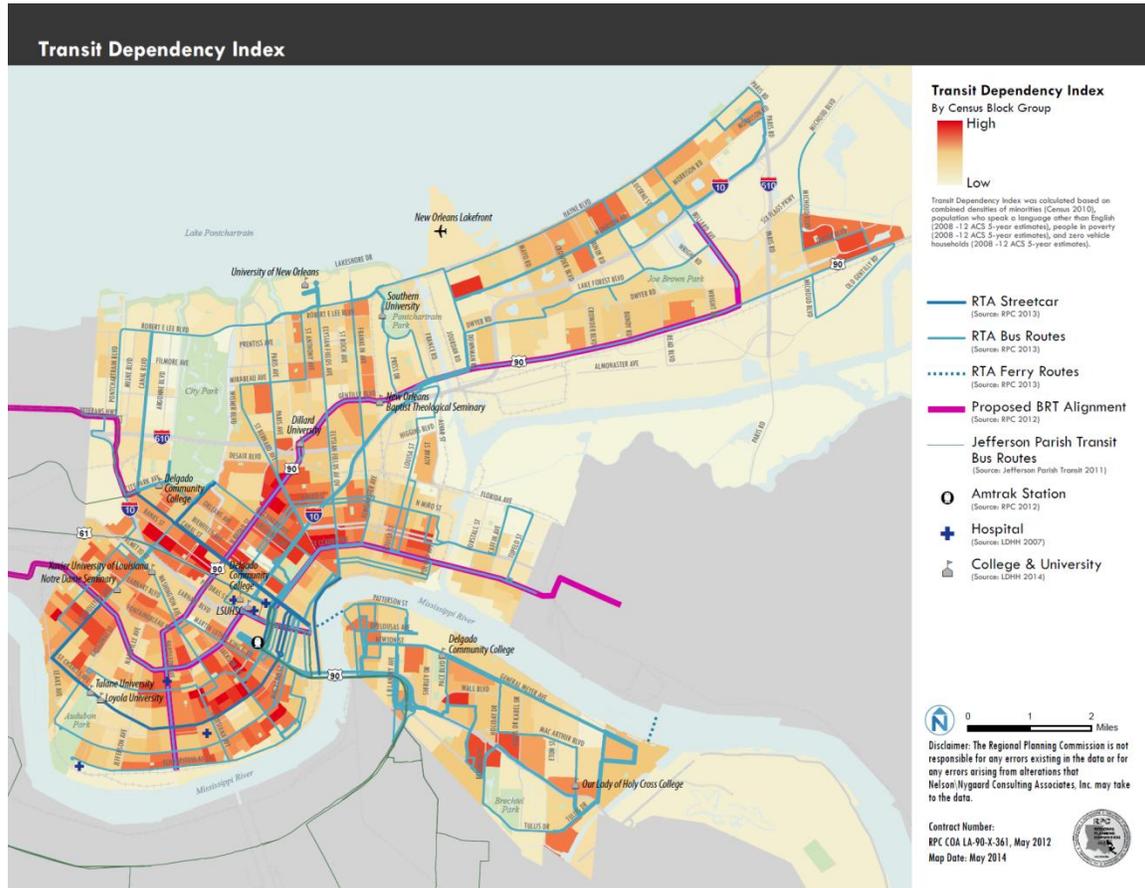
According to American Community Survey estimates, transit mode share has declined from 12.2% in 2005 to 6.6% in 2012, at least partially a result of damage caused by Hurricane Katrina. Transit has regained momentum with new investments, however. Ridership has risen each of the past four years, and the Regional Transit Authority (RTA) and Jefferson Transit (JeT) vehicles carry about 47,000 riders and 6,800 riders on weekdays, respectively. Bike share may complement this growth in ridership by helping resolve the “last mile” issue for areas with poor connectivity or limited hours of operation.

Transit Dependency

Population and employment density, however, are not the only factor to consider when determining the geographic scope of bike share stations or the propensity for transit use. Certain areas of New Orleans show a greater need for new transportation options. These areas may benefit the most from bike share stations, even if their population and employment densities are lower than Downtown New Orleans.

The Transit Dependency Index is based on a number of factors that have historically shown higher transit rates including census data of density of minorities, populations who speak a language other than English, people in poverty, and zero vehicle households. The results show Census Block Groups throughout the city with a demonstrated need for more transportation options (Figure 3). Most of these areas are clustered in areas with higher population and employment densities, but many areas of New Orleans East and Algiers also have a high transit propensity equivalent to that of the CBD. Although many of these areas have access to existing transit lines, many of these lines have limited night or weekend service. Bike share stations in these locations may help residents access their jobs, groceries, and other needs more efficiently in off-peak hours.

Figure 3 Transit Dependency Index



Areas demonstrating the greatest need for transit include Treme, the Seventh Ward, and Central City. The Transit Propensity Index was calculated based on a number of factors that have historically indicated higher transit rates.

Source: Nelson\Nygaard

Tourism Profile

Residents and workers are not the only users of bike share systems. Visitors also enjoy the convenience and cost effectiveness of bike share systems. This user group is more likely to purchase short-term passes, which boost the ridership numbers and increase the financial viability of the system.

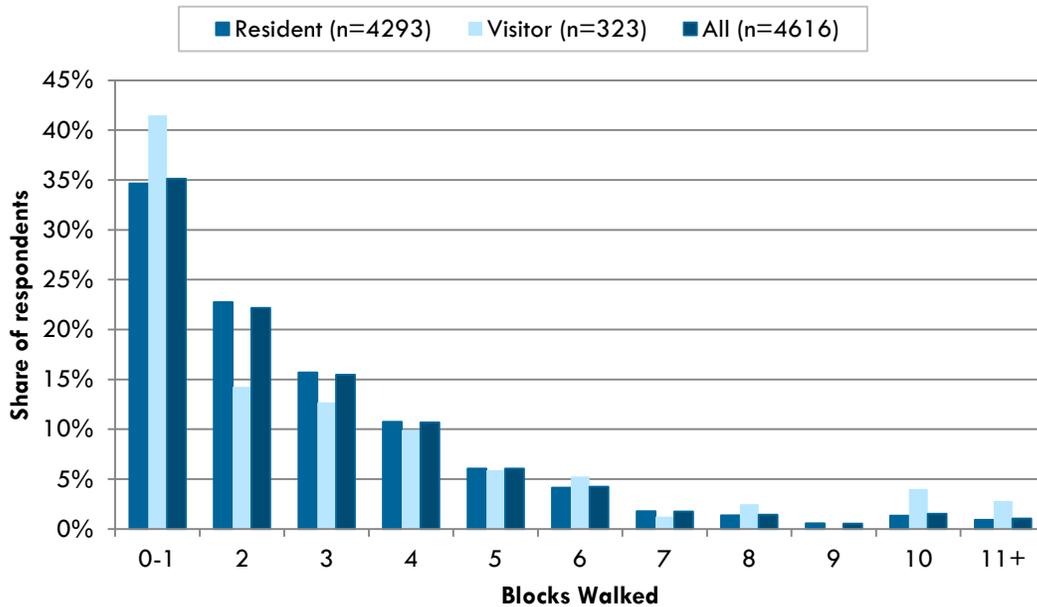
As one of the most popular tourist destinations in the country, New Orleans has a large visitor base to draw from. According to the 2012 Convention & Visitors Bureau annual report, over nine million visitors traveled to New Orleans for vacation/pleasure or business/convention purposes. Visitors spent over \$6 billion and frequented the bars, cafes, casinos, and museums located throughout the city, and the majority of visitors spend time in the French Quarter and/or Garden District. The climate, topography and gridded, narrow street network of the city lend themselves well to biking by more inexperienced or unfamiliar users. In other cities, patrons of the businesses enjoy the unhurried convenience of using a bicycle to ride between destinations, and bike share could make these leisurely trips on bicycles possible.

The demographics of New Orleans’ visitors provide further evidence that bike share has demand among tourists. Less than half (48%) arrive in a personal vehicle, and a fourth of the visitors are between the ages of 18 and 34. This age group represents the highest age group for bike share users. The second highest user demographic, people between 35 and 50, are also frequent visitors to New Orleans. In total more than half of visitors are under the age of 50.¹²

Visitors currently spend an average of \$10 per day and \$38 per trip on local transportation. Although use of the streetcars and ferries is frequently listed among the most positive experiences of surveyed visitors, public transportation is also among the most frequently cited negative experiences. Comments have referred to the public transportation system as ineffective, expensive, and inconvenient (i.e. limited hours of operation, indirect routes, and long wait times). Providing bike share as an alternative can help boost the experience of visitors by providing a convenient and more affordable way to travel among the city’s multitude of destinations. Most visitors, however, are unwilling to spend more than \$10 per day on transportation, so keeping the daily price of bike share below this amount may be critical to attracting visitors (New Orleans Area Visitor Profile: Annual Report, 2012).

As shown in Figure 4, riders of RTA rarely walk more than five blocks to a stop. Visitors are less likely to walk more than a block to a transit stop relative to residents. Although these results may suggest that RTA provides convenient service for visitors and residents, this graph may also suggest how far people are willing to walk to ride transit. Coordinating with bike share stations may expand the number of people willing to ride transit by decreasing the time an individual will need to reach a stop.

Figure 4 **Blocks RTA Riders Walked to Transit Stop**



Source: 2012 RPC Comprehensive Operational Analysis On-Board Survey

Special events, such as Mardi Gras, Jazz Fest, and Essence Festival, are opportunities to boost visitor experience and ridership numbers. These festivals bring several challenges from the

¹² New Orleans Area Visitor Profile: Annual Report, 2012.

visitor's perspective. Difficulty finding a taxi, disrupted street connectivity, and more expensive parking can make the experience of arriving at the events frustrating. Bike share offers an affordable transportation option that allows the user to arrive at destinations without many of these frustrations.

Overall, tapping into the large visitor and tourist population provides an opportunity to bolster the financial viability of a bike share system beyond what residents and workers alone could support. Capturing visitor spending on transportation could enable a transfer of benefit to support the extension of the system to second or even third tier neighborhoods that would be unable to justify a bike station on local demand alone. Visitor revenue capture is a key reason why Washington, D.C.'s Capital Bikeshare is operating in the black.

BUILT ENVIRONMENT

The purpose of this section is to consider the built environment of New Orleans. The land uses and right-of-way conditions will play an important role in determining bike share ridership. This section considers these factors in light of how compatible a bike share system would be if implemented with the existing conditions.

Land Use

Bike share performs best in compact settings offering a mix of commercial and residential uses. Major destinations – for example entertainment districts, sporting arenas, institutions, and parks - also generate or attract bike share demand. In addition to creating a pleasant area to explore on two wheels, historic districts often have narrower streets and low volume streets ideal for safe bike conditions. This section highlights areas of New Orleans with these characteristics.



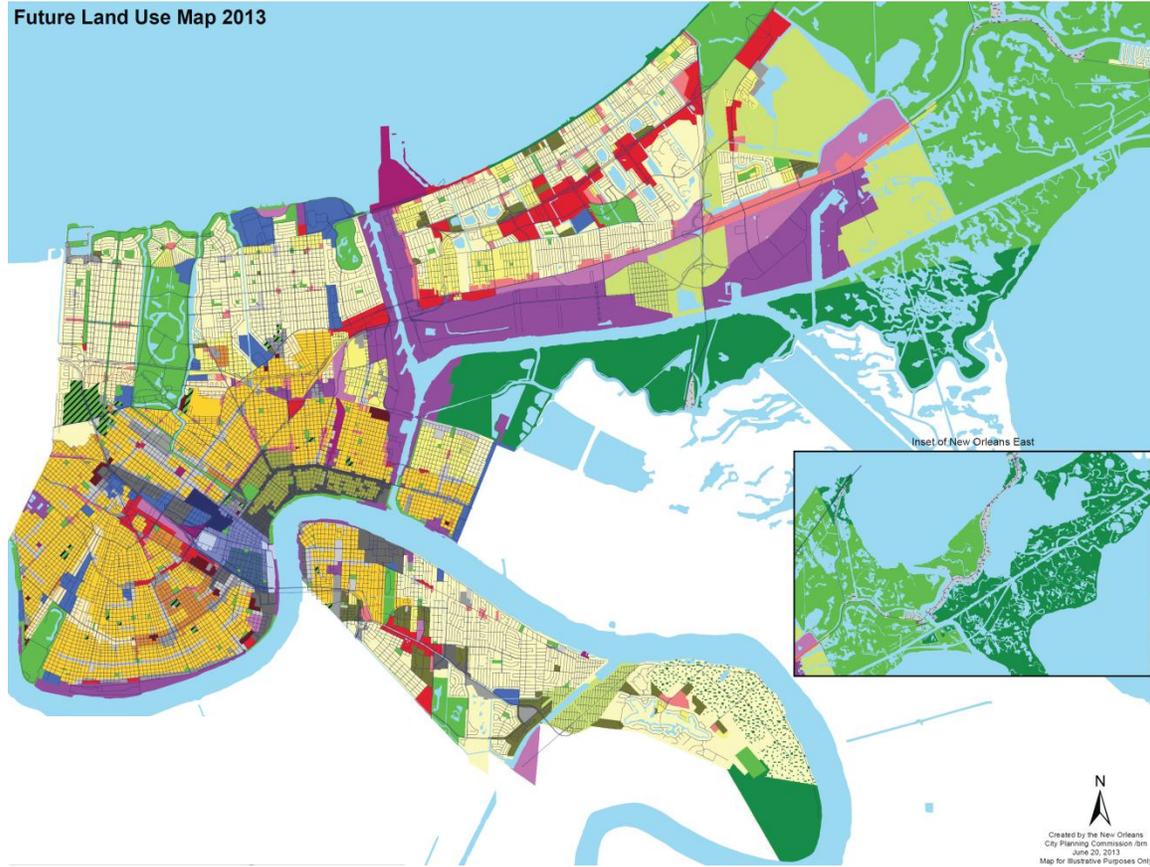
Mixed-Use Centers

New Orleans' mixed-use centers are located in and near the CBD, Mid-City, the French Quarter, Bywater, and Marigny, but general commercial districts can be found throughout the city. Areas with major commercial centers located near residential land uses include Algiers, St. Roch, Gentilly Woods, and New Orleans East. Although bike share typically performs best in mixed-use areas, commercial centers near residential areas can operate as hubs where residents of the surrounding neighborhoods can bike to transit stops and other amenities.

Mixed use environments make for ideal locations for bike share stations because the areas include both a high number of residents and frequently visited destinations.

Source: Nelson\Nygaard

Figure 5 Future Land Use Map



Legend

	Residential Semi-Rural		General Commercial		Business Center
	Residential Single-Family Post-war		Downtown Exposition		Industrial
	Residential Low Density Post-war		Downtown Mixed-Use		Institutional
	Residential Multi-Family Post-war		Downtown Core Neighborhood Mixed-Use		Parkland and Open Space
	Residential Historic Core		Mixed-Use Low Density		Cemetery
	Residential Single-Family Pre-war		Mixed-Use Medium Density		Natural Area
	Residential Low Density Pre-war		Mixed-Use High Density		Transportation
	Residential Medium Density Pre-war		Mixed-Use Historic Core		Planned Development Area
	Residential Multi-Family Pre-war		Mixed-Use Health/Life Sciences		
	Neighborhood Commercial		Mixed-Use Maritime		

The CBD, French Quarter, Marigny, and Bywater feature mixed use districts. Areas of Algiers, Mid-City, and New Orleans East have major commercial centers located near residential zones.

Source: City of New Orleans, New Orleans 2030 Plan, 2010

Destinations

Sporting arenas, entertainment districts, and museums are clustered in the CBD-French Quarter area and many of the commercial and mixed-use centers mentioned above. City Park, Audubon Park, Treme, Pontchartrain Park, Crescent Park, Loyola University, and Tulane University are destinations outside the CBD that residents and visitors frequent. Although the CBD and French Quarter have hundreds of destinations, the distances between the destinations are often too great to walk for most people. For example, the French Quarter stretches for nearly a mile between Esplanade Avenue and Canal Street. Many of the hotels and parking catering to visitors of the French Quarter fall outside this boundary, which can make for a long walk. This type of trip is ideal for bike share users, and opting for bike share could turn a 25 minute walk into a ten minute bike ride.



Many of New Orleans' key destinations are located near the CBD, but placing stations outside Downtown New Orleans will help visitors and residents reach parks and universities.

Source: Nelson\Nygaard

The numerous destinations in the CBD and French Quarter neighborhoods make them ideal places for a dense network of bike share stations. Outside the CBD, the destinations are farther apart but still numerous. Expanding the network to include City Park and Audubon Park could reduce vehicle trips to these parks and help visitors explore the historic districts throughout the city.

A challenge for many destination cities is how to entice and enable visitors and downtown workers to travel beyond the central districts such as the French Quarter and CBD to experience and patronize the larger city, spreading their spending power to other neighborhoods and local enterprises. Bike share effectively shrinks perceived distance by shrinking actual travel time thus bringing destinations closer together and expanding the convenient range of access for downtown patrons and workers and providing broader access from the larger city to jobs in the downtown.

Historic Districts

New Orleans' historic districts are some of the most appealing places to ride a bicycle. Their narrow, low-speed, low-traffic streets provide a pleasant contrast to wide high-volume streets, and the rich architectural heritage encourages visitors and residents to explore these areas at slower speeds than a motor vehicle.

The historic districts of New Orleans are abundant and provide great connections between the CBD and outlying destinations such as Audubon Park and City Park. Assuming a clearly marked bicycle route, a visitor or resident could ride between the CBD and Audubon Park in 30 minutes. This trip is generally too far to comfortably

walk and thus favoring use of a motor vehicle. Stations placed along a bike corridor to the Park could enable a user to make a stop and explore the Garden District along the way. Stations could also be placed near businesses as an economic development tool.

