



# Metro Hartford Region Bike Share Plan

**Executive Summary**  
June 2014



## Background

### About the Plan

The metropolitan Hartford region is benefiting from significant transit improvements. The largest of these investments, the CTfastrak bus rapid transit (BRT) system and the New Haven-Hartford-Springfield rail program, promise to bring new transportation options and enhanced mobility to many of the region's residents. The concept of bike share was initially explored by study partners as a means to leverage these transit investments by providing improved connections to CTfastrak and rail stations, as well as enhancing mobility through neighborhoods, encouraging physical activity, and helping support the region's economic vitality.

This study examines the feasibility of bike share across an extensive geographic area stretching south from the Massachusetts state border to the City of Waterbury. The purpose of the plan is twofold: to determine if and where bike share makes sense within the Hartford region and to develop a blueprint for moving forward and implementing bike share.

### Regional Oversight

This plan is a true regional effort led by the Capitol Region Council of Governments (CROG) and the Greater Hartford Transit District (GHTD), with additional funding support from the Central Connecticut Regional Planning Agency (CCRPA), the City of Hartford, the City of New Britain, the Council of Governments of the Central Naugatuck Valley (COGCNV) and the Connecticut Department of Transportation. In addition to the plan's funding partners, an advisory committee also included representatives from public agencies, regional institutions, and the private sector. The committee was heavily involved in helping guide the plan's development and met three times throughout the course of the study to provide input, review analysis, and make decisions about elements of the plan. This plan is a true collaborative effort, reflecting the involvement, expertise, and buy-in of a broad cross-section of agencies and organizations.



Capital Bikeshare in Washington, DC

## What is Bike Share?

Bike share is bicycle based transit. Bike share systems allow users to access a fleet of bicycles for short-term use. Systems are designed for one-way journeys, allowing a rider to pick up a bike in one place and return it somewhere else in the system. The system is available on-demand, allowing users to go where they want, when they want. Most bike share systems are based around stations/hubs, locations where bikes must be locked up at the end of their journey.

## Where Does Bike Sharing Work?

More than 30 communities in the United States currently have bike share programs with new systems being launched every year. Many of the best known bike share systems in the country are located in large cities like New York (CitiBike), Chicago (Divy), Boston (Hubway), and Washington DC (Capital Bikeshare). Increasingly however, bike share systems are opening up in communities of many sizes. Bike share systems have popped up on college campuses such as at Yale University; in smaller cities such as Greenville, SC; and in the suburban areas of places like the San Francisco Bay Area and the Washington DC region.

Grassroots bike share programs such as Simsbury Free Bike already operate within the Metro Hartford region. Some of the key factors that lead to bike share success are high bike share station density, mixed use dense development, interconnected street networks and a high propensity to bike and walk.

## Why Bikeshare?

Bike share offers a unique opportunity to provide a physically active form of public transportation that integrates with and supports Hartford's growing transit and rail system. For the highly educated and mobile workforce Hartford's economy depends on, bike share is an attractive amenity that many peer cities already offer. In cities like Washington, DC, hotels have promoted access to bike share as a means to attract guests, and studies show that proximity to bike share stations can generate retail activity. Bike share serves a key mobility need that makes going zero-car or car-light easier; in a multi-city study, 40 percent of bike share users reported driving less often since joining. From a health perspective, bike share promotes physical activity and new systems tend to have a multiplier effect on overall cycling rates in the community. Bike share can provide needed mobility to individuals, making it easier to get around without a car. Finally bike share is one of the greenest forms of transportation as biking creates no emissions and bike share equipment is largely solar powered.

**Bike Share Systems in Operation or Under-Consideration in North America**



**Deco Bikes in Miami Beach, FL**

## Goals for Bike Share in the Region

Bike share works differently in different communities. The feasibility of bike share is driven by a community's goals (as well as its financial capacity). Some communities have successfully established systems that largely serve tourists. Other bike share systems aim at promoting physical activity and improving public health, with less of an emphasis on high ridership. Finally communities large and small have approached bike share as a mode of public transportation, striving to create systems that expand mobility for users.

In the Metro Hartford region, plan stakeholders identified four goals and a series of objectives that guided the development of the plan.



