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**PLANNING AND PROGRAMMING COMMITTEE
JANUARY 18, 2012**

SUBJECT: BIKE SHARE CONCEPT REPORT

ACTION: APPROVE BIKE SHARE STRATEGY

RECOMMENDATION

Approve the Los Angeles County Bike Share Strategy.

ISSUE

On July 28, 2011, the Board approved a motion requiring us to take a leadership role in the implementation of a bike share program in Los Angeles County, explore opportunities for launching a pilot program at strategic locations, determine public/private partnership potential, and report back with recommendations. In response to this request, we have prepared the Bike Share Concept Report (Attachment A) as a first phase of this effort, a Comparison Table of Bike Share Programs (Attachment B), and a Preliminary Bike Share Map for Potential Los Angeles County Pilot Areas (Attachment C). The heat map was developed utilizing five weighted indicators: population density; job density; tourist attractions and facilities; Metro Rail, Metro BRT, and all Rapid stations; as well as Metrolink stations. The map identifies potential preliminary project areas for implementation of bike share programs, specifically downtown Los Angeles, Long Beach and Santa Monica; cities that have received start-up grant funds from Metro's Call for Projects. This report provides the Board with a recommended implementation strategy as well as a status of our efforts in responding to the motion and an implementation strategy

DISCUSSION

Bike share is a program designed for point-to-point short trips using a shared fleet of bicycles strategically located at docking stations throughout a well defined project area and within easy access to each other.

Bike share programs around the country and world have been found to be a strong last-mile short-trip transportation mode in combination with transit. This program will facilitate the reduction in vehicle miles traveled in the County as it provides an easy option for reaching the final destination efficiently. It will reduce the pressure on local bus service and save time for travelers. Bike share has been shown to enhance mobility, reduce travel times, improve access, improve the local economy and tourism, and grow bicycling.

Beginning in 1998, a third generation of bike share programs was installed in Europe with Australia and Canada following in the late 2000's. Some of the cities with such programs were Rennes, London, Paris, Barcelona, Montreal, Toronto, and Melbourne. Beginning in 2008, the first program opened in Washington, D.C. called SmartBike. Over the last three years other programs have been launched in Denver, Minneapolis, Washington, D.C./Arlington called Capital Bikeshare, Des Moines, Philadelphia, Boston, San Antonio, Fort Lauderdale, and Reno. Other agencies and cities currently planning bike share programs are San Francisco MTA, King County Metro, New York City, Portland, Chicago, Chattanooga and Orange County Transportation Agency.

The bikes used are designed specifically for bikesharing and secured to docking stations for access by a member key or credit card. The bikes contain an RFID chip, global positioning systems and wi-fi technologies for tracking trip lengths, number of uses and location to facilitate security and distribution. They are a sturdy design for utilitarian life outdoors and provide a simple, safe and easy way to get around for a wide range of users.

Stations consist of a kiosk, map frame, solar panel and a variable number of docks. For versatility and flexibility in operations, these docks are modular and can be picked up and moved by truck to a new location.

Concept Report

As a first step in responding to the Board's motion and in advancing bike share in Los Angeles County, we held an Agency Bike Share Workshop on Monday, December 5. Six expert speakers were invited from UC Berkeley, Seattle, San Francisco, Denver and Washington, D.C. Speakers from Los Angeles, Long Beach and Santa Monica also presented on their local plans. The topics covered were program planning, interagency agreements, steps in implementation, funding, operating models, public/private partnerships and our role. Discussion topics included: agreements, fees, size requirements for launching programs, integration, insurance, memberships, costs and funding, among others.

Attachments D and E represent the agenda and speaker lists, respectively. Upon request, we can provide a meeting transcript, attendance list, flash drive containing 11 power-point presentations and bike share research materials.

Bike Share Strategy

Los Angeles County is the first region of this magnitude within the U.S. to plan for the integration of multiple programs over a large decentralized area with many potential jurisdictions. Any bike share program will require strong interagency coordination and cooperation for user convenience and benefit. As a result of the workshop and subsequent discussions, we recommend convening a Bike Share Working Group, with participation from all local jurisdictions interested in bike share programs. This will

create the vehicle for planning and implementing a bike share system in urban centers throughout the county that is integrated with transit and uses a shared, open access technology.