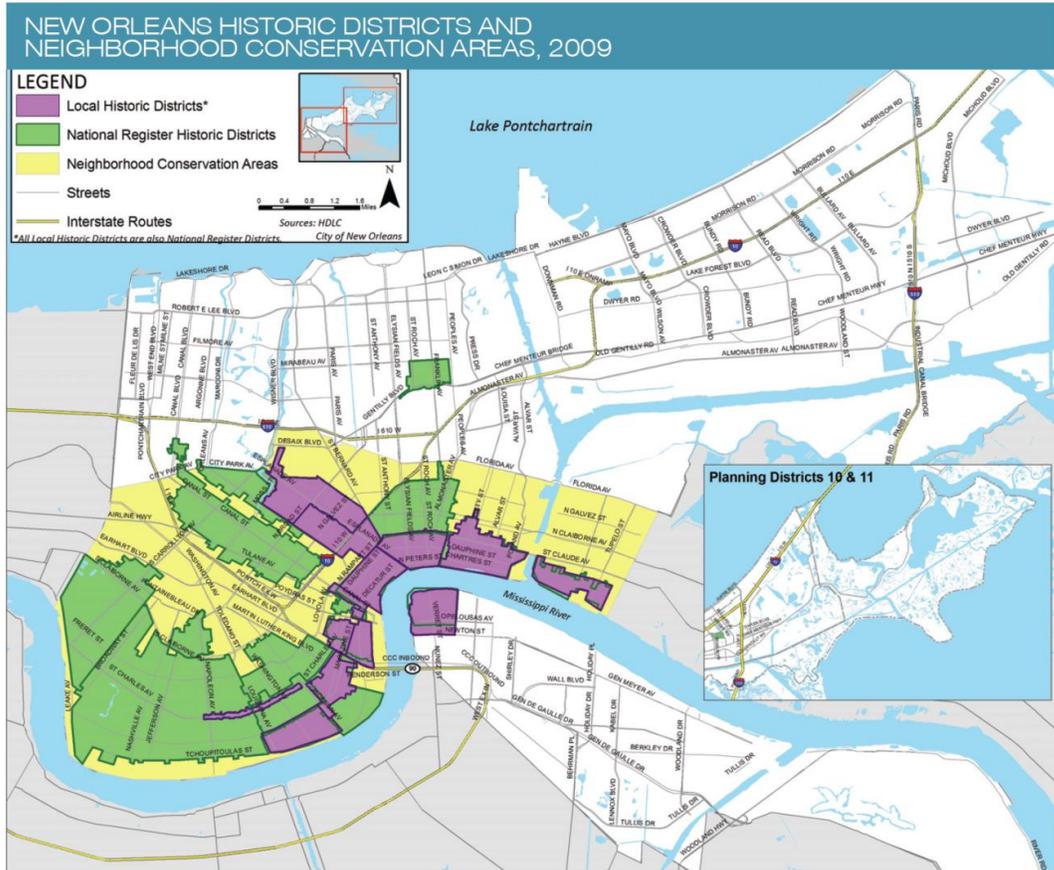
Strict design standards, however, pose a challenge to placing stations in these districts. For many systems, advertising at stations is a major source of revenue, further limiting stations in these neighborhoods. Nearly all of the areas that have higher concentrations of residents, attractions or jobs – the generators for bike share use – are within a local or national historic district or neighborhood conservation area. While this would not preclude bike share, it introduces a significant factor to consider in equipment selection and system design.



Riding through New Orleans' historic districts offer low-traffic streets for people on bicycles to enjoy. Road conditions throughout New Orleans, however, will be a challenge for expanding the bicycle network.

Source: NelsonNygaard

Figure 6 New Orleans Historic Districts



New Orleans' numerous historic districts are destinations in themselves, and they can also serve as pleasant, low traffic bicycle routes between the CBD and outlying destinations.

Source: City of New Orleans, New Orleans 2030 Plan, 2010

Right-of-Way

New Orleans has a dense network of streets, which is one of the best indicators of a great biking city. The small block sizes keep motor vehicle speeds slow and provide alternatives to streets with high traffic volumes. The existing street network presents great opportunities to develop a low-stress neighborhood bikeway network. The fine grid of streets provides great connectivity between bike share stations and businesses and destinations in all directions around it.

Yet, pavement conditions of many of these streets are poor. Even though



The dense network of streets and small block sizes allow pedestrians and people on bicycles multiple low-traffic alternatives to arterials.

Source: NACTO Urban Street Design Guide

public bikes are sturdy, they will require more frequent maintenance on streets with poor pavement conditions. Moreover, the ride will be less comfortable—and therefore less desirable—for users. Street lighting may also pose an issue. Although bike share bicycles are equipped with front and rear lights, patrons may feel uncomfortable cycling on dark streets in evening hours.

Another challenge for these streets is the narrow sidewalks. Bike share stations require about six feet of depth. If the sidewalks are to maintain ADA standards, at least a 10-foot sidewalk would be required. On streets with on-street parking, a bike share station could fit easily into a parking space. Removing parking, however, can be a challenge in areas where parking is in high demand.

TRANSPORTATION ASSESSMENT

The purpose of this section is to consider the existing conditions of the bicycle and transit network as it relates to a potential bike share system. The following section will identify gaps in the transportation network.

Bicycle Network

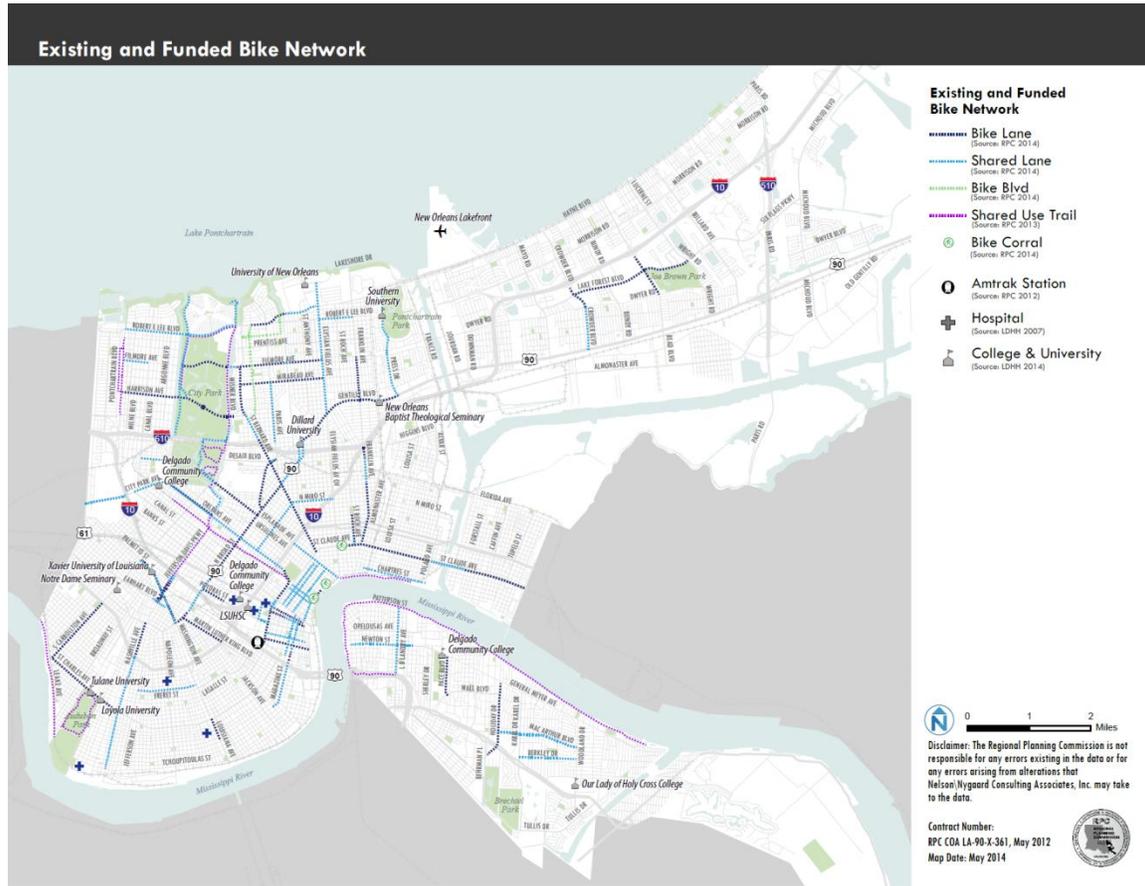
In the past five years, the bike network in New Orleans has expanded by about 400%. The existing and funded bike network contains about 24 miles of off-street trails and more than thirty miles of bike lanes (not including shared lanes or bicycle boulevards). Much of the mileage is focused in Mid-City and Gentilly, but Algiers, City Park, Lakeview, and Uptown offer bicycle lanes, trails, and signage as well (Figure 7). Bike share programs have been implemented in peer cities with much less bike infrastructure, but successful systems are in cities where users of all levels and abilities feel safe bicycling.



Bicycle ridership in the Marigny and Bywater neighborhoods is very high even with limited bicycle infrastructure.

Image from Nelson\Nygaard

Figure 7 Existing and Funded Bike Network



The existing and funded bike network offers more than 30 miles of bike lanes and 24 miles of off-street trails.

Source: Nelson\Nygaard

Transit System

Successful bike share programs in peer cities have worked to seamlessly integrate the program into the existing transit network by co-locating docking stations with transit stops. A handful of programs have even implemented fare cards compatible with both bike share and the existing transit system. This section highlights the existing network and considers the proposed network as well.

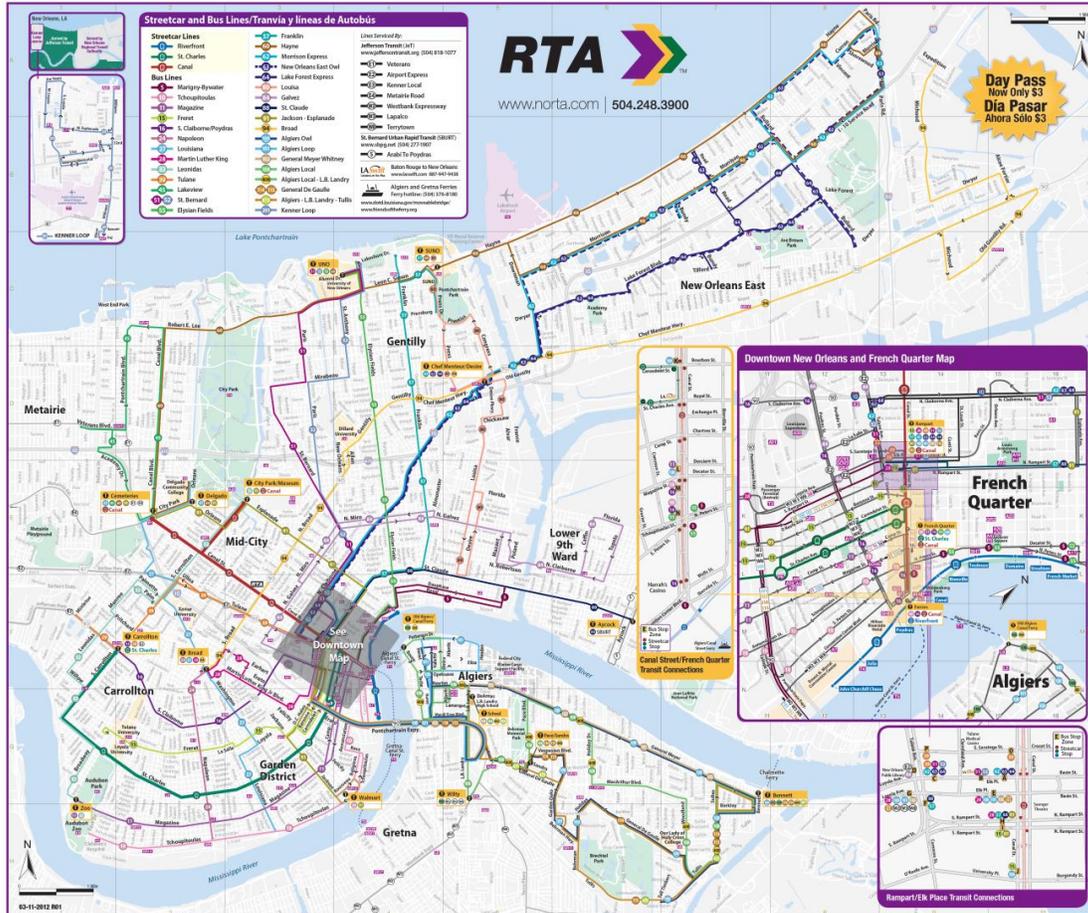
Existing Transit Network

RTA operates a system of 32 bus routes and 4 streetcar lines within the cities of New Orleans and Kenner. In 2011, the system carried about 47,000 riders on weekdays, 38,000 on Saturdays, and 27,000 on Sundays. Base headways are generally between 30 and 60 minutes, although the streetcar lines and a handful of bus routes operate more frequently. Service spans are generally long, with many routes operating until midnight or later. All routes operate daily except for 108 Algiers Local, 32 Leonidas, and 60 Hayne (RPC Comprehensive Operational Analysis, 2012).

The St. Charles and Canal streetcar lines carry significantly more riders than other services (9,300 and 7,300 weekday boardings, respectively). The bus routes with the highest ridership are the 94

Broad (3,500), 39 Tulane (2,700), and 88 St. Claude/Barracks (2,200) (RPC Comprehensive Operational Analysis, 2012).

Figure 8 RTA System Map



Nearly all of RTA's 32 bus routes terminate in the CBD. JeT serves areas on the Eastbank and Westbank of Jefferson Parish. Source: New Orleans RTA, 2012

According to an on-board survey completed during the Comprehensive Operational Analysis (COA) of the transit system conducted in September 2011, the majority of RTA transit riders who live in New Orleans had to make a transfer to reach their destinations. Less than a third of visitors, however, made a transfer. Having bike share as an option may reduce the amount of transfers transit riders have to make. They can step off a bus, grab a bike, and reach their destination more quickly than having to wait at a stop for a second or third bus.

JeT provides service on 12 fixed routes in Jefferson Parish, operating 11 bus routes on weekdays, six on Saturdays, and four on Sundays. These routes enter the city on either Tulane Avenue or by crossing the Crescent City Connection. Routes are classified based on whether they operate on the Eastbank or Westbank. JeT carries about 6,800 riders on weekdays, 3,100 on Saturdays, and 1,200 on Sundays. Headways are highly variable, with peak headways ranging from 20 to 78 minutes. Service begins at 5:20 AM and ends at 10:32 PM. Route E1 Veterans carries significantly more riders than any other route, with about 1,600 weekday boardings. The second highest route

is E2 Airport, with about 1,110 weekday boardings (RPC Comprehensive Operational Analysis, 2012).



RTA operates four streetcar lines. The stops will make excellent locations for bike share stations and help integrate bike share into the existing transit network.
Source: Nelson\Nygaard

Outside of the CBD, major transfer points include the Cemeteries Transfer and the intersections of South Carrollton Avenue and South Claiborne Avenue, Washington Avenue and South Broad Street, and Pace Boulevard and Sandra Drive. Placing bike share stations at transfer points is critical to integrating bike share networks into the existing transit network.

The Canal Street Ferry runs between Algiers Point and the CBD, providing access across the river for pedestrians and people with bicycles for \$2 each way. The ferry operates from 7:15 a.m. to 6:45 p.m. with later options on Friday and Saturday evenings. A second ferry line operates between Lower Algiers and Chalmette. Bike share stations placed at the ferry terminals will allow users to dock their bikes before getting on the ferry, reducing crowding and preventing riders from accruing additional fees for

time they are not riding the bike.

While headways and spans are generally adequate, there are few affordable alternatives for transit users who miss their bus or ferry and cannot afford to wait for the next. Service and hospitality jobs, which represent a large portion of the entry level jobs in New Orleans, frequently require late evening or early morning work hours. Bike share could provide an important means to supplement the existing transit system by providing additional flexibility and security for transit-dependent users and effectively extend the span of transit service to provide 24-hour mobility options.

Proposed Transit Network

RTA has plans to add more than 43,000 hours of service to their existing bus routes in 2014. These hours are being allocated across coverage routes and productivity routes.

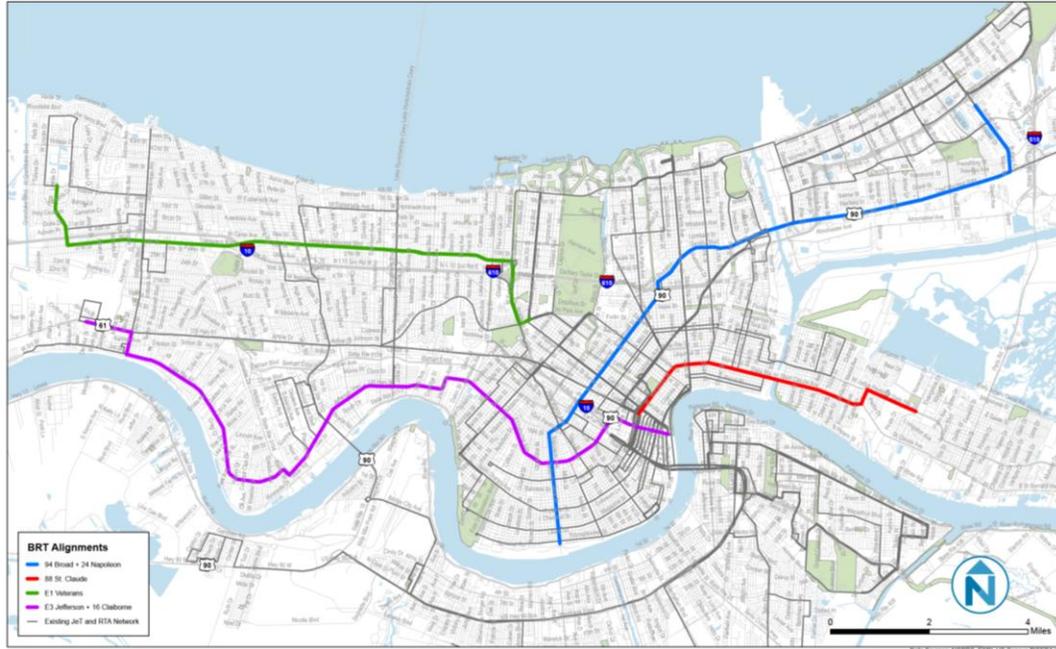
The Regional Planning Commission's COA proposes the consolidation of several high ridership routes into four bus rapid transit (BRT) corridors. Of these four routes, the following two have good potential for development:

- **E3 Jefferson Highway + Route 16 Claiborne:** The corridor is long enough for implementation of BRT service. Stop reduction and signal priority have the potential to reduce up to 50 percent of runtime or about 25 minutes. Runtime savings would be attractive for riders to wait and use the BRT service over the local on a typical 3 mile trip.
- **Route 94 Broad + Route 24 Napoleon:** The corridor is long enough for implementation of BRT service. Stop reduction and signal priority have the potential to reduce over 30 percent of runtime or about 20 minutes. Runtime savings would be very attractive for riders to wait and use the BRT service over the local on a typical 5 mile trip.

