



BIKE-SHARE

OPPORTUNITIES IN NEW YORK CITY



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01 Executive Summary & Major Findings



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EXECUTIVE SUMMARY

Bike-share programs represent a unique opportunity for the City of New York to re-envision transportation within the urban sphere. As a transportation system, bike-shares are ideally designed for densely populated cities like New York. Distances between many major destinations are small and almost 50% of New York's workforce lives within a reasonable bicycling distance (less than 5 miles) of their place of work. Importantly, bike-shares offer immediate transportation solutions as they can be built, installed and open for business in months rather than years. Bike-share programs offer options for economic growth and job creation, as well as providing considerable health benefits. Furthermore, a New York City bike-share program could help to further New York's image as an innovative "green" leader.

This report, "Bike-Share Opportunities in New York City," is a feasibility study designed to consider various bike-share models and assess their potential for New York City. Analyses include a summary of existing bicycling conditions in New York, estimates regarding the number of bicyclists and the number of New Yorkers who might use a bike-share program were it to be available, and a discussion of the funding mechanisms and procurement structures currently available for a bike-share program. In addition, "back of the envelope" estimates for the costs and revenues, based on a range of uptake assumptions (3%, 6% and 9%), are included. Recommendations for the implementation of a New York City bike-share are also discussed, including suggested program size and phasing, pilot programs, safety, fees and theft reduction.

The growth of bike-share programs in the past few years has been explosive. Typified by successful and influential bike-share programs like Velib' in Paris (20,600 bicycles) and Bicing in Barcelona (6,000 bicycles), bike-share programs are being introduced in major cities throughout Europe, North America and Asia. In China, the Hangzhou Public Bicycle System (10,000 bicycles) opened in May 2008 and may expand to as many as 50,000 bicycles. Washington DC opened a small program (120 bicycles) in August 2008 and has plans for expansion to 500 bicycles. Montreal will open Bixi, its bike-share program (5,000 bicycles), in the spring of 2009. London plans to unveil its bike-share program (6,000 bicycles) by 2010. Boston and Minneapolis have recently released RFPs for their bike-share programs (1,500 and 1,000 bicycles respectively), scheduled to open in 2010. Denver, San Francisco, Chicago, Philadelphia and Phoenix are all considering bike-share programs in the near future. In New York, at least three bike-share style rental programs were successfully tested in the summer of 2008 alone, suggesting New Yorkers' strong interest in the bike-share idea.

Most of the world's bike-share programs are built and run under franchise contracts with street furniture advertising companies. JCDecaux runs Velib' in Paris, Vélô Toulouse in Toulouse, and Velo'v in Lyon among others. ClearChannel Adshel runs SmartBike in Washington DC, as well as numerous programs throughout Scandinavia (ClearChannel Adshel's flagship program, Bicing, in Barcelona, is operated as a "fee for services" program, independent of advertising). CEMUSA runs a small program, nbici, in Pamplona, Spain. However, revenue streams from advertising are limited in New York due to the 2006 Coordinated Street Furniture Franchise contract which covers major advertising surfaces such as bus stops and newsstands. This report highlights other bike-share programs, such as Montreal's Bixi program, which suggest cost savings options that could be used in New York to fund a bike-share within a limited advertising or no advertising context.

MAJOR FINDINGS

General Findings

- Bike-share programs can be valuable aspects of the transportation networks of cities. Population density is an important part of a successful program. As such, a New York bike-share program should focus on medium- and high-density areas of the city.
- Small programs do not work. Successful bike-share programs that produce real and demonstrable transportation, economic and health benefits depend on a high concentration of bike-stations and widespread program coverage. Often, financial viability increases with larger programs.
- Bike-share programs are used by a wide variety of people of all ages. Commuters, recreational/errand riders, and tourists are the three main user groups. Most bike-share users are not competitive cyclists.
- Despite seasonal weather changes, bike-share programs are used throughout the year.

NYC Conditions

- Bicycling in New York is at an all time recorded high. NYCDOT counted 23,000 daily commuter bicyclists in 2008; Transportation Alternatives estimates 131,000 total bicycle riders daily in 2007. These numbers are expected to increase as more bike lanes are built, as traffic and transit congestion worsen and as transit prices rise.
- New York City's current bike lane coverage is already conducive to a successful bike-share program and the City has immediate plans to expand the bike lane network. More bike lanes should be built with priority toward increasing connectivity and developing more protected lanes.
- Despite a dramatic increase in bicycling, bicyclist injuries have declined and bicyclist fatalities have remained essentially flat over the past decade.