A second important step is to prepare a Bike Share Feasibility and Implementation Strategic Plan for Los Angeles County. The services of an expert in bike share program planning, implementation and operation will help us develop the Plan and work through the outstanding issues involved in such a venture. The Plan will result in an interagency agreement, identifying roles and responsibilities, performance criteria, technology and reporting requirements; pricing recommendations and options; operating and marketing plans; potential revenue sources and funding opportunities including public/private partnerships; estimated budgets; detailed mapping in the three start-up areas and a preliminary grid pattern for docking stations; minimum size for success; design drawings; phasing recommendations; and implementation plan.

The goal of a Los Angeles County system should be compatibility among cities and agencies so that bike share and bike parking station technology can "talk to each other" and be seamlessly used by patrons. Additionally, since we have provided Call funding to several jurisdictions to implement bike share, and bike parking, we need to ensure efforts are coordinated to eliminate potential duplication of effort. While the Concept Plan includes a preliminary identification of our role vis-à-vis Los Angeles County jurisdictions and agencies, the Feasibility Study will further refine the roles and responsibilities of participants.

DETERMINATION OF SAFETY IMPACT

No safety impact is anticipated. Safety will be incorporated into any plans for future implementation.

FINANCIAL IMPACT

The funding of \$100,000 in Non-Motorized Planning Funds for the Plan's development is included in the FY 12 budget in cost center 4360, Countywide Planning, under project number 405510, 11.02, Bicycle Planning. Since this is a multi-year program, the cost center manager and Executive Director, Countywide Planning will be accountable for budgeting the cost in future years.

Impact to Budget

Funds were already included in the FY 12 budget for the bicycle program as such there will be no impact to the FY 12 bus and rail capital and operating budgets.

ALTERNATIVES CONSIDERED

The Board could select an alternative strategy. This is not recommended as our role is to provide leadership and interagency coordination and cooperation for a countywide strategy prior to launching a bike share program.

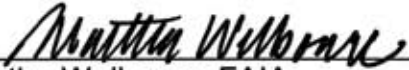
NEXT STEPS

In February, we will convene the Bike Share Working Group and solicit proposals among expert firms in bike share to develop the Bike Share Feasibility and Implementation Plan for Los Angeles County.

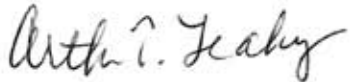
ATTACHMENTS

- A. Bike Share Concept Report
- B. Comparison Table of Bike Share Programs
- C. Preliminary Bike Share Map for Potential Los Angeles County Pilot Areas
- D. Agency Bike Share Workshop Agenda
- E. Workshop Speaker List

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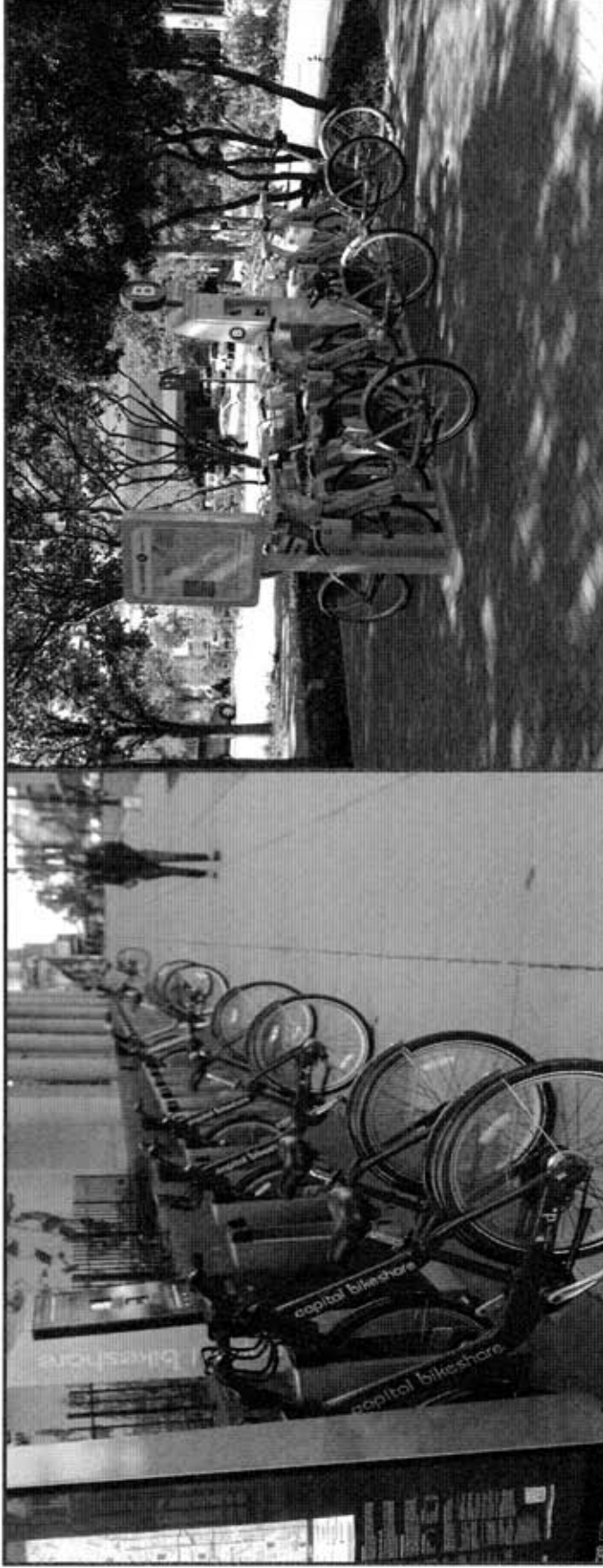
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BIKE SHARE CONCEPT REPORT