The Loyola Avenue Streetcar Line opened in January 2013 and future expansion has been planned. The Rampart Streetcar Expansion will bring six sheltered stops on a 1.5-mile route

extending from Canal Street to Elysian Fields Avenue. This line is expected to open in 2015 at the earliest.

Figure 9 Planned BRT Corridors



Four potential BRT corridors were analyzed in the Regional Planning Commission's COA.

Source: Regional Planning Commission and Nelson\Nygaard, Comprehensive Operational Analysis, 2012

GAPS IN THE TRANSPORTATION SYSTEM

Gaps in the Bicycle Network

In peer cities, bike share programs have spurred bike infrastructure development, helping to close the gaps in the existing network. Although the CBD is well served by bikeways, many of the outlying areas lack safe routes to reach the CBD. Visitors to New Orleans wanting to ride to Audubon Park will have to ride on unsigned streets and cross at high traffic intersections. Residents and workers along the Claiborne Corridor may face similar challenges traveling within their neighborhoods on two wheels. Algiers has an excellent multi-use trail along the river, but within the neighborhood the bike infrastructure is fragmented. Critical corridors to develop include routes within these neighborhoods as well as in Gentilly, Dillard, and the Seventh Ward. Bywater, the Lower Ninth Ward, and most of New Orleans East lack infrastructure altogether.

The conceptual map in Figure 10 highlights some of the gaps in the bike network in yellow. Neighborhoods with a high density of residences, employment, attractions, and existing bike infrastructure were considered in the geographic scope. This map is not intended to show exact locations of future bike infrastructure, but show some areas that would benefit from building connections. It is important to note that the map does not consider areas that have a sparse existing bike network, such as New Orleans East. Those areas will first need a more robust network before the gaps can be determined.

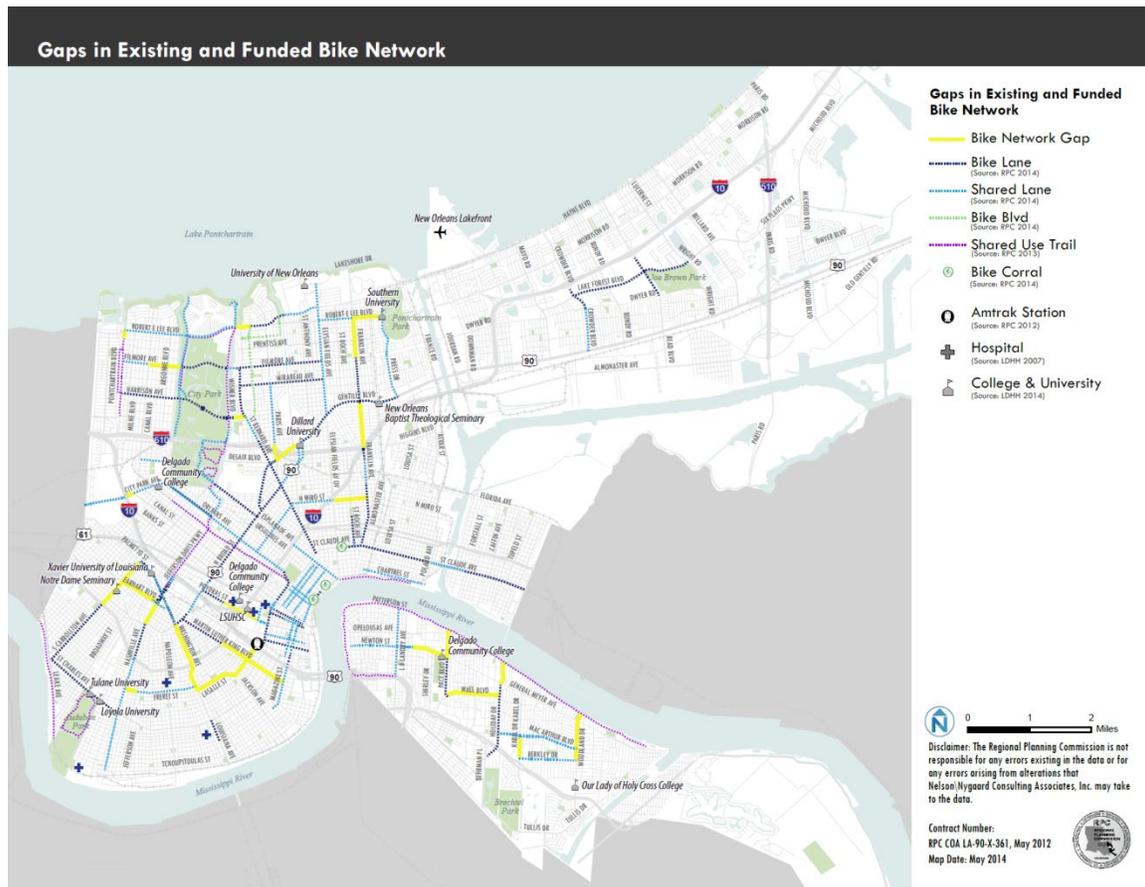
Bike Share and Bicycle Infrastructure

When planning a system, many concerned citizens and stakeholders ask if bike share programs should be implemented without a network of bikeways already in place. Although having a great network of bikeways will certainly support the bike share program, not all cities have waited for the infrastructure to develop before starting a bike share program. Boston had only one bike lane corridor before opening Hubway, and Miami Beach had even less before opening DecoBike. Since the advent bike share in each of the cities, the on-street bike network has grown tremendously, with many of the new bike lanes being placed to connect popular bike share stations.

New York City took a different approach. On-street infrastructure, including bike lanes and cycle tracks, began to spread rapidly throughout the city. The growth of infrastructure left many residents wondering when bike share would arrive in their neighborhood. Many of the residents live in small apartments without bike storage and pay a substantial portion of their income on transportation, so the momentum for bike share grew as the infrastructure spread.

Regardless of the approach cities take, bike share has an outstanding safety record. Programs perform best, however, when first time users feel safe on the roads.

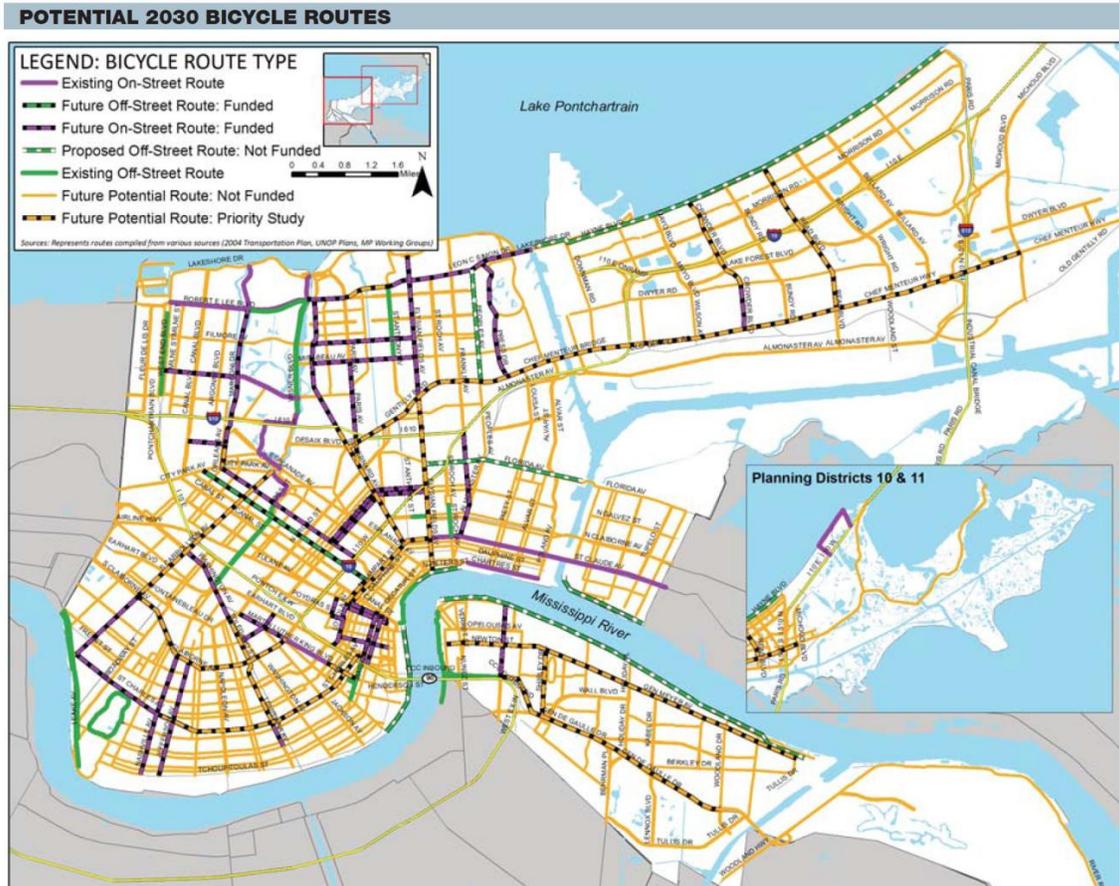
Figure 10 Gaps in Existing and Funded Bike Network



The map above highlights some of the most prominent missing connections in the existing and funded bike network. The yellow highlighted areas are conceptual missing links and are not intended to designate exact locations of future bike infrastructure, nor do they represent investment priorities for RPC or the City of New Orleans.

Source: Regional Planning Commission and Nelson\Nygaard

Figure 11 Potential 2030 Bicycle Routes (New Orleans 2030 Plan, 2010)



The City of New Orleans has planned hundreds of miles of planned bicycle routes, which bike share may help develop.

Source: City of New Orleans, New Orleans 2030 Plan, 2010

Gaps in the Transit Network

The RPC’s recently completed Comprehensive Operational Analysis highlights areas with poor street connectivity, limited service hours, and low accessibility. The following sections broken out by region discuss some of the most pressing issues and explain how bike share may help overcome existing barriers.

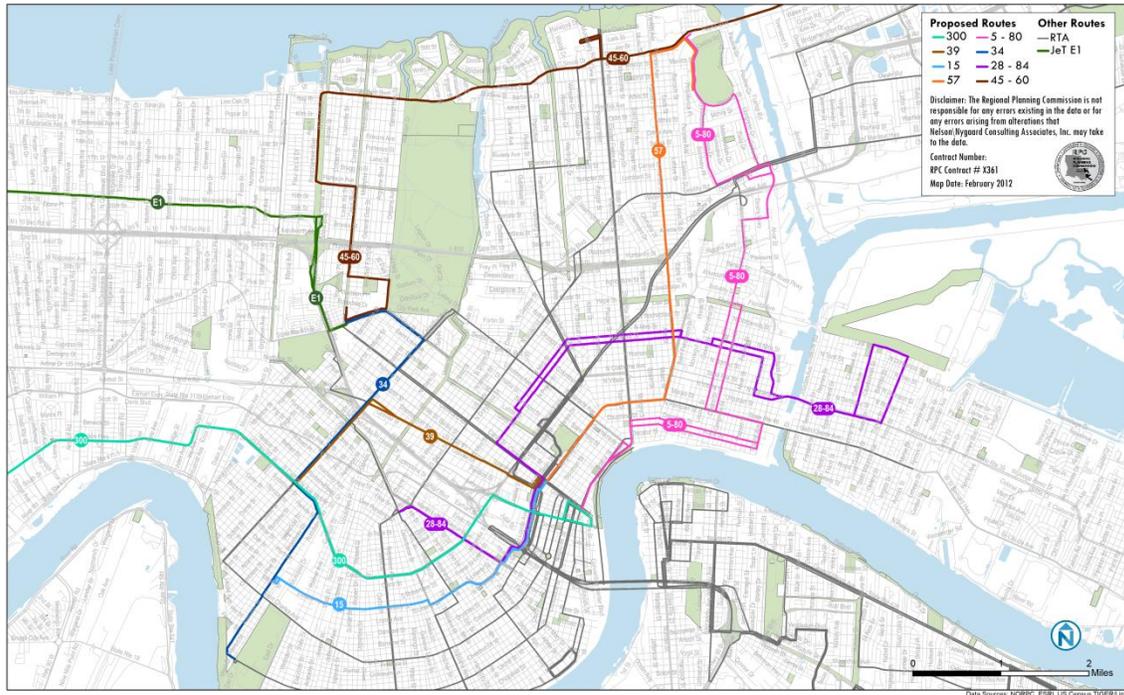
Lakeview, Carrollton, and Tulane

Poor accessibility to Tulane University and limited connections to Mid-City, Elysian Fields Avenue, and the Saint Claude neighborhood are some of the most pressing challenges on the Eastbank. Also, the lack of a continuous bus route along Carrollton Avenue makes trips among those neighborhoods difficult for people without access to a car (RPC Comprehensive Operational Analysis, 2012).

Bike share can help address some of these challenges by providing supplemental service. Bike share in areas with limited transit connectivity or poor accessibility may help people access stops located too far to walk. Moreover, stations along Carrollton Avenue and in Lakeview (where Route

45 runs a one-directional loop), may reduce travel time and build connections between City Park and surrounding neighborhoods.

Figure 12 Recommended Transit Changes in Lakeview, Carrollton, and Tulane



Recommended changes in Eastbank neighborhoods will improve accessibility to Tulane University and connections to Mid-City, Elysian Fields Avenue, and the Saint Claude neighborhood.

Source: Regional Planning Commission and Nelson\Nygaard, Comprehensive Operational Analysis, 2012

New Orleans East

A handful of bus lines serve New Orleans East, but irregular headways make access to transit difficult for most of the area's residents. Circuitous, one-direction routings also lengthen passenger trips and walking distance. This also makes the system less navigable for residents.

Unpredictable arrival times can make using the transit system frustrating for users. Bike share in this area would give residents more routes to choose from and provide better access to jobs and services on Lake Forest Boulevard. It would be difficult, however, for residents to access other neighborhoods outside of New Orleans East.

Figure 13 Recommended Transit Changes in New Orleans East



Recommended changes to New Orleans East will help address overcrowding, redundant lines, and changes to land use.

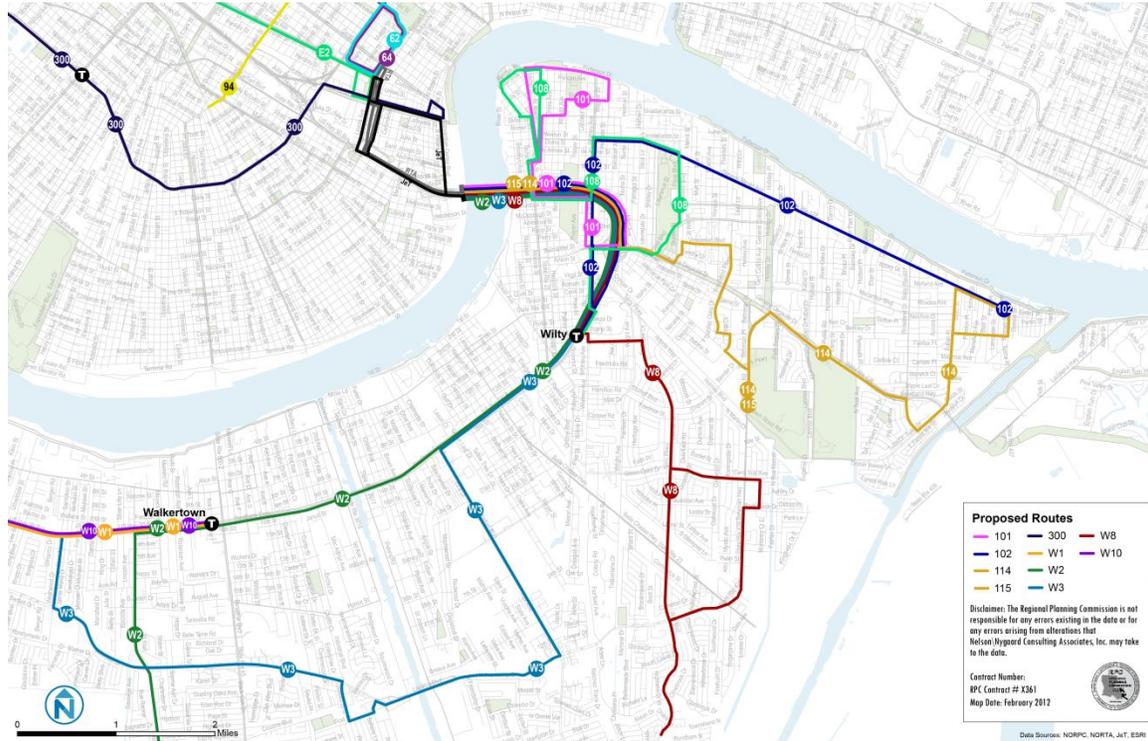
Source: Regional Planning Commission and Nelson\Nygaard, Comprehensive Operational Analysis, 2012

Algiers

Algiers and Algiers Point suffer from many of the same challenges as New Orleans East. Service is spread across several different corridors. Though this maximizes coverage, it makes for less frequent service. Additionally, street connectivity in the area can prove challenging, which reduces walkability and increases the amount of time it takes to access transit stops.

Bike share stations placed at transfer centers and at community hubs throughout the neighborhood may help reduce total travel time, especially in off-peak hours. Bike share may also help improve neighborhood connectivity where poor street connectivity lengthens trips taken on foot.

Figure 14 Recommended Transit Changes in Algiers



Recommended changes in Algiers will improve connections between JeT and Route 108 and reduce route duplication.