Social Bikes Pilot in Hoboken, NJ

### Program Goals and Objectives

Goal	Objectives
<b>Reduce Single Occupancy Vehicle Trips:</b> Promote multi-modal transportation, including biking, walking, and public transportation.	Leverage bike share to improve access to public transit, especially to CTfastrak stations.
	Ensure bike share is cost competitive compared to other modes.
	Ensure bike share is a safe and convenient mode for users.
<b>Regional Mobility:</b> Increase personal mobility in the Hartford Region, providing people a better way to access destinations throughout the region.	Maximize the number of destinations one can reach, providing enhanced connectivity to work, leisure, and home.
	Leverage bike share to better link communities to recreation and cultural institutions.
	Develop a framework for bike share that can be scaled to a regional level.
<b>Regional Livability:</b> Develop an innovative transportation system that improves the region's livability and economic competitiveness	Leverage bike share as an amenity to attract business investment and tourism to the region.
	Utilize bike share as a tool to promote an active lifestyle.
	Develop a system that equitably serves all users.
<b>Financial Sustainability:</b> Create a system that is financially sustainable, transparently operated, and accountable	Develop a bike share system that is cost effective to the public.
	Plan to ensure sustainable funding for system growth and maintenance.
	Ensure transparency to bike share operations, including the clear communication of performance and effectiveness to the public.



B-Cycle in Charlotte, NC

## Market Analysis

A market analysis was conducted to identify feasible sub-markets for bike share in the region. The analysis included the development of a bike share propensity map that uses a number of key indicators to determine which areas of the region, relative to the region as a whole, have the greatest predilection for bike share usage. This analysis allowed the study team to identify 10 opportunity areas for bike share which were then analyzed in greater detail.

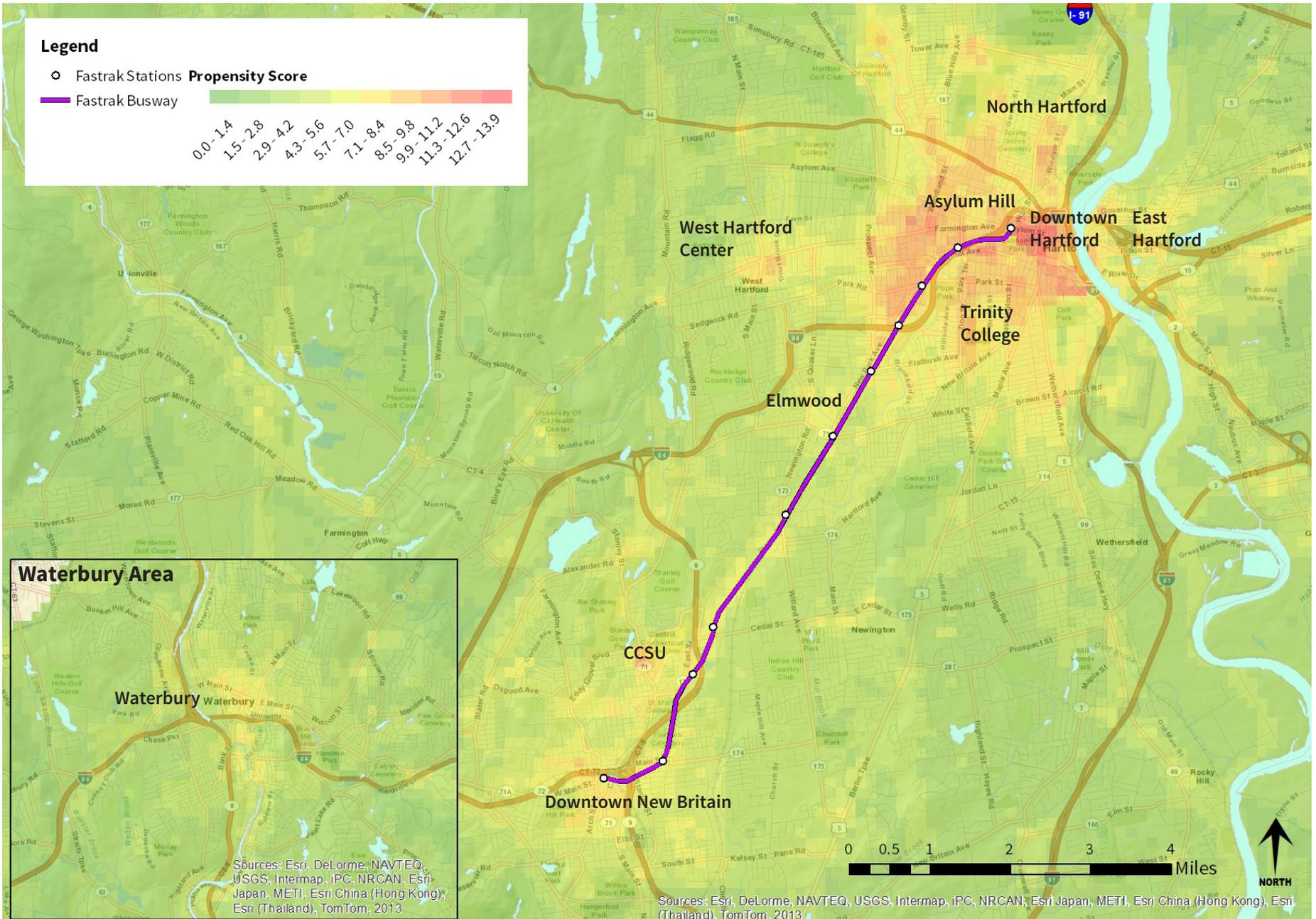
Bike share faces a number of challenges and opportunities in the region. The Metro Hartford Region benefits from being built around historic centers with high concentrations of jobs and housing. Many places in the region, notably Hartford, have high concentrations of zero-car households, suggesting that bike share could serve an existing mobility need. The region also features expanding bicycle infrastructure, including off-road trails and new bike lanes. Finally the opening of CTfastrak will create a core transit corridor which bike share can build out from, providing last mile connections for riders from transit to a destination.