ATTACHMENT A



Los Angeles County
Metropolitan Transportation Authority



PREPARED BY METRO BIKE PROGRAM

BIKE SHARE CONCEPT REPORT

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INTRODUCTION

In July 2011, the Metro Board passed a motion requiring the Planning Department to prepare a report that discusses opportunities for launching a bike share program in Los Angeles County; the roles and responsibilities of Metro, local jurisdictions and bike share operators; funding sources and the potential for public/private partnerships. As a first step in responding to the Board's motion and in advancing bike share in Los Angeles County, we held an Agency Bike Share Workshop on Monday, December 5, 2011. Six expert speakers were invited from UC Berkeley, Seattle, San Francisco, Denver and Washington, D.C. Speakers from Los Angeles, Long Beach and Santa Monica also presented on their local plans. The topics covered were program planning, interagency agreements, steps in implementation, funding, operating models, public/private partnerships and Metro's Role. Discussion topics included agreements, fees, and size requirements for launching programs, integration, insurance, memberships, costs and funding, among others. Appendix A and B are the agenda and speaker lists, respectively.

WHAT IS BIKE SHARE?

Bike share is a program designed for point-to-point short trips using a for-rent fleet of bicycles strategically located at docking stations throughout a well defined project area and within easy access to each other.

Bike Share programs around the country and world have been found to be a strong last-mile short-trip transportation mode in combination with transit. Such program will facilitate reductions in vehicle miles traveled by providing an easy and accessible option for reaching the final destination efficiently. Bike share programs have grown exponentially worldwide in the past few years and have demonstrated enhanced mobility, reduced travel times, improved access, improvement in the local economy, and growth in bicycling as a viable mode of travel.

Bike share programs foster increased environmental responsibility, normalize bicycling as a form of urban mobility, and provide a tool to encourage more active life styles.

Beginning in 1998, a series of successful bike share programs were implemented in Europe with Australia and Canada following in the late 2000s. Some of the cities with such programs are Rennes, London, Paris, Barcelona, Montreal, Toronto, and Melbourne. The first U.S. program, SmartBike, opened in Washington, D.C. in 2008. Over the last three years other programs have been launched in Denver, Minneapolis, Washington, D.C./Arlington, Des Moines, Philadelphia, Boston, San Antonio, Fort Lauderdale, and Reno. Other agencies and cities currently planning

bike share programs are San Francisco MTA, King County Metro, New York City, Portland, Chicago, Chattanooga and Orange County Transportation Authority.

HOW DOES IT WORK?

The bikes used for these programs are designed specifically for bike sharing and secured to docking stations for access by a member key or credit card. The bikes contain an RFID (Radio Frequency Identification) chip, global positioning systems and Wi-Fi technologies for tracking trip lengths, number of uses and location to facilitate security and distribution. They are designed to be utilitarian and provide a simple, safe and easy way to get around for a wide range of users.

Stations consist of a kiosk, map case, solar panel and a variable number of docks. For versatility and flexibility in operations, these docks are modular and can be easily relocated and transported by truck to a new location.

RECOMMENDATIONS

The Bike Share Concept Report represents an initial examination of the essential elements and issues associated with a bike share program. This report is based primarily on research and experiences of other agencies that have deployed such programs, as reported at the Bike Share Workshop. Appendix C provides a Table of bike share Programs worldwide.