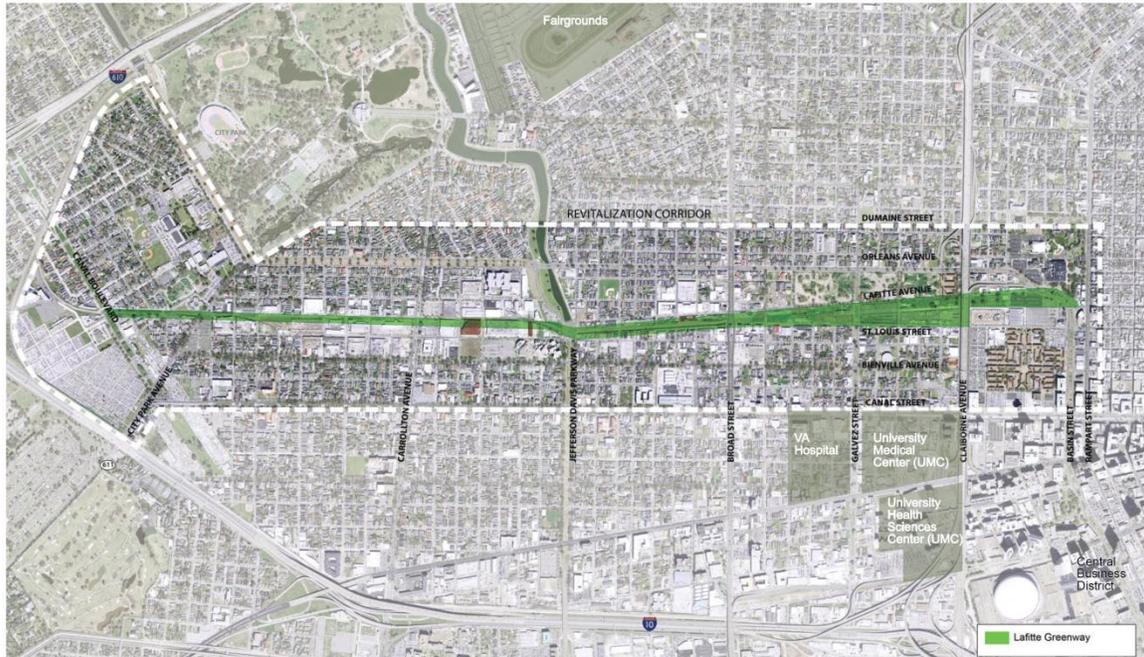
Source: Regional Planning Commission and NelsonNygaard, Comprehensive Operational Analysis, 2012

KEY INITIATIVES

The following initiatives will have a direct impact on bike share ridership and user comfort:

- **Complete Streets Ordinance.** The City of New Orleans passed a unanimous Complete Streets Ordinance requiring that all transportation improvements be planned, designed, and constructed to encourage walking, bicycling, and transit use. Bike share frequently spurs the development of bicycle infrastructure by generating momentum for bicycle improvements in the community, so bike share will both help achieve the goals of the initiative and benefit from it.
- **Fit NOLA Partnership.** The partnership has brought together over 100 organizations to develop a strategy for a fitter, healthier New Orleans. Looking for ways to make physical activity easier for all New Orleanians is a critical component of this effort. Considering the positive health outcomes that bike share can bring to a community, bike share could help achieve the goals of this initiative in direct ways.
- **Livable Claiborne Communities.** The City of New Orleans is currently leading a study to understand how communities along the Claiborne Avenue corridor can be strengthened and revitalized for its residents and for the city and region. The study is an integrated transportation and neighborhood revitalization planning process and will develop ways in which the City can meet the transportation needs of the community. The City is considering all modes, and the result may lead to more bicycle infrastructure in the neighborhood.

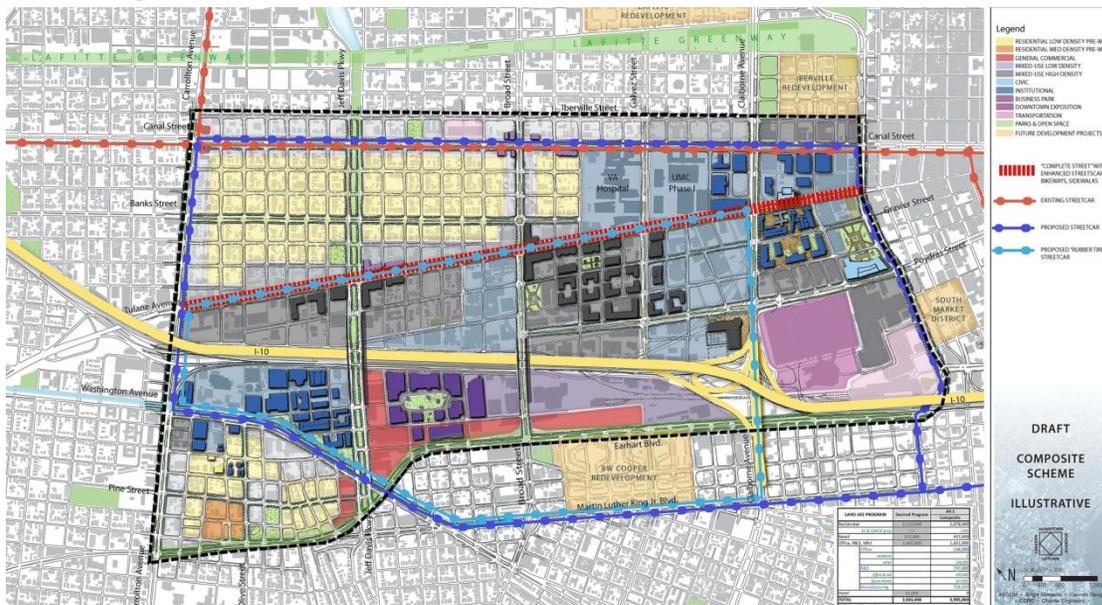
NEW ORLEANS BIKE SHARE FEASIBILITY STUDY | BIKE SHARE BRIEFING PAPER
 New Orleans Regional Planning Commission



The Lafitte Greenway will run between Navarre and the French Quarter, creating a comfortable bicycling environment.

Source: City of New Orleans

- Lafitte Greenway.** The 3.1-mile Lafitte Greenway and Revitalization Corridor will restore many of the areas devastated by Hurricane Katrina between Navarre and the French Quarter. Running along a rail corridor, this greenway will provide direct access to the CBD amenities as well as neighborhoods and City Park. Bike share stations along this corridor will create better access and bring positive economic benefits to adjacent neighborhoods.



The new BioDistrict will bring 11.6 million square feet of new and renovated building space to an area spanning the CBD and Mid-City areas.

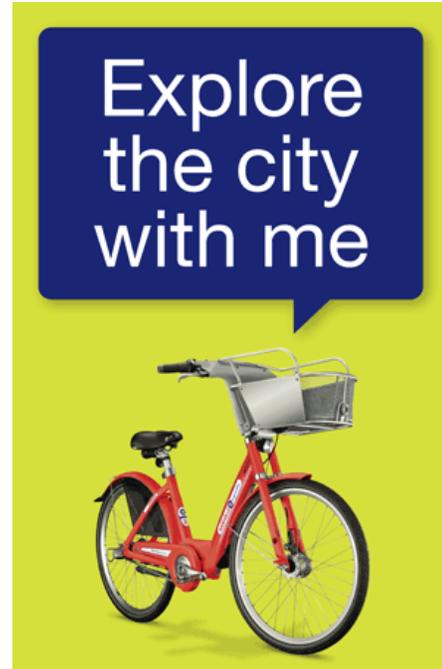
Source: City of New Orleans

- **New Developments.** A wave of new developments has created numerous sites ideal for bike share. The new BioDistrict is expected to bring 11.6 million square feet of new and renovated building space and 34,000 new jobs. Other developments, such as five mixed-income housing communities and other residential developments are ideal for bike share. Attractions, such as the National World War II Museum, are perfect locations of bike share stations.

Additional details related to policies, codes, and initiatives that could impact the size, business model, and implementation of bike share in New Orleans are presented in Supplement 1.

BIKE SHARE IN PEER CITIES

Most major urban areas in the United States have implemented a bike share program or completed a feasibility study. Although comparison of programs is difficult when considering population size, density, existing infrastructure, climate, and culture, some lessons can be learned from the experience of other cities. Four cities have been selected as peer cities for bike share: Nashville, Washington, DC, Chattanooga, and Minneapolis. Basic characteristics of these cities and their bike share program can be found in Figure 16. Although New Orleans is a unique city with unique challenges and opportunities, these cities share similarities with New Orleans related to development patterns, density, historic considerations, or tourism rates. The following sections outline the development of each of these programs and explain specific lessons that will inform the implementation of a bike share program in New Orleans.



Nashville B-Cycle was a peer city because it operates in a city with a high number of tourists.
 Source: Nashville B-Cycle

Figure 15 Peer Cities and Reason for Comparison

Peer City	Basis for Comparison
Nashville, TN	<ul style="list-style-type: none"> ▪ High rates of diabetes and obesity; health disparities ▪ High number of annual visitors seeking entertainment districts ▪ System size
Washington, DC	<ul style="list-style-type: none"> ▪ Mature bike share system ▪ Major tourism city ▪ Transportation equity concerns ▪ Transit overcrowding issues
Chattanooga, TN	<ul style="list-style-type: none"> ▪ Lively downtown ▪ Intense competition for employers, jobs, and talent ▪ Southern climate ▪ Cultural challenges to bicycling
Minneapolis, MN	<ul style="list-style-type: none"> ▪ Community concerns of equity ▪ Emphasis on public health

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New Orleans Regional Planning Commission

Figure 16 Comparison of Peer Programs

Peer City Program	City Population and Population Density (people per sq. mile)	Annual Visitors (in millions)	2014 Bikeway Coverage (miles)		Launch Date	System size (initial phase)		Productivity	
			Off-street	On-street (Bike lanes only)		Stations	Bikes	Ridership (Ave. daily rides)	Number of annual subscribers
Nashville B-Cycle	624,496 pop. 1,200 ppsm	12.2	52	30	December 2012	21	200	121	716
Capital Bikeshare (Washington, DC only)	632,323 pop. 10,528 ppsm	18.5	56	59	September 2010	150	1500	6,626	41,007
Bike Chattanooga	171,279 pop. 1,223 ppsm	3.1	13	11	July 2012	30	300	71	Unknown
Nice Ride Minnesota (Minneapolis only)	392,880 pop. 7,020 ppsm	4.2	85	92	June 2010	75	1000	566	69,301

Sources: City of Nashville, Nashville Downtown Partnership, District Department of Transportation, City of Chattanooga, Nice Ride Minnesota

Nashville B-Cycle

In December 2012, a small bike share program of 21 stations and 200 bikes launched in Nashville. A nonprofit management association called the Nashville Downtown Partnership operates the program, and the Mayor's Office and the Metro Nashville Health Department co-sponsor the program. Nashville is a city of more than 600,000 residents with generally low-density development patterns outside of the downtown core. The city has 50 miles of off-street trails and has designated 133 miles of road as bikeways, though many of these bikeways lack dedicated on-street bike infrastructure.



Nashville B-Cycle riders can choose from stations at a number of Music City's most exciting entertainment districts.
Source: Nashville B-Cycle

The program's goals include improving public health outcomes, reducing vehicle emissions, promoting vibrant central city neighborhoods, and offering a new mobility choice.

Like New Orleans, Nashville residents suffer from high rates of diabetes and obesity. Bike share is one of the City's initiatives to increase physical activity and grant better access to healthy food. Some of the 21 stations have been placed at parks with bicycle trails and at the Nashville Farmer's Market, a year-round source of fresh fruits and vegetables. If it decides to pursue a program, New Orleans could take a similar approach by placing stations at public parks and education centers.

Another similarity with New Orleans is that Nashville annually hosts millions of tourists seeking out the vibrant entertainment districts. The 12.2 million tourists visiting Nashville in 2013 resulted in more than \$4.6 billion in revenue for the city.¹³ Stations placed throughout Nashville cater to visitors and locals arriving to the entertainment districts on two wheels. Locations include Lower Broadway, 12 South, The Gulch, and Five Points. Major tourist destinations, such as Bridgestone Arena, the Country Music Hall of Fame, the Parthenon, and LP Field offer stations. A New Orleans program with tourism in mind might consider station locations in the French Quarter, the Superdome, and Audubon Park. If stations are located near hotels, visitors may not have to rent a car to reach New Orleans' many attractions.

¹³ Visit Music City. Statistics and Demographics. <http://www.visitmusiccity.com/Media/presskit/kitstatisticsdemographics>

Vélib': An Aspirational Peer

Paris' Vélib' bike share program is one of the world's largest and most successful systems. Launched in 2007, average daily ridership today exceeds 85,000 trips, and membership surpasses 220,000 people.

Paris has many of the indicators that make it an ideal city for bike share. High rates of tourism, a dense development pattern, slow vehicle speeds, high intersection density, and a multitude of attractions. Stated simply, Paris is an enjoyable and practical place to ride a bicycle.

Not all of Paris' success was good luck, however. Integration into the existing transit network has proven beneficial to the system. Data collected from the system has shown that the most used docking stations are those placed adjacent to Métro stations. Moreover, the program benefited from an easy and clear registration process, allowing first time users to leave stations on two wheels within five minutes.

Not all cities have the dense development patterns of Paris, but cities can choose to invest in an easily accessible program that works seamlessly with the existing transit system.



Although many cities have chosen bright colors for their bicycles, Paris opted for a neutral grey to better blend in with the existing urban environment.

Source: Wikimedia Author Mario Roberto Durán Ortiz

Capital Bikeshare

Capital Bikeshare launched in September 2010 with 150 stations and 1500 bicycles. The regional program has since grown to more than 300 stations, which span the District and neighboring suburbs. Washington is the densest of the peer cities with more than 10,000 people per square mile. DC's main objectives in pursuing bike share were to provide more and cleaner mobility choices to residents, workers and visitors; efficiently connect neighborhood nodes; provide lower cost, more reliable transit throughout the city and introduce some fun into city travel.

Prior to the launch of Capital Bikeshare the city had a modest, but growing, network of dedicated bicycle facilities. In 2000, Washington contained less than four miles of bike infrastructure. Anticipating a large number of tourist, visitor, and novice riders on the system, it was the priority of the District Department of Transportation, the funder and owner, to dramatically expand the city's bikeway network prior to system launch. Two years after Capital Bikeshare started, Washington had 59 miles of bike lanes and an additional 56 miles of off-street trails. Bicycle ridership rates have risen by 172% since 2000 levels, much of this growth happening since 2010. In total, Capital Bikeshare estimates that the program replaces more than four million vehicle miles annually.¹⁴

The experience of Washington in its first three years of operation has important implications for New Orleans. Leadership from the community, the District Government, and the program itself facilitated the momentum generated by the program into lasting city improvements. Bike share programs attract the attention of the greater community, forcing residents to consider the importance of bicycling as a commute and recreation choice. By spreading the word through local media, marketing campaigns, a high quality website, and social media, New Orleans can mimic the success of Washington in developing new infrastructure to make cycling safer. This will not only make the city safer for users of the program, but it will benefit people using their own bicycles and other road users.

Washington offers additional lessons for New Orleans.

¹⁴ 2013 Capital Bikeshare Member Survey Report <http://capitalbikeshare.com/assets/pdf/CABI-2013SurveyReport.pdf>

From its onset, bike share in the city was envisioned as a supplemental public transit system. As such, it was a priority of the city that the system be available to residents in every ward of the city. In this regard, the development of Capital Bikeshare differed from many other cities. Rather than focusing on dense station placement in the urban core, Capital Bikeshare located stations in neighborhoods throughout the District and then densified the system over time. Lessons to be learned from the DC experience are that merely placing stations in lower income neighborhoods does not necessarily make bike share service available to residents. Because use of the system requires a security deposit, or at least the assurance that penalties could be paid, users were/are required to have a credit or bank card which also provides personal information including name and address. In DC’s experience, this presented a stubborn obstacle to use for certain populations, despite the best intentions of the city to provide equitable access and transportation services.

When choosing locations initially, Capital Bikeshare prioritized the placement of stations at Metro rail stops, active retail or commercial clusters, and major bus transfer points. Patrons could ride the bicycles from their neighborhood station to the transit stop. New Orleans bike share could follow a similar pattern, placing stations at critical transit centers, such as streetcar stops, ferry docks, and bus transfer points. In addition to attracting bike share ridership, these location choices may help transit users access their destinations more efficiently or at later hours than current services allows.

As a major tourism and event city, Washington DC also offers similar comparables to New Orleans. Major events include, among others, the annual Cherry Blossom Festival, Fourth of July festival, and quadrennial Presidential Inauguration. These events draw close to a million people and require major realignment of the city’s transportation systems in response. Bike share has been a player in recent years and the modular stations have been moved in or out of these areas to meet the demands for access and security.

Finally, the core of the city has significant challenges and obligations as a national landmark and national historic district. Introducing bike share in this high-demand/high productivity area required coordination with federal planners and designers and historic preservationists. On the whole, these stakeholders were encouraging supporters of the system seeing it as a way to reduce the visual blight of auto congestion and its associated impacts while maintaining access and minimally (if at all) affecting the overall visual character of the area.

Figure 17 Spatial Station Layout and Supporting Land Uses of Peer Systems

Program	Spatial Station Layout and Supporting Land Uses
Nashville B-Cycle	<ul style="list-style-type: none"> ▪ Stations are located at major tourist attractions, such as sports arenas, music venues, and entertainment districts. ▪ Stations are located in the densest residential areas of the city.
Capital Bikeshare (DC only)	<ul style="list-style-type: none"> ▪ Stations are spaced throughout the District, including many of the less dense neighborhoods. ▪ Stations are frequently sited adjacent to Metro rail stops.
Bike Chattanooga	<ul style="list-style-type: none"> ▪ Stations are located only in the central urban core. ▪ Stations are located at/near tourist attractions and arts and entertainment districts.
Nice Ride Minnesota (Minneapolis only)	<ul style="list-style-type: none"> ▪ Stations are located in the urban core and denser residential areas. ▪ Certain stations are placed in less dense areas to attract underserved, transit-dependent, or low income communities.



Bike Chattanooga users can cycle from the Bluff Arts District across the river on the Walnut Street Bridge, one of the world's longest pedestrian bridges.

Source: Bike Chattanooga

Bike Chattanooga

Bike Chattanooga implemented the nation's first GPS-enabled bike share program in July 2012. They began their program with 300 bicycles located at 30 stations. The city of 170,000 focused on creating a vibrant downtown core. Bike Chattanooga placed stations at major employment centers, restaurant districts, and local attractions, such as the Tennessee Aquarium, the Hunter Museum of Art, and the Bluff View Art District. The downtown, which has seen a resurgence of redevelopment since the 1990s, has worked to expand the on-street bicycle infrastructure. The City sees this as critical to attracting talent, particularly in the green jobs market. Local competitors of Chattanooga, such as Spartanburg, SC, Knoxville, TN, Asheville, NC, and Greenville, SC, have followed suit in an effort to enhance the livability of downtown.

New Orleans can glean important lessons from Chattanooga. Bike share has the potential to enhance the livability of downtown cores by working with local businesses. Pairing bike share stations with outdoor dining areas, pedestrian districts, urban parks, and attractions promotes the idea that New Orleans is a great place to live as well as visit. Bike Chattanooga has promoted the system by embracing new developments, particularly in the downtown core. The former home of the Chattanooga ChooChoo is currently being redeveloped, and Bike Chattanooga stations have been integrated into the new landscape, which now hosts restaurants, businesses, and a boutique hostel.