At the same time, the Metro Hartford Region is not without challenges. The region's multiple town centers means that a regional system would be spread across a wide geographic area, reducing the network benefits of having a more concentrated system. The region is not as strong as other mid-sized cities and regions in which bike share exists in two major market segments that help drive bike share ridership: tourists and college students. Although college student presence in downtown Hartford will grow with the move of the UConn Greater Hartford campus to downtown, the region's student population is highly dispersed. While places like the City of Hartford and New Britain feature the population densities necessary for success, the high proportion of low-income and unbanked residents present a marketing and equity challenge to a potential bike share system. Finally, the region does not have a strong existing linked network of bicycle lanes and paths, a critical feature for attracting bike share users, who tend to be less experienced cyclists.

Overall the market analysis found that bike share is most feasible in the City of Hartford and adjacent areas in West Hartford and East Hartford. Additional opportunities exist for satellite locations around certain CTfastrak stations, in New Britain, and in Waterbury.



Paris's Successful Vélib' System Inspired Modern Bike Share in North America



Regional Bike Share Propensity Map (Higher Score = Greater Propensity)

## System Concept and Phasing

The plan proposes a regional bike share system that, upon full-implementation, includes multiple clusters of bike share stations in Hartford, West Hartford, East Hartford, Newington, New Britain, and Waterbury. The final system concept reflects the results of the market study, goals and objectives, and stakeholder feedback.

The first phase of the system, Phase 1A, begins with a 10 station pilot in Central Hartford, the area of the region that shows the most promise for bike share. This initial system will provide new transportation options for downtown workers and residents and provide a last-mile connection to local bus, CTfastrak, and rail service.

The plan recommends a one-year assessment period before expanding the system with 24 stations into surrounding neighborhoods in Hartford and limited locations in