NYC Demand

- New York has a smaller percentage of bicycle commuters (0.6%) than many major American cities but a larger total number of total bicycle commuters (15,000) according to the 2000 US Census and the American Community Survey (ACS). Local bicycle counts show significant populations of bicyclists in areas not indicated by the Census or ACS. The NYC Department of Health and Mental Hygiene's 2007 Community Health Survey indicates that 9% of New York City adults bicycle regularly.
- A large percentage of New Yorkers in the workforce live within a reasonable bicycling distance of their work. Even when bridges are accounted for, 12% of the New York City workforce currently walks or bicycles to their place work, 26% live within a 2.5 mile radius of their work and 45% live within a 5 mile radius of their work. These are all populations for whom bike-share commuting might be feasible.
- City residents (including those who reside outside the coverage area), out-of-city com-

muters (people who work in New York City but do not live here) and visitors to New York, are potential bike-share program users. These users may use the program as part of their commute, for other short trips or for touring the city.

- This report estimates demand and revenue using a range of assumptions (3%, 6% and 9% of potential user populations) about the number of people who would subscribe to a bike-share program. In Paris, Velib' subscription rates range between 6% and 9% of the total population.

Funding & Procurement

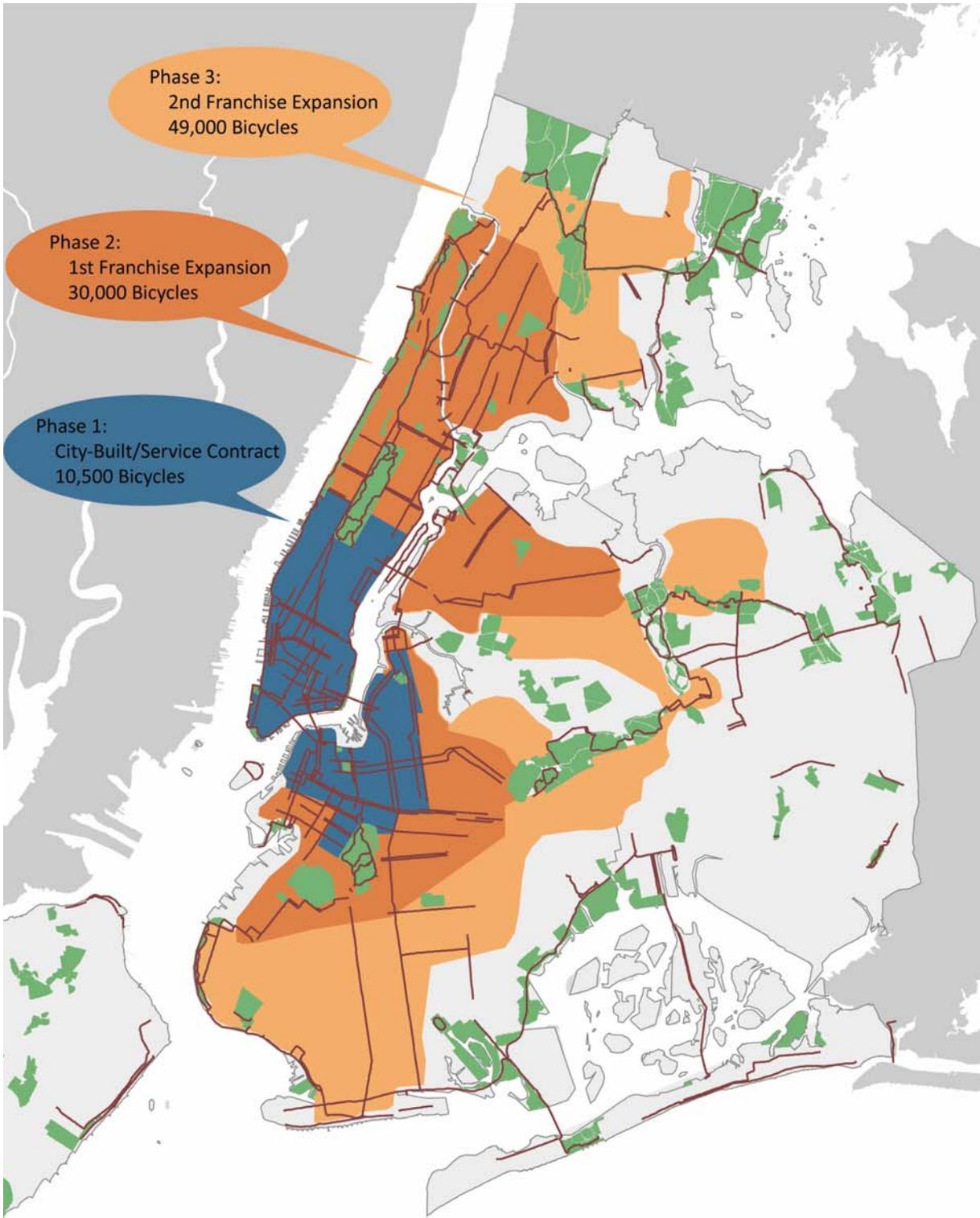
- A New York City bike-share program could be developed either as a city-built program (with operations contracted out under a city services contract) or as a franchise.
- Membership/use fees would be an important operations funding source in either option. Advertising revenue could be another potential revenue source but would require the program to be developed as a franchise.
- To maximize implementation speed while ensuring significant citywide coverage, this report recommends that a New York City bike-share begin as a city-built program with operations funding provided by membership/use fees, while franchise authorization is pending for program expansion.
- Membership/use fees are sufficient to meet the operating costs of bike-share program that covered Manhattan south of 81st St. and some parts of northwestern Brooklyn (around 10,000 bicycles). These are the parts of the city with the highest volume of trips and the largest tourist coverage.
- The use of advertising would require franchise authorization from the City Council. The authorization process for a franchise contract may be lengthy. Under a franchise contract, on-bicycle advertisement and advertisements on bike stations could be considered.
- The advertising revenues from a bike-share franchise could allow for significant program expansion. The combined revenues from advertising and membership/use fees would cover operating costs for a program that encompassed significant parts of the Bronx, Brooklyn, Manhattan and Queens. As in Paris, such a program could be a net revenue generator for the city.