Enhancing livability can be particularly important in helping attract businesses to a district. Tech companies and green employers seek out cities that promote healthy and low-carbon lifestyles among their employees. Bike share is both a symbolic gesture and concrete investment that demonstrate a city government's dedication to sustainability. This gesture can go a long way in small and mid-sized cities. One of the most critical lessons from Chattanooga has been the development of a bike culture that previously did not exist. Bike Chattanooga hosts events that work with the local bike community. These events, which include live music, refreshments, and discounted membership, promote bicycle use on both public and private bikes. In a relatively short period, Chattanooga has developed a reputation as one of the most bike friendly cities in the South.

Nice Ride Minnesota

Nice Ride Minnesota launched in Minneapolis in June 2010 with 75 stations and 1000 bicycles. The program has included equity as a critical component to its operations. Many of the program's stations were placed in areas that do not have the predictive characteristics of high-usage. These stations aim to provide access to underserved and transit-dependent populations. Frequently these populations suffer from greater health disparities and higher exposure to pollutants. Nice Ride has also worked to promote ridership among unbanked populations. Ensuring communities of all income levels have helped Nice Ride achieve its goal to promote equity in the region.



Many of Nice Ride's stations are placed in areas with transit dependent populations.
Source: Flickr User Chris

Another major goal of the Nice Ride system was to promote health. Through its emphasis on public health, Nice Ride successfully secured a strong private sector partnership with BlueCross BlueShield of Minnesota. The insurance provider valued Nice Ride's commitment to health as a motivating factor and has partnered with Nice Ride at events promoting healthy living throughout Minneapolis and St. Paul. Nice Ride's commendable reporting and data collection considers calories burned by Nice Ride users. Including these data in its reporting reminds the community and public officials that the success of the program is more than just ridership counts.

New Orleans has numerous low income neighborhoods that could benefit from more mobility choices. Stations in these locations may not perform as well as they would in denser environments, but the benefits to populations served by a new mobility choice may be just as important. As the cost of living continues to rise in New Orleans, providing an affordable way to access jobs, healthcare, and other needs will help residents to continue to prosper. Ensuring that all income levels have access to the program from the start will likely allow New Orleans to bypass any perception that bike share is an investment for higher incomes residents.

Additionally, New Orleans can learn from Nice Ride's focus on health. Rates of obesity and diabetes are higher in New Orleans than in the nation as a whole. Although bike share is not a panacea for all health issues, leading a more active lifestyle can help reduce the risk of these diseases. Bike share could work as a part of a larger health initiative, providing more visibility to public health campaigns. Considering the number of insurance providers located in New Orleans, a focus on health may also help match a potential program with a sponsor.

LEADING AND EMERGING PRACTICES

Although modern bike share systems are in hundreds of cities around the world, the programs are not as established as other transportation modes. As different programs experiment with different approaches to access, operations, outreach, and funding, a list of best practices is evolving. This section documents some of the leading and emerging practices resulting from the trial and error of cities around the world. By considering the lessons learned, New Orleans can learn from the successes of other cities.

Equitable Access

People who are transit-dependent or living in underserved transportation areas often become some of the most frequent users of bike share. A growing number of cities have focused on equitable access for living and working, even in neighborhoods of low density. Nice Ride Minnesota has placed stations in lower-income neighborhoods where access to affordable transportation is critical for residents. These stations do not always perform as well as stations in denser areas, but these stations help Nice Ride achieve its equity goals.

Placing stations in low-income neighborhoods, however, is not sufficient. Access to the stations needs to consider people without credit cards or checking accounts. Program operators frequently work with community groups to deliver discounts and vouchers to unbanked populations. Special grants for Denver B-Cycle and Boston Hubway have provided key-fobs to lower income users at discounted rates. Nice Ride Minnesota provides vouchers for free subscriptions.¹⁵ A multitude of programs also provide discounted rates to students. Capital Bikeshare works with Bank on DC, a collaborative effort between the District Government, financial institutions, and anon-profits that educate and enhance access to unbanked households in the District. Capital Bikeshare donates a free \$25 gift certificate toward the cost of an annual membership when a user opens an account.

Working with community partners in the initial planning phases can help determine the mobility needs of low-income residents and how bike share can best meet those needs. Diverse support coalitions, multiple language offerings, adaptive bicycles for people with disabilities, and targeted marketing appealing to certain groups have helped generate enthusiasm for bike share across all income levels.

¹⁵ Carney, Michael. Bike-sharing and the Unbanked. http://chi.streetsblog.org/wp-content/uploads/2013/09/Bikeshare_Unbanked_Carney_Final.pdf

System Monitoring and Data Collection

The benefit of modern bike share programs that previous generations of programs did not have is the monitoring and data collection component. Program operators can observe the trends of bicycles as they move throughout the city and receive up-to-date ridership and membership information. Program operators can use the data to help determine the public health, environmental, and social benefits of the programs.

Some programs have made their data available online. Capital Bikeshare and New York City's CitiBike provide web interfaces that allow the public to scroll through historic data. The data are presented in a manner that highlights their benefits to the program. Emissions reductions, calories burned, and other successes of the program can be integrated into a web interface, further communicating the positive impact of bike share.

Releasing data to either the public or research groups can help develop partnerships with community members. Universities would benefit from the data and could in turn produce research with recommendations for future system improvements.

System Maintenance and Rebalancing

A major challenge for bike share programs with docking stations is the need to distribute bicycles in a way that gives users both a bicycle to rent and a place to park. Over time, certain stations become either full or empty, which prevents some users from either finding a bicycle to ride or finding a place to park the bicycle they are riding. With up-to-date data, operators can respond when stations are full or empty. Using historic data, operators can also develop predictive models that anticipate which stations need rebalancing. These models are complicated by anything that affects the demand for cycling, such as construction, changing weather patterns, and special events.

Regarding maintenance, most bicycle docking stations have buttons that users can push when a bicycle needs maintenance. These buttons notify operators, who can show up to inflate tires, fix chains, or adjust gears among other common issues.



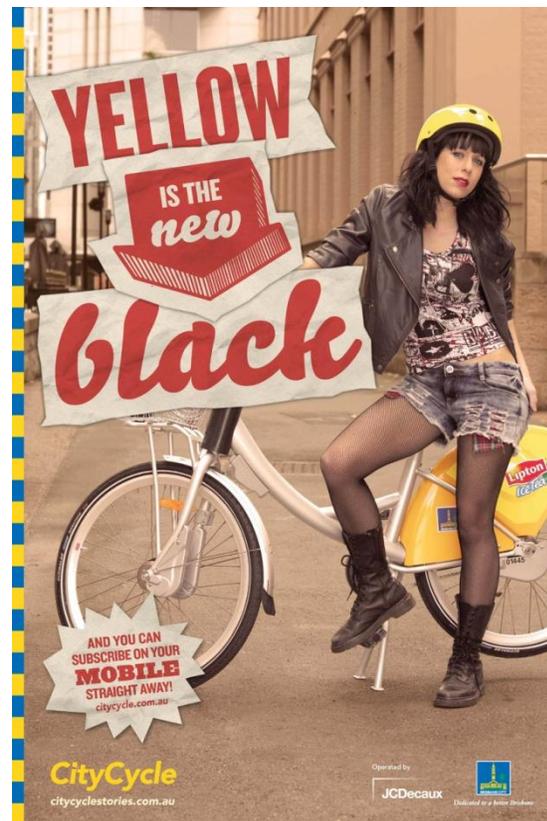
Capital Bikeshare maintains a data dashboard where the public can track ridership and other performance metrics.

Source: Capital Bikeshare

System Marketing and Branding

Marketing of the program works best when it provides simple, clear instructions for how the system operates. Many residents of New Orleans may have visited other cities with bike share, but the program will be a new experience for the city. Therefore, advertising should help make the system approachable and easy to understand.

Frequently, program operators attempt to make bike share trendy through advertising. Yet, users of bike share vary in ages, races, incomes, and ethnicities. What looks exciting or interesting for one audience does not necessarily apply to others. Focus groups conducted in Brisbane, Australia, found that the program would have benefited from more informative advertising rather than the existing advertising attempting to raise the status of cycling for a young, wealthy audience.¹⁶



The best bike share marketing campaigns promote convenience and cost-effectiveness. The Capital Bikeshare advertisement (left) has four simple steps: join, take, ride, and return. Findings from focus groups in Brisbane, Australia, have suggested that potential users would prefer informative instructions rather than advertisements attempting to make the program trendy (right).
Source: Capital Bikeshare and Brisbane CityCycle

Branding should also be clear. Systems typically choose bright colors to increase visibility of the program. Some users have noted that other road users give them more space on public bicycles

¹⁶ Fishman, E., et al. 2012. Barriers and Facilitators to Public Bicycle Scheme use. Transportation Research Part F 15: 686-698.

relative to private bicycles. These bicyclists speculate that other road users assume the bicyclists on public bikes may be tourists, unfamiliar with their direction or surroundings.¹⁷

Not all bicycles have to be brightly colored, however. The bicycles of Paris' Vélib' system are grey, blending into the urban landscape from a distance. Close-up, the bicycles are clearly branded with the Vélib' logo.



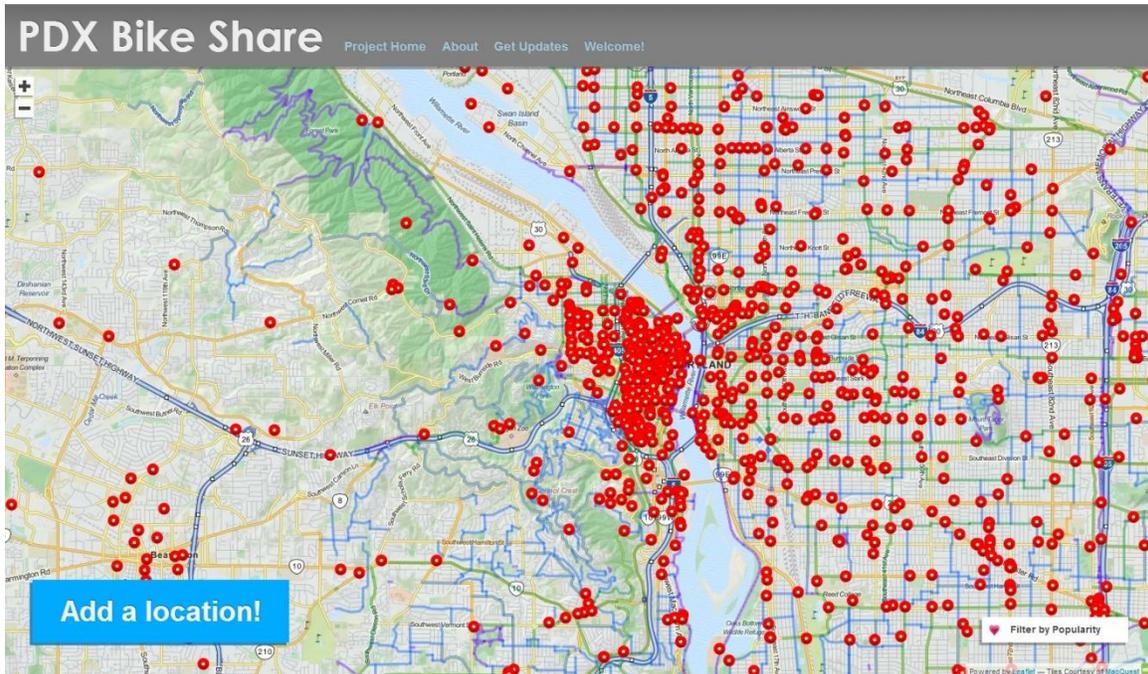
Many programs choose bright colors, such as blue in Melbourne, green in Minneapolis, and red in Washington, D.C. Other cities hope their bikes blend into the urban landscape. Paris' Vélib' uses gray bikes, London's Barclays Cycle Hire uses dark blue bikes. Source: NYCDOT

System marketing efforts have utilized internet deals to attract riders. Capital Bikeshare, for example, has used Living Social and Groupon discounts to test out the program through discounted rates. These efforts have resulted in more than 8000 new members. Moreover, Capital Bikeshare has worked with station-adjacent businesses to develop coupons sent out to users. This helps support businesses and demonstrates to business owners the positive impact that the docking stations can have.

Community Outreach Efforts

Bike share has the potential to develop new partnerships in the community. It also has the potential to anger different community groups if the groups are not consulted. Bringing leaders from different neighborhood associations, civic organizations, business associations, and government agencies has played an important role in shaping the citywide perception of the program. Ensuring stakeholders and board members represent different income levels, neighborhoods, races, and ethnic groups in the community has boosted the equity efforts in many cities. A consistent lesson learned from other programs has been that program planners have had better success when engaging the stakeholders from the start rather than waiting until later in the process.

¹⁷ Fishman, E., et al., 2012



An innovative tool used in Portland, OR, is a web interface that allows users to pinpoint their desired bike share locations.
Source: Portland Bureau of Transportation

When planning systems, public officials and program operators frequently consult the community at public working group meetings and open houses. Technical advisory committees ensure the proposed locations are feasible, and citizen advisory committees help develop a program that stays within the public's best interests. Surveys posted online help gain additional feedback from individuals who are not able to attend meetings.



At public meetings in New York City, community members flagged bike share stations in their community that should be removed from consideration or prioritized.
Source: NYCDOT

An innovative tool used in Portland, OR, was an online interface that allowed members of the public to place their ideal stations. People could vote on their favorite locations, and the tool had an option to filter out the most and least popular locations.

In addition to an online "Suggest-a-Station" map, the New York City Department of Transportation (NYCDOT) brought maps to many of their 159 public meetings during their 18 month outreach process. At the meetings, planners presented a map of 2900 station location options that had been selected by neighborhood associations, business improvement districts, and members of the public using the online map. From the wide field of station location options, community members used colored stickers to flag stations alternatives to be either prioritized or removed from consideration. This activity helped eliminate thousands of station options and determine the initial 600 station locations.

NYCDOT also implemented other best practices in their extensive public outreach process. They conducted 21 field demonstrations with multiple language options. These demonstrations were held at community centers, schools, and major transit hubs. Temporary locations required only an hour to install, which minimized disturbances.

It is difficult to understate the importance of social media in the public outreach process. Social media provides a way to interact with the public and gain feedback from people who may not be able to make meetings. Younger adults, who are more likely to use social media and less likely to attend public meetings than other age groups, are the most frequent users of bike share programs. By interacting with Twitter or Facebook users, public outreach efforts can reach thousands of more potential users and stakeholders. As of March 2014, Capital Bikeshare's Twitter feed had nearly 10,000 followers and New York City's Citibike has nearly 19,000 followers. Even programs in medium sized cities have several thousand followers, presenting a compelling case for developing a social media presence.



Capital Bikeshare has maintained a Twitter feed updating its 10,000 followers on program expansion and major milestones.
Source: Twitter

Regardless of which tools are used, the program operators and sponsors keep all stakeholders and the general public informed, frequently using social media, traditional media, and e-mail chains.

Pre-Launch Outreach Strategies

After the system has gone through its initial public process and received input on station siting, system planners and program operators should expand their outreach approach to draw attention to the program before its launch date. The program's first few months of operations will be highly scrutinized by the media and elected officials, so it is critical that the program operators, public officials, and other partners reach as many members of the public as possible.

Municipalities have chosen to spread the word in different ways. Nearly every program has hosted a press event led by the Mayor, city council members, or other recognizable members of the government. Other programs take more unique approaches. Denver Mayor Bill Vidal drew attention to Denver B-Cycle by riding one of the bikes onto the Denver Nuggets court during half time. Members of a local bicycle club in Brisbane, Australia, used CityCycle bikes on annual bike road race, proving their durability.

Although the flashier approach may garner



Denver Mayor Bill Vidal rode a public bike onto the Denver Nuggets' court at half time to get the public excited about the program.
Source: Denver B-Cycle

more press attention, community-based approaches can provide a more personal atmosphere and quickly dispel the myth that bike share is just for tourists or people with higher incomes. Speaking at places of worship, community centers, neighborhood association meetings, and schools can get residents excited about the coming investments. Most urban universities include a brief talk about transportation options during new student and faculty orientation. These orientations are an excellent opportunity to let students know of the program launch.

No matter the forum, the speakers need to emphasize the affordability and convenience of the system. Instructions should be clear, concise, and explain how the system will serve the individual members of the audience.



Before launching the program, the City will frequently host press events featuring the Mayor and city council members.

Source: Denver B-Cycle

On-Going Education

Interacting with the public does not end with the initial public outreach process. Considering bike share programs are still new and unfamiliar to many, all programs in the United States have continued to engage new potential users long after implementation. Some common methods are carried out from the program office, including updates to Twitter and Facebook, maintaining an e-newsletter list, and writing up regular press releases to keep the media informed. Other initiatives require a bike share program employees to go to events in the community. Nashville B-Cycle, for instance, has set up demonstrations at major events, especially at biking and walking events. Denver B-Cycle has coordinated with the Denver Housing Authority to educate residents of an affordable transportation option available just outside their homes. NYCDOT set up informative exhibits in gallery spaces. Not only do these efforts help inform potential users, businesses, and other stakeholders, these efforts can help boost ridership.

Funding and Financing

For most programs, user revenue alone does not finance the initial capital in full or future phase expansion. A diverse funding strategy is necessary to ensure a long-term, sustainable bike share operation.

Bikeshare often operates as a public-private venture. Most successful bike share programs receive funding from a diversity of public and private sources, and each sector's participation strengthens the ability to leverage funding. Although frequently touted as a private market approach to transportation, bike share programs almost always require some public funding to launch and maintain the operation. More recently, private investment has shouldered much of the capital and operating investment as a way to leverage bike share's positive impact on social, environmental, and economic goals in their own public outreach campaigns. The private sector's willingness to contribute signals future success to potential program sponsors, the media, and the public.

Federal Funding Sources

Numerous federal agencies offer funding streams that programs across the country have used for capital and operating funds. These include the Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), and the U.S. Department of Energy (DOE).

Congestion Mitigation and Air Quality (CMAQ) Improvement Program.

Bike share funding from FHWA most frequently comes through the CMAQ Improvement Program. Recipients of these funds include government agencies and private, non-profit organizations, particularly in urban areas that do not meet National Ambient Air Quality Standards. As a non-attainment area, New Orleans receives funding for initiatives that reduce pollutants.