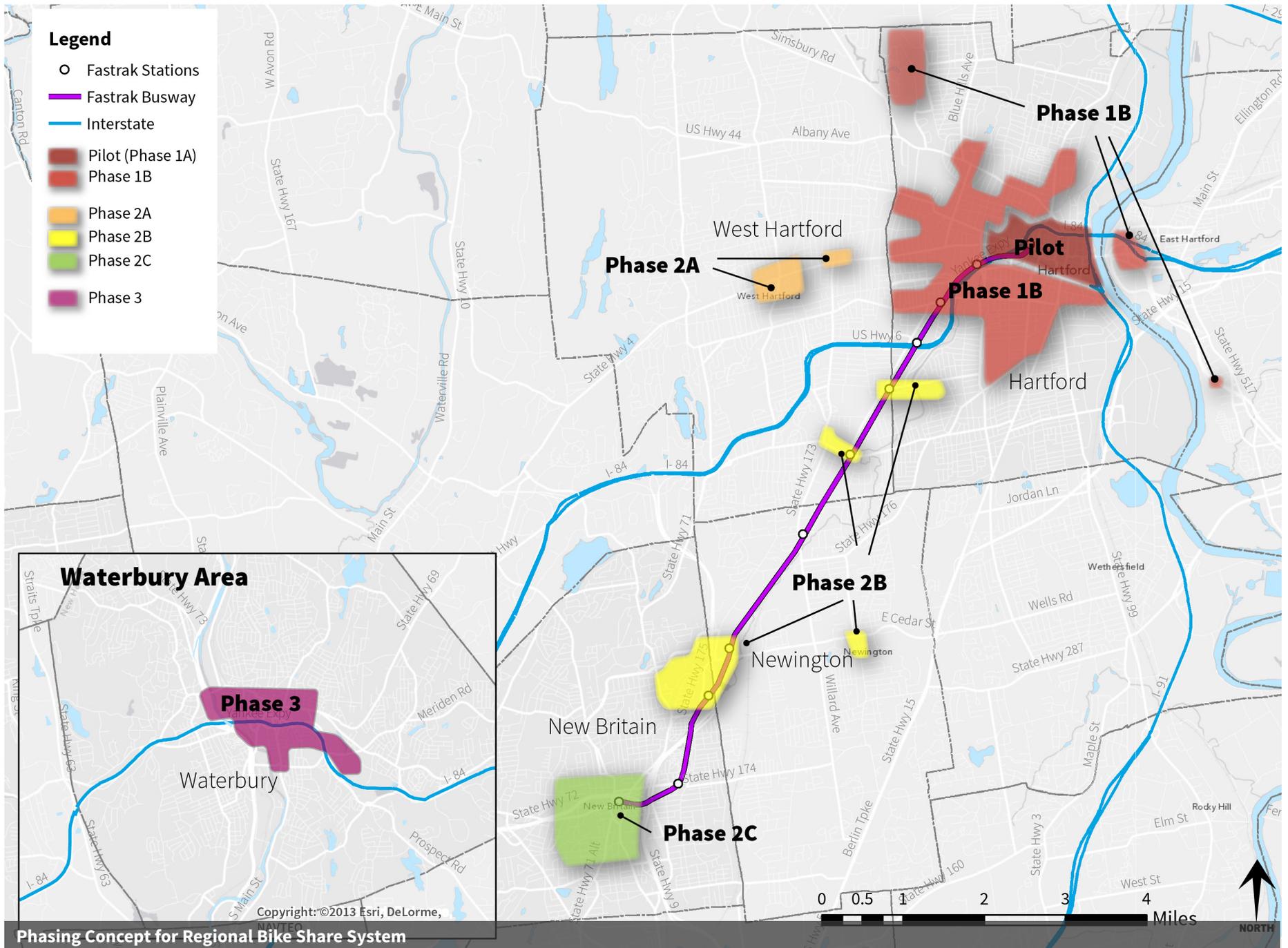
East Hartford (Phase 1B). This 34-station core system will include not only downtown, but dense urban neighborhoods, major parks, commercial corridors, Hartford's main hospitals, three college campuses, and multiple CTfastrak stations.

The second phase of the bike share program would begin in year four and expands bike share into multiple jurisdictions in the region. Phase 2 is comprised of three sub-phases (2A, 2B, 2C) which can be implemented in any order. This phase will address the desire to create a true regional bike share system that enhances connections to CTfastrak. Fourteen bike share stations in total will be located in West Hartford, around select suburban CTfastrak stations, and in central New Britain.

Finally, a third phase creates a seven-station satellite bike share system in downtown Waterbury. This phase will likely be implemented after the completion of the Naugatuck River Greenway and waterfront revitalization efforts currently underway. The build-out of all three phases is projected to span at least six years.

Tulsa Townies - North America's First Bike Share Program





Phasing Concept for Regional Bike Share System

## Business Model

### Operations and Ownership

The Metro Hartford Region's bike share system will be a joint collaboration between local jurisdictions, private-sector partners, and regional agencies. The system will be owned by a regional public agency, most likely the Capitol Region Council of Governments (CRCOG) or the Greater Hartford Transit District (GHTD).

Day to day operations will be contracted out to a private vendor or team of vendors, similar to how many other bike share programs are operated. Local jurisdictions will play a key role in the planning and oversight of the system.

Finally, the program will likely rely on multiple non-governmental partners for financial and promotional support. This regional ownership structure was selected as it will allow for a seamless multi-jurisdictional system that can easily scale-up to include additional communities in the program.

### Funding

No specific funding has currently been identified for the Metro Hartford Bike Share program. The system will likely rely on multiple funding sources to support the system, including:

- User and advertising revenue;
- Public-sector grants;
- Local funding contributions;
- Sponsorships; and
- Other private-sector fundraising.