Implementation

- **COVERAGE & DENSITY:** A New York City bike-share program should focus on the city's medium- and high-density areas, defined here as more than 32,000 people/square mile. Phased expansion should be employed to cover all these areas as phasing would allow the program to generate momentum and maximize the potential subscriber pool.
- Atelier Parisien d'Urbanisme (APUR) planners recommended a bike-share kiosk density of approximately 28 kiosks/square mile for Paris. Transport for London's (TfL) plans for the London bike-share program also use this density as a target. The analysis in this report is

based off this number, while recognizing that New York's necessary kiosk density may vary as population densities differ.

- *FEES:* Membership/use fees must stay low (below the price of transit) in order to attract users. This report believes that a New York bike-share program could consider moderate rate increases over programs such as Velib' or Bicing without reducing ridership. Price elasticity for bike-share use is unknown.
- Revenues from tourist or day passes can be significant; one day and weekly passes should be included in the membership options.
- *PHASING:* Initial bike-share phases should begin with a city-built program of 10,000 bicycles. Such a program would incur \$30-40 million in capital costs and \$22 million annually in operations costs. Operations costs would be covered by membership and use fees. These phase(s) would cover Manhattan south of 81st St. and parts of northwestern Brooklyn.
- Subsequent phases, culminating in a 49,000 bicycle bike-share program that would encompass significant parts of four of the five boroughs (81 square miles) and serve two-thirds of the city's population (5.2 million people), should be introduced as quickly as possible under the auspices of a bike-share franchise contract. A 49,000 bicycle program would cover most areas with 32,000 people/square mile and incur approximately \$200 million in capital costs and around \$100 million annually in operations costs. Advertising revenues, plus membership/use fees could fully offset the operations costs.
- *BIKE STATION DESIGN:* A bike station design that requires no, or minimal, excavation or installation work and no electrical wiring is best for New York City. The use of solar arrays as a power source is highly recommended. Solar arrays are currently in use in New York City to power the city's MuniMeters.
- *BIKE STATION PLACEMENT:* Options for bike station placement include: in curbside parking lanes, on wide sidewalks, along the periphery of public spaces and parks and in underused public spaces (under viaducts, paved medians etc.). Efforts should be made to locate stations near transit and existing bicycle facilities.
- *SAFETY:* Data shows that increasing the number of bicyclists is one of the most reliable ways to increase bicyclist safety. At the same time, increasing the number of bike lanes through the city is important, especially for newer bicycle riders.
- While the self-service structure of bike-share programs makes helmet distribution impossible as part of the program, numerous options, such as helmet distribution with membership, vouchers and increased public safety campaigns can mitigate some of these safety concerns.
- *THEFT:* An intuitive, robust locking mechanism, combined with protections against credit card fraud can deter theft in bike-share programs.



Proposed Phasing

Proposed extents of a 10,500, 30,000 and 49,000 bicycle bike-share program.