Moving Ahead for Progress in the 21st Century (MAP-21). The current federal transportation bill, MAP-21, includes a grant program for alternative transportation projects called the Transportation Alternatives Program (TAP). Because the grant program has just begun, only a handful of bike share programs have benefited from this revenue source. For example, Puget Sound Bike Share, an administrative non-profit, received a \$750,000 Transportation Alternatives grant administered through the Washington Department of



Roughly 80% of Capital Bikeshare's initial system launch and 75% of its expansion to Arlington was funded by CMAQ funds.
Source: Nelson\Nygaard



Boston Hubway received a CDC grant, which required an explanation of how the system would benefit public health through reducing inactivity.
Source: Nelson\Nygaard

Transportation. Of the federal revenue sources on the list, the Transportation Alternatives Program is one of the most flexible, but also one of the most competitive. Program sponsors will need to underscore the ways in which bike share will help achieve state and local goals.

Federal Transit Administration (FTA). The FTA offers an additional set of bike share funding sources. Bike share funding from FTA generally comes with the stipulation that the system must directly enhance transit service.

Centers for Disease Control and Prevention (CDC). The CDC's Division of Nutrition, Physical Activity, and Obesity cooperative agreements, Prevention and Public Health funds, and the Communities Putting Prevention to Work Program provided funding to help communities reduce obesity rates. Boston Hubway, Nashville B-Cycle, and San Antonio B-Cycle have received this grant by considering the public health benefits bike share brings to cities.

U.S. Department of Energy (DOE). Numerous bike share programs have benefited from DOE's Energy Efficiency and Conservation Block Grant program. The grant program's goal is to reduce fossil fuel emissions and reduce total energy use. These grants benefit projects that support these goals and also spur economic development. Denver B-Cycle and San Antonio B-Cycle received this grant after stipulating emissions reductions and potential vehicle miles traveled savings.

Private Foundations, Grants, and One-Time Gifts

Although public grants are more common revenue sources, private and institutional grants are small, but common elements of bike share funding.

The Robert Wood Johnson Foundation helped fund the planning of bike share programs and other bicycle initiatives. The Bristol-Myers Squibb Foundation, Lilly Endowment, Richard King Mellon Foundation, and the Ruth Mott Foundation helped fund bike projects and may provide a new source for bike share revenue. Companies such as REI have provided grants of less than \$50,000 on bike projects through the Bicycle Friendly Community Grants Program. Trek Bicycle has also given money to bicycle projects through the Bikes Belong Program. Private universities served by the system may also help pay for bike share programs. For instance, Nice Ride Minnesota received \$30,000 from Macalester College to help fund a station at their campus.

Other bike share programs have considered smaller private donations from individuals and small businesses. The City of Boulder launched a fundraising program that focused on small gifts of about \$20 to fund capital costs. Larger one-time gifts from institutions, charitable groups, and individuals may also generate sizable amounts of capital.



Boulder's bike share program receives funding from advertisements placed on the bicycle baskets.
Source: Nelson\Nygaard

Sponsorship and Advertising

Sponsorship and advertising is one of the primary funding sources used to cover capital and operating costs in systems across North America. Private companies or other organizations, such as financial groups or health insurance companies, have provided up to 100% of the capital costs for some programs. Sponsors raise the revenue to ensure the system is fully funded and also build relationships with other community partners to support and promote the system. Advertising, a mechanism frequently employed by sponsors or program operators to generate revenue, has appeared at kiosks, on billboards, on street furniture, and on the bicycles themselves. As opposed to sponsorship, companies that advertise through bike share infrastructure do not necessarily play a role in promoting or managing the system.

Implementation Approaches

Implementing a new program in a city brings a number of risks and challenges. Each city's experience is different, but following some guidelines developed from the success of other cities can prevent unnecessary obstacles and lead to a successful launch.

Phasing and Expansion

Many systems have neither the financial needs nor the community buy-in to launch a large program from the start. These cities consider pilot programs or incremental phasing when developing the system. Cities such as Nashville and Chattanooga have tested the waters first, beginning with 20-30 stations and fewer than 300 bikes. This enables the cities to weigh the benefits of the program in light of the specific community needs and goals. These communities

can first determine the demand for cycling and any social, environmental, or public health impacts before investing in a full-fledged program with more stations and bicycles.

The drawback to this approach is that many community members will not have convenient access to the system due to the limited number of stations. Low ridership rates and limited visibility citywide may bring some to question the program's worth and positive impact. For this reason, cities such as Minneapolis and Washington, DC, have taken a phasing approach with a larger system from the start. Beginning a program with as many as 150 stations and 1,500 bicycles provides convenient access to many neighborhoods and promotes higher ridership. Furthermore, placement at transit hubs and prominent commercial centers gives potential users greater visibility to the diversity of locations they can access using the system.

Regardless of the size of the initial investment, cities most commonly concentrate stations in denser neighborhoods and the urban core. This tends to result in high ridership rates and greater access to more people. Yet, the consequence of concentrating stations downtown is that only people who live or work downtown will have access to the program. Washington, Nashville, and other cities have opted for a more spaced-out network of stations. Even though the distances between stations are larger than they would have been with a more concentrated area, the stations are visible in more communities. As these communities grow familiar with bike share, they may push for a denser network. Later expansion can fill in the gaps.

Contractor Responsibility

Once a sponsor has chosen the organizational model, a clear allocation of work needs to be determined. Station siting can be a complicated process, especially in historic districts with strict sign codes. For each station the responsible party will need to consider ADA access, interference with private or public party, and the interests of surrounding properties. In addition to station siting, fundraising, public outreach, and marketing each involve key decision points. The party making the decision, whether it is the sponsor, operator, and/or non-profit coordinating the system, is determined months in advance.

Board of Directors

Cities that choose the non-profit bike share program models in the United States typically have a Board of Directors that deliberate over critical implementation decisions. Most boards include leaders from public agencies, bicycle advocacy organizations, and neighborhood and business associations. The board should include representatives from communities of different income levels, races, and ethnicities.

LESSONS LEARNED IN OTHER COMMUNITIES

The experience of peer cities has led to several lessons learned that may prove useful if New Orleans chooses to implement a bikeshare program. Below are some of the most critical:

Complement Transit

Bike share programs can support transit by either relieving overcrowded routes or providing access to underserved areas. The coordination of the system with transit passes or by placing stations at key transit hubs can facilitate a seamless integration into the existing transit network.

Foster a Vibrant Urban Environment

Bike share works best in compact, mixed-use environments. Orienting bike share to enhance the livability of these areas can help create vibrant urban centers.

Involve the Business Community

Bike share patrons often make trips they would not have otherwise and frequent the businesses surrounding stations. Involving the business community can help foster enthusiasm for the program and potentially facilitate the placement of stations on sidewalks and on-street parking spaces near businesses.

Consider the Mobility Needs of Visitors

A great place to live is also a great place to visit. Bike share helps visitors and locals alike access entertainment districts, parks, festivals and other amenities. Hotels have paid for stations to give their guests access to the system. Attracting 24-hour subscribers is a great way to boost revenue and reduce the carbon footprint of visitors.

Respond to Local Context

No two bike share systems are perfectly identical. Station locations, management structures, user policies, and even the bicycles and stations themselves respond to local demands, contexts and community priorities.

Consider Equity

Successful programs are those used by adults of different levels of income, races, ethnicities, ages, and abilities. Outreach efforts should consider this diversity. Additionally, stations located in neighborhoods of different incomes should have multiple language options and consider unbanked populations. Working with community groups focused on the equity challenge can help create a system for all and may lead to employment opportunities for underprivileged community members.

Build Community Partnerships

Bike share's numerous benefits have formed new partnerships in many cities. Public health organizations, banks, environmental agencies, health care providers, and insurance companies have sponsored systems. Universities have sponsored stations and partnered on research projects to enhance systems. Collaborating with various agencies, institutions, and community/faith based organizations can promote community buy-in.

Capitalize on Technology

Technology can improve both the development and operations of a bike share system. Updating the public using social media, receiving public input with interactive mapping techniques, and developing online surveys are ways to involve more of the public. Once a program has been implemented, developing a web interface for both computers and smart phones can help users plan their trips.

Choose Instructional Advertising Campaigns

Bike share has the potential to make bicycling trendy, but successful advertising efforts focus on how to use the system rather than making it cool. The instructions should be clear and simple, stressing the convenience of walking up to a station and riding away moments later.

Prepare for a Concerned Public

Bike share programs are still relatively new forms of transportation. Public concerns regarding helmet use, on-street infrastructure, parking, and equity will likely be raised at public meetings. Leaders prepared for questions on these issues can help alleviate the concerns.

Prepare for (and Utilize Bike Share during) Natural Disasters

Bike share can play an important mobility role in the event of a natural disaster. When Washington, D.C., was struck by a 5.8 magnitude earthquake in August 2011, congestion prevented people from reaching their destinations. Bike share users managed to navigate the traffic, however. In the hours immediately following the earthquake, bike share ridership levels rose to more than three times that of the previous day, suggesting that bike share prevented additional traffic congestion and mass transit overcrowding.¹⁸

The experience of Washington after the earthquake demonstrates that bike share may mitigate mobility concerns in the wake of natural disasters. Yet, because natural disasters are rare, not all programs are planned with natural disasters in mind. Brisbane, Australia, launched CityCycle in October 2010. The region's multi-year drought ended with monsoons that left many of the stations under six feet of water. In a city with as many low lying areas as New Orleans, it is critical to consider flooding levels because rising waters could prove costly to the system.

¹⁸ Active Transportation Alliance. Bikeshare in D.C. after the Earthquake
<http://www.activetrans.org/blog/barbcornew/bikeshare-dc-after-earthquake>

ORGANIZATIONAL STRUCTURE OPTIONS FOR NEW ORLEANS

Bike share programs across the United States have been formulated in a variety of ways—from their funding sources, to their management structures, to who operates the system and ultimately takes on financial risk and liability. As the City of New Orleans and the Regional Planning Commission (RPC) explore opportunities for bike share, assessing a range of bike share organizational structures highlights opportunities for funding, level of staff capacity and expertise, and other key decisions points such as financial risk and liability.

This section provides an overview of a range of organizational structures along with key characteristics that define each structure. The organizational structures summarized below include:

- Publicly-owned, privately-operated
- Non-profit owned and operated
- Administrative non-profit
- Privately-owned and operated
- Publicly-owned and operated
- Transit agency-owned, privately operated
- Separate operator and vendor

One organizational model common to European bike share systems—“Owned and operated as part of a street-furniture advertising contract”—will not be included for evaluation based on several key challenges. These include barriers presented by New Orleans’ local and historical sign codes, a cumbersome process that is too difficult to justify financial risk to potential advertisers, and a lack of proven experience providing sustainable funding in the United States.

The following characteristics will be used in a subsequent phase to help guide the evaluation of a bike share program in New Orleans and determine what organizational structure would work best given the local political environment, partners, and resources.

- **Financial Risk/Liability:** Bike share programs require a significant amount of capital investment (bikes and bike share stations) and come with a high level of liability (equipment safety, accidents, theft, etc.). Who takes on the financial risk and liability issues of the program will be a key decision factor for the City of New Orleans and RPC.

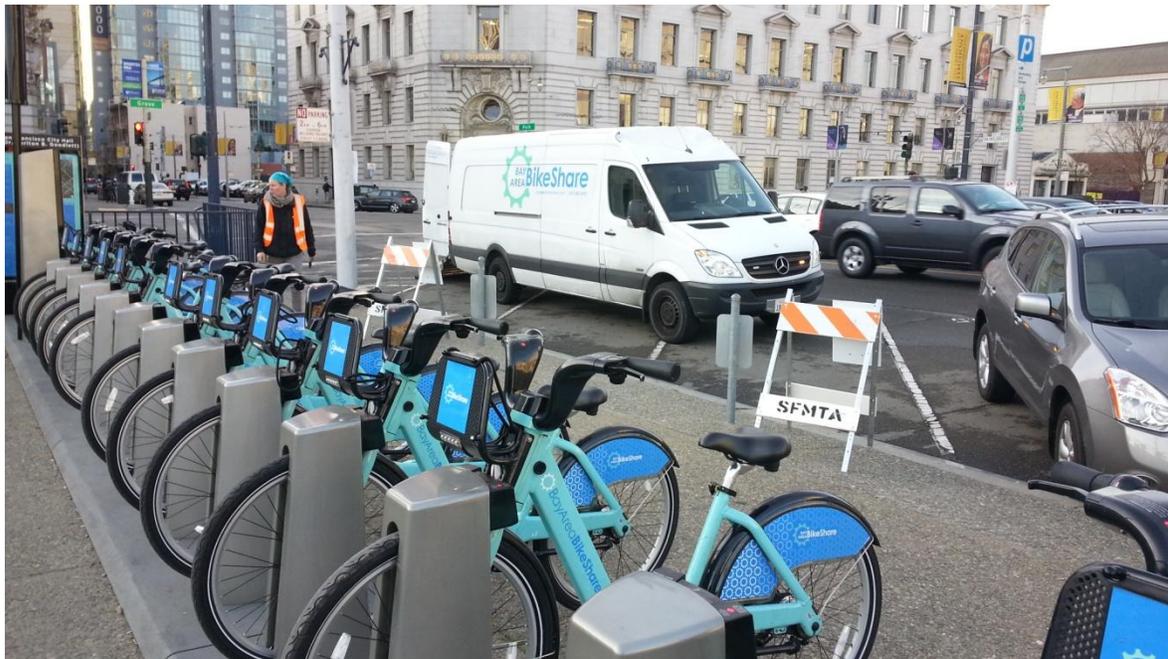


Boston’s Hubway system capitalizes on advertising revenue at each major bikeshare station. Due to New Orleans’ local and historical sign codes, this may be difficult to implement in New Orleans.

Source: NelsonNygaard

- **Funding Sources:** The organizational structure of the bike share program influences the funding sources available. Publicly-managed bike share programs, for example, do not have the ability to fundraise.
- **Operating Responsibility:** In any bike share system, there is an entity responsible for managing the overall operations of the system, including the customer service call center, remote system surveillance, and redistribution efforts, maintaining bicycle and station maintenance, and providing administrative services, marketing, fundraising. Deciding whether or not the City of New Orleans or RPC have the organizational capacity and expertise to manage and/or operate a bike share program will be a key decision factor.
- **Capital Ownership:** Who owns the capital property of a bike share program (i.e. bikes and bike stations) varies by organizational structure. Bike share programs require significant capital investment; who takes on this responsibility will need to be decided.
- **Separate Capital Vendor/Operator:** In some cases, the vendor who provides the bikes and bike share stations is different from the bike share operator. Bike share programs could benefit from this model since the vendor's mission to increase its profit margin is separated from the operator's mission which is to serve its customers.
- **Level of Staff Capacity:** Whether or not the City of New Orleans or RPC have the staff capacity, expertise, or desire to manage or operate the bike share system will play a role in deciding the appropriate organizational structure for New Orleans.

In the next phase of the project, the City of New Orleans/RPC project team will select up to three organizational structures for evaluation. Evaluation criteria will be established to further evaluate potential organizational models. Criteria will likely include the list of key characteristics above, in addition to criteria about expansion opportunities, and the ability for the organizational structure to serve traditionally underserved populations and geographies, among others.



In the Bay Area, Bay Area Bikeshare is owned through a partnership of local government agencies and operated by a private turnkey operator.

Source: Nelson\Nygaard

TYPES OF ORGANIZATIONAL STRUCTURES

Publically-owned, privately-operated

In this case, a city or region contracts with a private turnkey operator. The public entity managing the system often owns the capital (bikes, stations, etc.) and is responsible for establishing a sustainable funding strategy. Funding sources are limited to public grants, membership revenue, and advertising revenue. Decision-making is typically guided by an advisory committee, but is managed through a conventional municipal governance process. Financial risk is assumed by the public entity, while liability coverage is assumed by the private turnkey operator. Under this structure, the City of New Orleans and RPC would require limited staff involvement and expertise since the main operating functions would be assumed by the private operator. City or RPC staff would be required to manage the contract with the turnkey operator, secure startup funding, and manage/coordinate a decision-making committee internally.

Financial Risk/Liability: Financial risk assumed by public entity; turnkey operator takes on liability risk/coverage

Funding Sources: Public grants, membership revenue, advertising revenue depending on the jurisdiction¹⁹

Operating Responsibility: Private turnkey operator

Capital Ownership: Public entity

Separate Capital Vendor/Operator? No

Level of Staff Capacity: Medium

Capital Bikeshare, Washington D.C.

Capital Bikeshare is a publicly-owned and privately-operated system that launched in Washington D.C. in September 2010, serving Washington D.C.; Arlington County, VA; the city of Alexandria, VA; and Montgomery County, MD. The system is owned by these local governments and operated in partnership with Alta Bicycle Share. With over 300 stations and 2,500-plus bicycles, it is the second largest bike share system in the U.S. next to New York City's Citibike that launched in 2013.

The District's share of planning, implementation, and first-year operating costs was partially financed by \$6 million from the city-state's CMAQ allocation from the United States Department of Transportation. Arlington County's operating cost share of the plan was \$835,000 for the first year, funded by public contributions including a grant from the Virginia Department of Rail and Public Transportation as well as subsidies from Arlington County Transportation, Crystal City Business Improvement District, and the Potomac Yard Transportation Management Association. By year two of operation, the system expected membership revenue to generate 50% of the annual operating cost. Paid advertising also contributes revenue to the system.



Washington D.C.'s Capital Bikeshare program is owned by public partners and operated in partnership with a private turnkey operator, Alta Bike Share.

Source: Nelson\Nygaard

¹⁹ Advertising revenue may be difficult for a New Orleans bike share program due to its strict sign code.

Non-profit owned and operated

Under this model, a private, non-profit organization (either pre-existing or established specifically for bike share administration) manages, owns, and operates the bike share system. The non-profit organization manages a customer service call center, remote system surveillance, and redistribution efforts, maintaining bicycle and station maintenance, and providing administrative services, marketing, fundraising, etc. Decision-making is handled by a Board of Directors, which includes major private sector sponsors and elected leaders. The non-profit model potentially has a strong ability to leverage funding since it can retain both public funding and also fundraise. Under this structure, the City of New Orleans and RPC would require limited staff involvement and expertise since the main operating functions would be assumed by the private non-profit operator.

Financial Risk/Liability: Financial risk and liability assumed by the non-profit entity

Funding Sources: Fundraising opportunities, public grants, membership revenue, advertising revenue depending on the jurisdiction²⁰

Operating Responsibility: Non-profit

Capital Ownership: Non-profit

Separate Capital Vendor/Operator? No

Level of Staff Capacity: Low

Nice Ride Minnesota, Minneapolis and St. Paul, Minnesota

Nice Ride Minnesota is a statewide non-profit that owns and operates the Twin Cities bike share program. The non-profit was started by Minneapolis Mayor R.T. Rybak and the City of Lakes Nordic Ski Foundation in July 2008. The bike share system launched in the cities of Minneapolis and St. Paul in June 2010 and currently offers 1,550 bicycles for rent at 170 kiosks in both Minneapolis and St. Paul.