### Technology

Bike share technology is quickly evolving, and in the last few years the industry has seen the emergence of so-called "smart-bike" systems that are lower cost than traditional dock-based bike share systems. The study team recommends that the region explore the feasibility of both kinds of technology. Dock-based systems have proven success in dozens of cities across the country. Smart-bike systems are much less common, but a number of cities in North America are planning to open systems with this technology in the next 12 months.

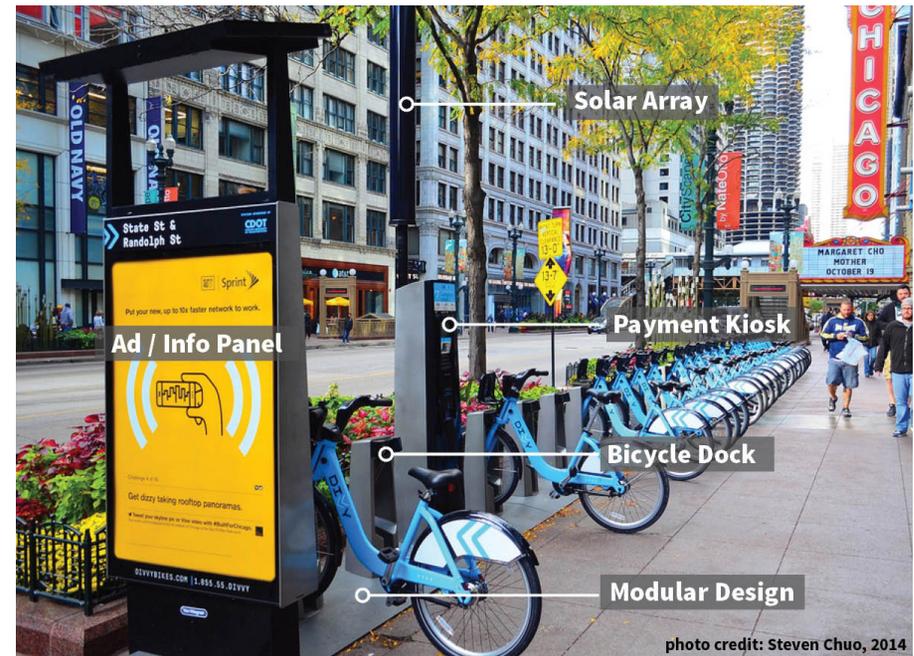


photo credit: Steven Chuo, 2014

Dock-Based System ↑

↓ Smart-Bike System



photo credit: co.EXIST 2012

# Cost and Ridership Estimates

## Capital Costs

The program’s capital costs will vary depending on the type of bike share technology selected. The low-end estimate reflects the cost of developing a smart-bike based system with simplified stations, while the high-end costs reflect the estimated cost of developing a dock-based bike share system. In addition to these capital costs, the system will have to fund replacement equipment over the long-term. These costs are expected to be negligible during the first five years of the program but will grow substantially over time. Annual equipment replacement costs will peak over a 15 year period between approximately \$440,000 and \$750,000 depending on the type of technology chosen.

### Estimated Capital Costs (Low to High Range)

	Pilot Phase (1A)	Phase 1B	Phase 2	Phase 3	Total
<b>Stations</b>	10	24	14	7	55
<b>Bikes</b>	75	132	77	38	322
<b>Low -End Capital Costs</b>	\$356,000	\$635,000	\$395,000	\$177,000	\$1,563,000
<b>High-End Capital Costs</b>	\$504,000	\$1,108,000	\$690,000	\$309,000	\$2,611,000

## Operating Costs

The system’s operating costs are anticipated to grow over time as the system expands. The cost recovery from advertising and user revenue will be lowest in the program’s pilot year, growing to an anticipated maximum of 34% of costs at the completion of Phase 1, and then declining slightly with the completion of Phases 2 and 3. The initial growth in cost recovery reflects the low ridership forecast in the system’s first year with ridership growing over time. After the completion of Phase 1, new expansion will occur in lower-demand areas, resulting in a slight decline in the recovery ratio.

### Annual Operating Costs by Phase Year of Completion

	Pilot (Year 1)	Phase 1 (Year 3)	Phase 1 & 2 (Year 5)	All Phases (Year 6)
<b>Usage</b>				
Ridership	13,800	40,000	55,900	65,000
Memberships Purchased	3,270	9,530	12,830	14,950
<b>Revenue</b>				
Fees & Memberships	\$49,000	\$155,000	\$211,000	\$245,000
Advertising	\$10,000	\$37,000	\$53,000	\$64,000
Total	\$59,000	\$192,000	\$264,000	\$309,000
<b>Operating Costs</b>				
Daily Operations	\$139,000	\$407,000	\$587,000	\$690,000
Administrative	\$58,000	\$93,000	\$128,000	\$159,000
Marketing	\$19,000	\$57,000	\$82,000	\$96,000
Total	\$216,000	\$557,000	\$797,000	\$945,000
<b>Fundraising Shortfall</b>				
Cost Recovery	27%	34%	33%	33%
Subsidy Needed	-\$157,000	-\$365,000	-\$533,000	-\$636,000

## Next Steps

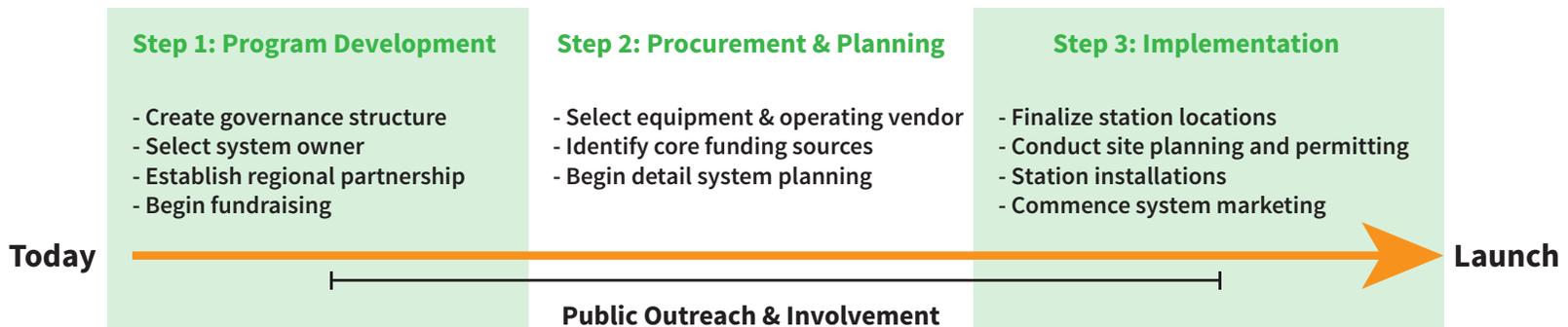
Getting a bike share system from concept to reality will require extensive work by the system owner and its partner agencies. Multiple steps will have to happen in tandem, from securing funding to developing a governing structure, in order to start up a bike share system. This plan provides a blueprint for a Metro Hartford Region bike share system; however the system’s true feasibility will be determined over the next few years as funding is identified and the system begins operation. Bike share in the Metro Hartford Region, like in most communities in the United States, will require on-going support to fund capital and operations. The system will depend on a strong commitment by participating jurisdictions, regional agencies, private-sector partners, and the public. Before any system is launched, extensive public consultation will have to occur to ensure the system is designed to best meet the needs of the region’s communities.

This plan outlines a truly regional bike share system. If implemented, the Metro Hartford Region’s bike share system would be a pioneer; few systems today have a regional scope as ambitious as what is proposed for Metro Hartford. The plan promises to strengthen the region’s transit network and expand mobility options for

tens of thousands of residents. In developing this system the region will have to work to overcome critical obstacles to the system’s success, including barriers to use for low-income riders, an important user group identified by the advisory committee. Bicycle infrastructure and cycling connections will need to improve, especially links between the region’s towns and connections to CTfastrak stations. Finally, marketing and education will be critical components in bike share’s success; within the region, bicycling is still not perceived by many as a means of transportation, and outreach, along with infrastructure improvements, will be necessary to promote biking as a safe transportation alternative.

The Advisory Committee believes it is worthwhile to work through these challenges to create a regional bike share system. Bike share could be transformative for the Hartford region. It provides a community amenity that will help make the region more attractive to young and highly-mobile talent. It promises to improve mobility, expanding transportation options and making the region less car dependent. Bike share is poised to benefit a wide range of users, from downtown office workers trying to make a cross-town appointment, to neighborhood residents trying to access employment, retail, services and recreation. For those who cannot or do not drive, bike share opens up new way access the economy and fills critical gaps in the existing transit system. Bike share, like the region’s other major transit investments, will help create a more sustainable and livable Metro Hartford Region.

### Steps to Launch





Chicago's Divvy - One of the Many All-Year Bike Share Systems in Cold Climates