Startup funding (\$3.2 million) was secured primarily from Blue Cross and Blue Shield of Minnesota Center for Prevention, the City of Minneapolis, and Bike/Walk Twin Cities (a program funded by a federal transportation grant from the Non-motorized Transportation Pilot Program).



Nice Ride Minnesota is managed by a non-profit organization in the cities of St. Paul and Minneapolis, Minnesota.

Source: Nelson\Nygaard

²⁰ Advertising revenue may be difficult for a New Orleans bike share program due to its strict sign code.

Administrative non-profit

Another example of a non-profit structure is one that owns and administers the system but does not operate it. In this case, a non-profit is formed to oversee all duties, except for day-to-day operations. The only difference between this and the *non-profit owned and operated* model described above is that the administrative non-profit does not operate the system. Instead, the non-profit often leads all fundraising efforts, prepares purchase orders for bike share equipment, and markets bike share services. The non-profit contracts with a turnkey private operator to implement the system roll out and operate the system. That said, the non-profit can require the turnkey operator or a third party specialist to fulfill any of the administrative tasks as part of the service agreement. Under this structure, the City of New Orleans and RPC would require limited staff involvement and expertise since the main management and operating functions would be assumed by the non-profit and private operator. Strategic decision-making is handled by a Board of Directors under the non-profit.

Financial Risk/Liability: Financial risk and liability assumed by non-profit

Capital Ownership: Non-profit

Funding Sources: Fundraising opportunities, public grants, membership revenue, possible advertising revenue depending on the jurisdiction²¹

Separate Capital Vendor/Operator? No

Operating Responsibility: Private turnkey operator

Level of Staff Capacity: Low

Denver B-Cycle, Denver, Colorado

Denver B-Cycle launched in April 2010 with 500 bicycles and 40 stations centered around downtown, the University of Denver campus, and adjacent neighborhoods. The bike share system is managed by Denver Bike Sharing, a 501 c (3) nonprofit organization with a mission to promote health, quality of life, and preservation of the environment. The system is operated by Denver B-Cycle, a public bicycle sharing company formed in partnership between Trek Bicycle Corporation, Humana, and Crispin Porter + Bogusky based in Madison, Wisconsin.



Denver B-Cycle is managed by the nonprofit Denver Bike Sharing and operated by B-Cycle, a bike share operations company based out of Madison, Wisconsin.

Source: snippetandink.com

Denver B-Cycle received initial funding from a \$1 million donation from the Denver 2008 Convention Host Committee and other sponsors, including the Denver Business Improvement District. Today, the system is funded in large part by sponsorships, in addition to membership revenue and user charges.

²¹ Advertising revenue may be difficult for a New Orleans bike share program due to its strict sign code.

Privately-owned and operated

In this case, a private operator is procured to operate the system and maintains control of the capital. The private operator also takes ownership of fundraising, if necessary (i.e., in some cases, enough user revenue is generated to fund the system). A private operation offers public agencies less control of system size and growth; this depends largely on the private operator's ability to generate revenue and their strategy to turn a profit. This model offers public agencies limited requirement for staff time dedicated to bike share and completely transfers risk to the private operator. Examples of this operating model include Miami Beach DecoBike and New York City Citibike. The City of New York, however, is considering a greater role to ensure the system's long-term sustainability.

Financial Risk/Liability: Financial risk and liability assumed by private company

Capital Ownership: Private turnkey operator

Funding Sources: Fundraising opportunities, sponsorships, membership revenue, possible advertising revenue depending on the jurisdiction²²

Separate Capital Vendor/Operator? No

Operating Responsibility: Private turnkey operator

Level of Staff Capacity: Low

Citibike, New York City, New York

Citibike is owned and operated by NYC Bike Share, a private bike share company. Launched in 2013, the Citibike system is the largest in the country serving Manhattan and Brooklyn in New York City with 10,000 bikes and 600 stations. Citibike is funded entirely by sponsorship agreements and revenue from users. Although the New York Department of Transportation initiated the bike share program and helped facilitate an intensive public input process to identify bike station locations, no public funding is being used to operate or manage the system. The City did grant the right-of-way for the bicycle stations.



Citibike, the largest bike share program in the U.S., is owned and operated by a private bike share company.

Source: Nelson\Nygaard

²² Advertising revenue may be difficult for a New Orleans bike share program due to its strict sign code.

Transit agency owned, privately operated

In this case, the transit agency contracts with a private turnkey operator. The transit agency managing the system often owns the capital (bikes, stations, etc.) and is responsible for establishing a sustainable funding strategy. Funding sources are limited to public grants, membership revenue, and advertising revenue. Decision-making is typically guided by an advisory committee, and, depending on the structure of the transit agency, may be managed through a quasi-governance process. Financial risk is assumed by the transit agency, while liability coverage is assumed by the private turnkey operator. If deployed in New Orleans, RTA staff would be required to manage the contract with the turnkey operator, secure startup funding, and manage/coordinate a decision-making committee internally. This can be an appealing model given that the transit agency's top priority is to provide a useful transit service, rather than generate revenues.

This model is not currently being deployed in the U.S., however there are numerous European examples including Deutsche Bahn, the rail company in Germany, and Dutch Railways in the Netherlands.

Financial Risk/Liability: Financial risk assumed by transit agency; liability assumed by either private operator or transit agency

Capital Ownership: Transit agency

Funding Sources: Public grants, membership revenue, possible advertising revenue depending on the jurisdiction²³

Separate Capital Vendor/Operator? No

Operating Responsibility: Private turnkey operator

Level of Staff Capacity: Medium

Call a Bike, Germany

In numerous cities in Germany (Aachen, Berlin, Bonn, Frankfurt, and Cologne, among others), the rail company Deutsche Bahn partners with a national cycling organization to deploy bikeshare – called *Call a Bike*. *Call a Bike* is well integrated with public transit service. This bike share network is part of Deutsche Bahn's strategy to provide value added mobility services to its customers apart from pure rail transport and enable last mile service. The bicycles are not bound to a rack but can be left at the nearest crossing in a defined core area, as they have a lock mechanism installed in the bicycles themselves.



Call a Bike in Germany is funded by the rail company Deutsche Bahn and operated by a national cycling organization.

Source: Green Forward

²³ Advertising revenue may be difficult for a New Orleans bike share program due to its strict sign code.

Separate operator and vendor

In this case, bike share can be operated by a private company, non-profit, or public agency separately from the bike share vendor. This model is appealing because bike share vendors are typically for-profit and therefore, when also serving as the operator, manage the system with a goal to increase profit. By comparison, an operator who is not also the vendor can operate the system solely with the end customer in mind. This structure can ensure bike share is dispersed equitably throughout the city and customers are put first, not profit. Pittsburgh's nascent bike share system will be the first bike share programs in North America to utilize this arrangement (scheduled to launch in 2014).

Financial Risk/Liability: Financial risk and liability assumed by non-profit, private company, or the public

Funding Sources: Fundraising opportunities, public grants, membership revenue, possible advertising revenue depending on the jurisdiction²⁴ (depending on operator)

Operating Responsibility: Private or non-profit turnkey operator or public entity

Capital Ownership: Private turnkey operator

Separate Capital Vendor/Operator? Yes

Level of Staff Capacity: Low-High depending on operator

Publicly-owned and operated

In this case, the public agency—be it a city, county, regional government, transit agency, or state entity—procures and owns the bike share bikes, docking stations, and supporting equipment and manages the day-to-day operations of the system. This includes managing a customer service call center, remote system surveillance, and redistribution efforts, maintaining bicycle and station maintenance, and providing administrative services, marketing, fundraising, etc. This operating model has been used in European and Asian cities (most notably in Guangzhou China) due to their ability to secure greater public monies to support bike share as a core urban transportation service. This organizational structure would require significant staff dedication and expertise from the City of New Orleans and/or RPC, in addition to assuming all of the financial and liability risk. There are no North American examples.

Financial Risk/Liability: Financial risk and liability assumed by the public entity

Funding Sources: Public grants, membership revenue, possible advertising revenue depending on the jurisdiction²⁵

Operating Responsibility: Public entity

Capital Ownership: Public entity

Separate Capital Vendor/Operator? No

Level of Staff Capacity: High

²⁴ Advertising revenue may be difficult for a New Orleans bike share program due to its strict sign code.

²⁵ Advertising revenue may be difficult for a New Orleans bike share program due to its strict sign code.

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 New Orleans Regional Planning Commission

Figure 18 Summary of Bike share Organizational Structures

Organizational Structure	Financial Risk/Liability	Funding Sources	Operating Responsibility	Capital Ownership	Separate Capital Vendor/ Operator?	Level of Staff Capacity	Peer Example (s)
Publically-owned, privately operated	Financial risk assumed by public entity; turnkey operator takes on liability risk/coverage	Public grants, membership revenue, sponsorship, advertising revenue depending on the jurisdiction	Private turnkey operator	Public entity owns equipment	No	Medium	Washington D.C. (Capital Bikeshare) Boston, MA (Hubway)
Non-profit owned and operated	Financial risk assumed by the non-profit entity	Fundraising opportunities, public grants, membership revenue, advertising revenue depending on the jurisdiction	Non-profit	Non-profit	No	Low	Minneapolis, MN (Nice Ride Minnesota)
Administrative non-profit	Financial risk assumed by non-profit	Fundraising opportunities, public grants, membership revenue, possible advertising revenue depending on the jurisdiction	Private turnkey operator	Non-profit	No	Low	Denver, CO (Denver B-Cycle)
Privately-owned and operated	Financial risk assumed by private company	Fundraising opportunities, sponsorships, membership revenue, possible advertising revenue depending on the jurisdiction	Private turnkey operator	Private turnkey operator	No	Low	New York, NY (Citibike) Miami Beach, FL (DecoBike)

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New Orleans Regional Planning Commission

Organizational Structure	Financial Risk/Liability	Funding Sources	Operating Responsibility	Capital Ownership	Separate Capital Vendor/Operator?	Level of Staff Capacity	Peer Example (s)
Transit agency owned, privately operated	Financial risk assumed by transit agency	Public grants, membership revenue, advertising revenue depending on the jurisdiction	Private turnkey operator	Transit agency owns equipment	No	Medium	Germany (Call a Bike), the Netherlands (OV-fiets)
Separate operator and vendor	Financial risk assumed by non-profit, private company, or the public	Fundraising opportunities, public grants, membership revenue, possible advertising revenue depending on the jurisdiction	Private or non-profit turnkey operator or public entity	Private turnkey operator	Yes	Low-High depending on operator	Pittsburg, PA (possibly)
Publicly-owned and operated	Financial risk assumed by the public entity	Public grants, membership revenue, possible advertising revenue depending on the jurisdiction	Public entity	Public entity	No	High	Europe/Asia

SUPPLEMENT 1

Literature Review: Plans, Policies, and Codes

Supplement 1 considers the bike share feasibility in light of local plans, policies, and zoning code and identifies potential barriers to implementation. Paying due diligence to ensure compatibility with current policies and codes will help RPC and the City of New Orleans identify and overcome implementation barriers—guiding the City to a smooth and successful launch. More directly, this literature review informs bike share system planning, organizational assessment, and the implementation strategy of the overarching Feasibility Study. At the end of this Appendix, a compendium of policy and zoning detail is listed for the New Orleans Master Plan, the City’s Complete Streets policy, and sign code.

GUIDING PLANS, POLICIES, AND CODES

The New Orleans bike share program will need to support or adhere to existing plans, policies, and codes throughout the metropolitan area. This section highlights the planning and policy framework and discusses potential barriers that the system will have to overcome before implementation.

EPA Technical Assistance for Sustainable Communities: Building Blocks Report

New Orleans received a Building Block for Sustainable Communities technical assistance award from the U.S. Environmental Protection Agency (EPA) to conduct a public process identifying strategies and key actions for implementation of a bike share program. Findings from the workshop demonstrate that the community sees an opportunity for bike share to bolster access and equity. They determined that stations should be located in low-income communities in addition to the tourist centers, wealthier neighborhoods, and the central business district. Workshop participants also identified the need for bike share to work in harmony with the transit system. Bike share has the potential to enhance transit service if stations are offered at major transfer points, streetcar stops, end of transit routes, Union Passenger Terminal, cruise terminals, intercity bus stops, and at shopping centers that serve as transit hubs.

Next steps outlined in the report include identifying a funding source for the 20% local match, developing a business plan to determine the appropriate size of a phased approach, identifying a point person responsible for moving the concept forward, reaching out to the public to solicit input on station locations, and deciding on an ownership model for the system. This report recommends a starter system of about 20 stations, but programs tend to have a greater perception of success if more neighborhoods have access to the system at the launch date.

New Orleans 2030 Plan (2010)

The New Orleans 2030 Plan is the citywide comprehensive plan that will guide New Orleans’ growth for twenty years. Developing sustainable, more accessible communities with alternative transportation options underpins the economic, land use, environmental, and public health goals.

The plan’s ambitious bike goals include the implementation of a bike share system “with public bike kiosks throughout the city” by 2015. The bike share program will achieve this goal and others by spurring momentum to improve cycling conditions citywide. Bike share can also work in conjunction with other City goals, including spurring economic development, reducing rates of obesity, improving mobility, and mitigating vehicle emissions.

The momentum spurred by bike share in other cities has led to a rapid expansion of the on-street infrastructure. If this occurs in New Orleans, the program will help achieve the goals of the 2030 Plan to build more bike lanes, bike boulevards, and cycle tracks. Bike share may also help develop

programs that address enforcement, education, and encouragement of bicycling. Peer cities with bike programs have successfully carried out this goal through events organized by the program operators.

The 2030 Plan includes goals that promote sustainable development patterns, including compact, mixed-use developments. These goals explicitly state that the City should locate the denser developments near alternative transportation options. Bike share operates best in more compact areas, so placing docking stations in denser locations will both improve ridership and help the City achieve their sustainable transportation goals.

Complete Streets Policy Ordinance (2011)

The City of New Orleans passed a unanimous Complete Streets Ordinance requiring that all transportation improvements be planned, designed, and constructed to encourage walking, bicycling, and transit use. The ordinance aims to balance the needs of freight and motor vehicle mobility with non-motorized access. Bike share frequently spurs the development of bike infrastructure by generating momentum for bicycle improvements in the community. Bike share also contributes to pedestrian environments by providing wayfinding maps. In addition, in-street bike share docking stations can help reduce auto speeds in certain corridors by narrowing motorists' visual field—much like transit facilities like bus bulbouts.

New Orleans Metropolitan Bicycle and Pedestrian Plan (2005)

The Regional Planning Commission's 2005 bicycle and pedestrian plan differs from previous active transportation efforts in that it identifies potential for improvements on the existing street network rather than off street paths. The plan focuses on several "regional connector corridors" that have poor connectivity for bicyclists or are areas with high crash rates. Downtown New Orleans has a multitude of high stress connections, which the plan recommends improving through restriping and signage. Challenging bicycle connections on the Eastbank include Wisner Boulevard by New Orleans City Park, South Jefferson Davis Parkway through Mid-City, Nashville Avenue, Esplanade Avenue between City Park and the French Quarter, and St. Bernard Avenue. The plan does not recommend specific bicycle facilities for these high-traffic streets. Yet, these corridors and potential low stress, parallel street options continue to be critical connections among many of New Orleans' most important destinations, such as the French Quarter, the Central Business District, New Orleans City Park, the Garden District, and Audubon Park. Redesigning these streets and parallel street alternatives will ensure safe connectivity among bike share stations. The implementation of a bike share program may further highlight the needs for improving these connections, expediting the implementation of bike infrastructure.

Regional Planning Commission's Comprehensive Operational Analysis (2012)

The Regional Planning Commission initiated a Comprehensive Operational Analysis (COA) to collect primary travel demand data for transit users and to complete an assessment of how well current services were operating. The COA found that transit use has increased to the point that existing service levels in the network are insufficient to handle passenger demand in many corridors. Orleans Parish's Routes 62 and 64, which run from the Central Business District to West Lake Forest, have irregular, non-clockface headways. Routes 60, 64, and 94, all of which also run from the CBD to West Lake Forest, have circuitous and one-direction routings that lengthen passenger trips and walking distances to access service. Moreover, Route 94 has high demand and overcrowding issues from Read Boulevard & Chef Menteur Highway to Washington

Avenue & Broad Street. Bike share has alleviated transit overcrowding in other cities by shifting people to bicycles for trips shorter than three miles. This has helped improve transit travel time and average speed by reducing dwell time.

In Algiers, service is spread over many different corridors, but walkability, street connectivity, and neighborhood accessibility conditions continue to be a challenge for residents. Bike share may help mitigate some of these challenges by enabling transit users to more quickly and easily navigate the street network to reach the bus stops.

Access is a major issue system-wide, particularly in off-peak hours. More than 90% of transit riders walk to the transit stops. The system-wide average walk to the stops is about three blocks. Bike share has the potential to expand the catchment area for service lines if the bike docking stations are placed in coordination with transit stops. Bike share may play a critical role in developing better transit access in Algiers, where service is more infrequent and the stops are spaced at greater distances. With a 24-hour bike share system, transit users may be able to overcome existing challenges, including gaps in feeder service, difficult transfers, and bus lines with limited service hours. Bike share may prove particularly useful for future BRT corridors that have greater distances between stations relative to local buses.

Sign Code

Section 134 of the City Code states that any sign in the public right-of-way needs written consent from the City before construction. For each sign, a fee of \$125 will be levied to review the plan of the location or construction of a sign.

Section 164 of the City Code has more regulatory restriction on signage. The desire to preserve the character of New Orleans' historic neighborhoods has led to a strict sign code. Of the neighborhoods within Downtown New Orleans the French Quarter has the most stringent policies. The Vieux Carre Commission only permits signs that conform to the distinctive character of the district and prohibits the placement of signs in any locations that may conceal any architectural features or detail of any building. Signs must only advertise bona fide business conducted in or on the premises, and businesses may only place one sign per street face for each store. A maximum wattage of 75 watts is permitted, with one, steady incandescent floodlight allowed per sign face. All light sources must be concealed by hoods or any acceptable method of indirect lighting approved by the Vieux Carre Commission. Signs along Bourbon Street and Decatur Street are subject to additional regulations and must be approved by the Vieux Carre Commission.

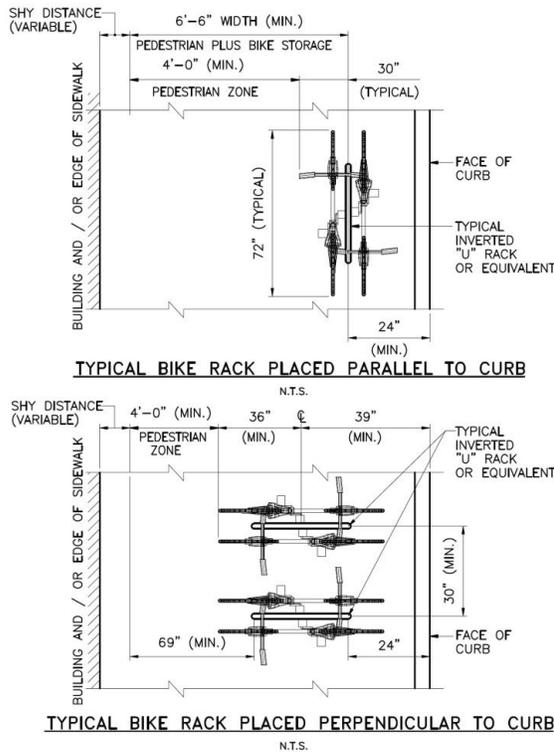
The sign restrictions outside of the French Quarter prohibit the placement of advertising upon a public street, sidewalk, alley, right-of-way, or curb unless the City provides written consent. Exceptions have been made for devices displaying newspapers, so long as the stands do not impeded vehicular or pedestrian traffic. Other exceptions include bus shelters, bus benches, and billboards. The City may make a similar exception for bike share docking stations or may expedite the permitting process through batch permitting. Although not noted in the design code, an opportunity to create advertising in coordination with tourist information and wayfinding may provide an opportunity to bypass some of the major barriers.

The sign code does not provide any clarification of the difference between sponsorship and advertising, but mobile advertising on taxi cabs, buses, streetcars, and bicycles is permitted throughout the city. This suggests that advertising on the bicycles themselves may not be an obstacle. Kiosk panels, however, may require special permits.

Parking Requirements

The development codes of some cities permit developers to reduce their parking minimums when developing sites that are located in transit-rich neighborhoods or have built-in travel demand management features. New Orleans code does not have such provisions but may consider adding parking credits to developers that include a bike share docking station on site.

Figure 19 Drawings for Bike Parking Facilities



Bike parking must maintain a four foot pedestrian zone.
 Source: City of New Orleans Department of Public Works

Convention and Visitors Bureau

More than nine million visitors stayed in New Orleans in 2012. Together they spent a total of \$6 billion and contributed to the 67.6% occupancy rate. As a major port for cruise ships, New Orleans received half a million visitors from cruise boats alone. In total, visitors booked more than 300,000 room nights in 2012.

The warm climate of New Orleans draws visitors year round. Major festivals help lengthen the tourist season as well. Mardi Gras draws close to a million people annually and smaller festivals, such as New Orleans Jazz and Heritage Festival and Essence Festival, attract thousands more. Bike share will help visitors navigate festivals, particularly Mardi Gras where parade routes complicate the transit environment.

Public Works' Standard Drawings for Pedestrian and Bicycle Facilities

The drawings for bike racks consider spacing of the pedestrian zone and distancing from fire hydrants, bus stop shelters, and other permanent objects. The drawings illustrate a minimum width of four feet for the pedestrian zone not including the shy distance. Bike racks are to be placed more than 24 inches from the face of the curb and maintain a total distance of 13 feet from fire hydrants, 15 feet from bus stop shelters, and three feet from other permanent objects. The standard drawings do not consider bike share stations and will need to be updated to determine design specifications for this kind of infrastructure. Assuming the same design principles apply to docking stations, placement of the stations will only work where the sidewalks are 12 feet wide, excluding the shy zone. This is enough space to accommodate the four-foot pedestrian zone, six-foot station, and two-foot buffer to the curb face.

New Orleans’ bike share program could also work with hotels to give visitors better access to destinations by bicycle. Hotels in some cities have sponsored stations to help attract patronage and ensure hotel guests have access to destinations and local amenities. Many of New Orleans’ destinations could be enhanced by offering visitors public bicycles. The historic districts, Audubon Park, and New Orleans City Park are some of the destinations visitors will enjoy seeing by bike and enable them to leave their car at the hotel.

Downtown and Economic Development Studies

The 2009 Downtown Development District’s Mobility and Parking Study conducted an existing conditions analysis of zoning, number of motor vehicle lanes, transit routes, bike facilities, on-street parking, and access to highways, public parks, and the waterfront. The purpose of this document was to improve circulation of all modes through the district. The document developed recommendations for traffic signals, crosswalks, curb design, wayfinding, and bicycle network.

Developing a bike share program is also listed among the key supportive strategies to mitigate some of the mobility issues within the district. Bike share will not only help spur the infrastructure necessary to make bicycling and walking safer, the stations themselves will help achieve the goals related to traffic calming in the district. Reducing excess travel lane widths is one of the key recommendations listed in the document. Like bus bulbouts and curb extension, in-street bike stations help lower traffic speeds by narrowing the visual field of motorists, causing them to drive at slower speeds.

Considering the challenges that come with advertising in the French Quarter, this report may be a critical component of gaining support among the historic commissions.

BIKE SHARE COMPATIBILITY ASSESSMENT

Bike share is consistent with the existing plans, policies, and code but to varying degrees. Some documents, such as the 2030 Plan, explicitly include bike share as one of the goals. The compatibility with other documents, such as the sign code, is less obvious. Figure 20 outlines the degree to which bike share can work within the existing planning and policy environment.

- ● ● Explicitly states bike share as critical to achieving a goal, extremely compatible
- ● No mention bike share but bike share would help achieve goals, some compatibility
- Bike share not mentioned and only tangential effect on goals, limited compatibility

Figure 20 Bike Share Compatibility Assessment

Plan, Policy, or Code	Compatibility Rating
EPA Technical Assistance for Sustainable Communities: Building Blocks Report	● ● ●
New Orleans 2030 Plan	● ● ●
Complete Streets Policy Ordinance	● ●

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Plan, Policy, or Code	Compatibility Rating
New Orleans Metropolitan Bicycle and Pedestrian Plan	● ●
Regional Planning Commission's Comprehensive Operational Analysis	● ●
Sign Code	●
Parking Requirements	●
Public Works' Standard Drawings for Pedestrian and Bicycle Facilities	● ●
Downtown and Economic Development Studies	● ● ●

Additional Policy and Code Detail

NEW ORLEANS 2030 PLAN

A Vision for Livability

- Vibrant neighborhoods
- Historic and cultural preservation that supports community
- New neighborhood centers at transit hubs
- Green infrastructure, parks, and greenways for neighborhoods and the whole city

A Vision for Opportunity

- A prosperous city with an entrepreneurial edge
- Alignment of job training and jobs for all skill levels
- A dynamic small business base
- 24-hour activity to support downtown's role as an economic driver

A Vision for Sustainability

- A resilient city
- A connected city of transportation choice
- A “green” city
- A city of excellent, cost-effective facilities and services

Transportation Goal 3: Roadways that integrate vehicle transportation with bicycling and walking.

3.H. Provide fixed infrastructure to further bicyclist safety and security and to encourage bicycling as an alternative mode of transportation.

1. Provide ample bike racks and/or lockers on public rights of way at key activity nodes.
2. Allow for the transformation of a limited number of on street, parallel vehicular parking spaces into on street bike rack/storage areas as demand or adjacent landowners if calls for it.
3. Allow for the transformation of a limited number of on street, parallel vehicular parking spaces into on street bike rack/storage areas as demand or adjacent landowners if calls for it.
4. Develop a public bike rental program, modeled on Paris' Velib and other successful programs, with public bike kiosks throughout the city.

Sustainable Systems Goal 3: A physical environment characterized by Smart Growth patterns of development.

3.B. Encourage the development and use of alternative forms of transportation.

COMPLETE STREETS POLICY

AN ORDINANCE to amend and re-ordain Article II of Chapter 146 of the Code of the City of New Orleans to establish a Complete Streets program for the City of New Orleans, to provide guiding principles and practices requiring that all transportation improvements are planned, designed and constructed to encourage walking, bicycling and transit use, while also promoting the full use of, and safe operations for all users of the City's transportation network.

COMPREHENSIVE ZONING ORDINANCE

Sec. 166-76. Definitions.

The following words, terms and phrases, when used in this article, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

Display includes erect, paint, repaint, place, replace, hang, rehang, repair, maintain, paint directly upon a building or other structure, inlay, imbed in or otherwise exhibit in public view.

Sign includes any symbol, device, image, poster, flag, banner, billboard, design or directional sign used for advertising purposes, whether painted upon, attached to, erected on or otherwise maintained on any premises, containing any words, letters or parts of letters, figures, numerals, phrases, sentences, emblems, devices, trade names or trademarks by which anything is made known, such as are used to designate an individual, a firm, an association, a corporation, a profession, a business or a commodity or product, which is visible from any public highway and is used to attract attention.

(Code 1956, § 65-17)

Cross reference— Definitions generally, § 1-2.

Sec. 166-77. General prohibition of miscellaneous signs.

The display of signs of a miscellaneous character visible from the public streets, highways and alleys within the Vieux Carre section of the city, except as otherwise provided in this article, and according to the rules and regulations herein provided for, is prohibited.

(Code 1956, § 65-18)

Sec. 166-78. No signs to be displayed in certain places.

No sign shall be displayed from the parapet or roofs of any buildings along either Decatur Street or French Market Place, both sides, from Esplanade Avenue to Ursuline Street or facing Ursuline Street from Decatur Street to the Mississippi River.

(Code 1956, § 65-19)

Sec. 166-79. Signs must conform to character of section.

In addition to the prohibitions contained in this article, approval of the display of a sign in the Vieux Carre section of the city shall be granted by the Vieux Carre Commission only when such

signs and the plans therefor, so far as they relate to the appearance, color, size, position, method of attachment, texture of materials and design, conform to the quaint and distinctive character of the section or do not injuriously affect it or impair the value to the community of those buildings having architectural or historical worth.

(Code 1956, § 65-20)

Sec. 166-80. Permit required for signs in certain area; exceptions.

No sign shall be displayed in the Vieux Carre unless a permit therefor shall first have been applied for to the Vieux Carre Commission and issued in accordance with [section 166-36](#), but no permit shall be required in case of a theatre or commercial establishment changing the bill of its acts and features or the nature of its commodities and wares and the prices thereof on established and approved frames, commonly known as "menu boards" or "menu boxes."

(Code 1956, § 65-21)

Sec. 166-81. What signs may advertise.

No sign of any character shall be displayed in the Vieux Carre unless such sign advertises a bona fide business conducted in or on the premises and, if it does do so, not exceeding 50 percent of the area of such sign may be used to advertise products or commodities actually sold on the premises.

(Code 1956, § 65-22)

Sec. 166-82. Signs no longer complying as to advertisements to be taken down.

Any sign displayed which no longer advertises a bona fide business conducted upon the premises shall, upon notification by the Vieux Carre Commission or its agent (who is hereby specifically authorized to so proceed), be taken down, removed or obliterated within five days after such notification and failure so to comply on the part of the owner, occupant, agent or person having the beneficial use of any building or premises upon which such sign may be found shall subject such person to the penalty provided in section 1-13.

(Code 1956, § 65-23)

Sec. 166-83. Only one sign per shop, etc.

One sign only shall be allowed per street face for each store, shop or bona fide place of business, and this sign shall be no larger than the maximum stipulated in this article, regardless of the amount of front footage.

(Code 1956, § 65-24)

Sec. 166-84. Signs not to be placed on balcony, fence, etc.

No sign shall be placed upon a balcony, gallery, canopy, shed, roof, door or window or placed in any manner whatsoever so as to disfigure or conceal any architectural feature or detail of any

building. No sign shall be displayed from any fence, wall or open lot unless it conforms in proportion to the allowable area and does not exceed the maximum.

(Code 1956, § 65-25)

Sec. 166-85. Length of permitted projection of signs.

No sign shall project more than 48 inches beyond the building line, except that for the purpose of illumination a hood may be used with not to exceed six inches additional projection.

(Code 1956, § 65-26)

Sec. 166-86. Surface area of signs.

Except in the Vieux Carre Entertainment District (see section 166-92), the surface area of any sign shall be in direct proportion to the amount of front footage of each store, shop or bona fide business and shall be as follows:

- (1) For single-faced or painted wall signs, attached flat against the wall, there shall be allowed 30 square inches of sign surface area to each foot of lot frontage.
- (2) For double-faced signs, suspended by brackets or arms perpendicularly from the wall of a building there shall be allowed 60 square inches of sign surface area to each running foot of lot frontage. The area of such a double-faced sign shall be taken to mean the sum of the areas of each face.
- (3) In no case shall the area of any one single-faced or painted wall sign exceed eight square feet, the maximum allowable size for such a sign.
- (4) In no case shall the area of any one single-faced or painted wall sign be less than two square feet, unless by special permission of the Vieux Carre Commission.
- (5) In no case shall the area of any one double-faced sign exceed a total for both sides of 16 square feet, the maximum allowable size for such sign.
- (6) In no case shall the area of any one double-faced sign be less than four square feet, unless by special permission of the commission.
- (7) In the case where two or more businesses are conducted on the premises of a single ownership having a front footage of 25 feet or less, the allowable sign area shall be increased by one and one-half times except in a specialty urban marketplace.

(Code 1956, § 65-27; M.C.S., Ord. No. 18,389, § 1, 8-21-97)

Sec. 166-87. Illuminated signs generally.

Illuminated signs may be illuminated only by steady incandescent floodlight, one per sign face, with a maximum wattage of 75 watts, and all such light sources shall be concealed:

- (1) By hoods; or
- (2) By any acceptable method of indirect lighting approved by the Vieux Carre Commission.

(Code 1956, § 65-28)

Sec. 166-88. Building code applicable to signs.

All signs under this article shall be further governed by the existing regulations of the building code of the city which are not in conflict with this article.

(Code 1956, § 65-30)

Sec. 166-89. Applications for signs to be submitted to commission.

All applications for permits to display signs within the Vieux Carre Section of the city shall be submitted to the Vieux Carre Commission for approval before a permit therefor may be issued in conformity with section 166-36.

(Code 1956, § 65-31)

Sec. 166-90. Form of application to display signs; accompanying drawings.

Application for a permit to display signs in the Vieux Carre Section of the city shall be made to the commission upon forms furnished by the commission. Such an application shall also be accompanied by sketches and drawings showing details of construction and foundation when required by the building code of the city and shall delineate the size, shape, design, coloring, lighting and position in relation to the building from or upon which it shall be displayed.

(Code 1956, § 65-32)

Sec. 166-91. Violating signs, etc., to be removed.

Any sign or exterior illumination of walls, exteriors, roofs or appurtenances of buildings displayed contrary to the provision of this article shall be removed.

(Code 1956, § 65-33)

Sec. 166-92. Bourbon Street, Vieux Carre Entertainment District; special sign regulations.

All provisions of this chapter not in conflict with this section shall apply to the Bourbon Street, Vieux Carre Entertainment District which is defined as those buildings which are situated on property fronting on Bourbon Street from the downtown side of Iberville Street to the uptown side of St. Ann Street. The following special provisions shall also apply to this district only and shall take precedence over any other conflicting provisions of this Code. In no case should the size of any sign interfere with the integrity of the buildings to which the sign is attached. Location and size of all signs are subject to prior approval by the Vieux Carre Commission.

(1) Permitted signs.

- a. Each place of business shall be allowed to erect one category sign and one inventory sign.

- b. One category sign, identifying the category of business being advertised, may be erected for each business operated on the premises where public space is provided immediately behind the facade of the premises.
1. Category signs which are single-faced flat signs must be attached to, erected parallel to the face of, or painted on the facade of the building. Such sign shall not cover any window, door or other architectural detail.
 2. Category signs may be double-faced signs with two faces back-to-back the angle between which is no greater than 90 degrees and the space between which is no greater than 18 inches.
- c. Each business shall be allowed one inventory sign which shall be a single-faced flat sign no greater than two square feet which shall advertise the products, services, and/or prices of the business. No more than 30 square inches may be used to identify the name or type of the business.

(2) *Allowable sign area.* The formula specified below describes the maximum sign areas which may be permitted for category signs provided such sign areas are not deemed inappropriate for specific applications by the Vieux Carre Commission:

- a. The allowable sign area shall be computed at eight percent of the public space area of the Bourbon Street facade defined as the height times the base. Height is defined as the distance between the floor and ceiling where they intersect the Bourbon Street facade. Base is defined as the linear footage fronting on Bourbon Street. Thus, height times base times eight percent equals the allowable sign area.
- b. The only portion of the Bourbon Street facade of any building that may be used to calculate the sign area is that portion immediately behind the front facade used to invite the occupancy of the public customer. The warehouse, storage, office and similar ancillary uses of space as well as halls, stairways, and other common passages may not be used to calculate the Bourbon Street facade.
- c. Business operations at upper floors shall not consider any doorway or other access at the street level as part of the area of the Bourbon Street facade.
- d. The area of double-faced signs shall be calculated as provided for in section 166-86. However in no case shall the category sign for any business be greater than 50 square feet if a double-faced sign or 25 square feet if a single-faced flat sign.

(3) *Limitations of display.* No signs whatsoever shall be erected above the first floor level of any building. Category and inventory signs of businesses other than those operated on the first floor fronting on Bourbon Street may erect allowable signs at the doorway, carriageway or other ground floor access to the business premises.

(4) *Termination of legally nonconforming signs.* Any sign is legally nonconforming which was lawful under the provisions of any prior zoning ordinance or lawful by operation of law, such as prescription, but does not conform to the limitations of this section. Such signs may be displayed and maintained for no longer than three years after the effective date of this section, provided that the burden of establishing a sign to be legally nonconforming rests entirely with the person claiming such status for a sign except that the right to display and maintain any legal nonconforming sign shall terminate and the sign shall be subject to removal by the Vieux Carre Commission if any of the following conditions occur:

- a. Discontinuance of the business that a sign pertains to; or
 - b. If sign is damaged, destroyed or becomes obsolete for any cause whatsoever including acts of God.
- (5) *Allowable illumination.* Self-illuminating nonflashing neon shall be permitted when such signs meet all the additional requirements of this section.