Los Angeles County is the first region of its magnitude within the U.S. to plan for the integration of multiple bike share programs over a large, rather decentralized area with many jurisdictional boundaries and authorities. Experience to date has revealed that density, proximity to transit and trip attractors are key factors in ensuring a successful bike share program as it will translate into more users for the system deployed. Based on these factors, a Preliminary Bike Share Map for Potential Los Angeles County Pilot Areas was developed that identifies project area(s) for implementation. Potential project areas are based on five weighted indicators that are critical to the success of a bike share program: population density; job density; tourist attractions and facilities; Metro Rail, Metro BRT, and all Rapid stations; as well as Metrolink stations. This map can be found in Appendix D.

Of the preliminary project areas identified for bike share pilot programs, the Cities of Long Beach, Los Angeles and Santa Monica are recommended to serve as the region's pilot jurisdictions for implementation because they have

received funding for bike share implementation through Metro and/or the Federal government and meet the critical criteria of density and proximity to transit stations. Deployment within the pilot areas will assist in analyzing demand, transit and economic benefit and mobility of bike sharing for further implementation within the County.

However, prior to implementation, many intricate financial, technical and institutional issues must be addressed. Therefore, it is also recommended that a Bike Share Feasibility and Implementation Strategic Plan be developed. This plan will require consultant support and proactive participation by Los Angeles County agencies interested in bike share programs.

The Strategic Plan will result in an interagency agreement, identifying roles, responsibilities, performance metrics, technology selection; pricing; operating plans; potential funding opportunities, including public/private partnerships; estimated budgets; and phasing recommendations. While the Concept Plan includes a preliminary identification of Metro's role vis-à-vis Los Angeles County jurisdictions and agencies, the Strategic Plan will further refine the roles and responsibilities of participants. This will enable the region to launch up to three bike share programs in 2013 that are financially and technically sound and whose success would allow further expansion, subject to identification of funding.

Any successful program for this region will require strong interagency coordination and cooperation given the complementary roles and responsibilities of the agencies that must be involved. Consequently, it is recommended that a Bike Share Working Group be convened with participation from local jurisdictions interested in bike share programs as well as representatives from the pilot jurisdictions. This will create the vehicle for planning and implementing pilot programs while focusing on such crucial issues as expansion into other jurisdictions, assuring seamlessness from the users' perspective, exploring potential economies of scale and ensuring integration with transit.

Finally, it is recommended that Metro serve as overall facilitator/coordinator for the initial launch of the regional bike share program by convening the Working Group, assisting in the development of interagency agreements and technology selection. Page seven provides more detail regarding Metro's recommended roles and responsibilities.

Specific Policy Objectives identified to date are:

- Developing a plan for a consistent system-wide open source technology for accessing facilities by smart card or debit card with a shared membership system.
- Coordinating bike share and bike parking technologies.
- Seeking an operating model that is cost-effective and efficient and would eliminate duplication of effort by jurisdictions.
- Working closely with the pilot area jurisdictions to seek potential private funding partners.
- Exploring opportunities with jurisdictions for a regional "bike share" identity with opportunities for individual city-level identities, marketing, sponsorship and operations.
- Providing bike share program technical guidance to all LA County jurisdictions interested in bike share implementation.

POTENTIAL ROLES AND RESPONSIBILITIES

Metro Role

Bike Share program development is a highly collaborative endeavor which in most cases requires the participation of different types of agencies. Among the U.S. programs, while the level of involvement of the transit agencies has varied dramatically, no transit agency is in charge of operating a bike share program. Given the purview of transit agencies, the most appropriate role for them is to participate in the integration of bike share with transit. In some cases, the transit agency can serve as overall coordinator for a regional program.

Given Metro's regional role as the County's Transportation Planning agency, the potential role for Metro in a countywide bike share program is as follows:

- Create Countywide Working Group
- Develop Interagency Agreement(s) that are tailored for LA County
- Develop implementation plan, market/operating plan
- Work with Countywide Group to select technologies for an integrated countywide network (to access bike share and bicycle parking stations)
- Work with jurisdictions to Identify possible funding sources (including private sector participants)

BIKE SHARE CONCEPT REPORT

- Provide space at Metro transit stations for bike share docking stations
- Promote service to Metro employees and transit ridership

Other essential roles are performed by local jurisdictions which may or may not act as the operator of the program. The Table below illustrates the typical roles and responsibilities associated with each function:

Local Jurisdictions and Operators

Local Jurisdiction	Operator
<ul style="list-style-type: none"> • Hire operator • Manage local outreach committees • Obtain permits & access to private land for docking stations • Develop appropriate regulations and ordinances • Identify initial capital investment and develops local sponsor support • Analyze & evaluate project performance • Provide management support • Oversee local operations • Promote service to employees and local residents • Oversight over website and mechanism for users to report problems 	<ul style="list-style-type: none"> • Strong customer services & website maintenance • Purchase, install & maintain equipment (bicycles, access, reporting, security) and distribution of bikes. • Operate payment system that includes credit card checks & revenue sharing • Track & report performance data • Provide liability insurance and legally binding waiver for users; performance bond • Conduct marketing & develop incentive programs • Offer bicycle safety classes • Routine maintenance, repair & replacement of equipment

BUSINESS MODELS

The primary three business and financial models for bike share programs around the world are one where: 1) public agency owns and operates, 2) public agency owns and contracts with private (for profit or non-profit) company for operations, or 3) private company owns and operates. Each of these models has its own particular advantages; some of which are outlined below. The advantage of a public company owning and operating is direct involvement on a day to day basis which could translate into greater transparency and direct oversight and better visioning for expansion. The advantage of contracting is in engaging firms that are experienced in the activities associated with maintenance and operations of bike share systems without incurring ongoing staff resources. The advantage of



utilizing a non-profit agency to operate the system is in their ability to secure funding from the private sector which would not be made available directly to a public or for-profit agency. The advantage of the for-profit model is their focus on market demands and efficiency in an effort to profit from the venture.

Examples of each of these models are:

- Public – Transport Agencies - Germany Call a Bike, China Hangzhou & Lyon
- Public – Cambridge, England; Burgos, Spain
- Sponsorships or Advertising-driven service - Paris & Barcelona Bicing, SmartBike, London
- Non-profit - Quasi-Governmental Transport agency – Montreal BIXI, UK, China
- Public - University – Universities of Virginia & Portsmouth
- For Profit – Berlin, Germany
- Public/Private Non-Profit (government, non-profit and corporate) - Amsterdam, Denver B-Cycle
- Local Governments – Denmark, South Korea, Taiwan and China

INTERAGENCY AGREEMENTS

Given the number of agencies involved in a regional bike share program, any business model would require an interagency agreement which would define the organizational structure for implementing a bike share program, ratify financial and logistical commitments, and set the basic policy direction. Depending on the business model, the parties to the agreement could be public agencies or public and private entities. As such, agreements may require a lengthy process for development.

As an example, in the San Francisco Bay Area, following the award of a \$4.3 million regional grant to deliver a regional bike share pilot project, it took approximately one year to develop an Intergovernmental Agreement. The project will deploy 1,000 bicycles at up to 100 stations in San Francisco and in four other cities along the San Francisco Peninsula. There are four major partners: The Bay Area Air Quality Management District (Air District), the San Francisco Municipal Transportation Agency, the Santa Clara Valley Transportation Authority and the San Mateo County Transit District (voting for Samtrans, San Mateo County and Redwood City), with the Air District serving as overall project lead. This agreement was developed by a project Steering Committee made up of member representatives. The Steering Committee decided roles and responsibilities, implementation policies, budgets, schedules, indemnification and insurance agreements, and financial management. The Air District's

decision is the “tie breaker” if consensus cannot be reached after two meetings of discussion. Each member has specific responsibilities. In addition to providing \$1.4 million in additional funding, the Air District is the program administrator and fiscal agent, organizes and facilitates the Steering Committee and the lead vendor for procurement and negotiations, grant reporting and record retention. Under the agreement, the local partners brought \$1.3 million more in combined local matching funds. The local partners also took the lead in developing the vendor scope and technical specifications, local coordination and implementation which includes station siting, permitting and leases/licenses, stakeholder outreach, local promotion and marketing and quarterly reporting. It is anticipated that deployment of a regional bike share program in Los Angeles County will require similar agreements between Metro and the local jurisdictions where the pilots will be implemented.

FUNDING SOURCES

Most bike share programs in the world are funded through franchise contracts with street furniture advertising companies. However, more recently, some U.S. cities have relied on a combination of government grants and private sector donors to fund their programs due to the fact that their street furniture is already under existing contracts.

Capital expenses can be funded through government grants, corporate sponsorship or advertising. Operating funds can come from sources such as grants, gifts, sponsorships, advertising, membership fees and usage fees. To provide an example, Denver's program receives over half of its funds (55%) from capital grants and contributions, 5% from gifts in kind and contributions, 26% from sponsorships, 9% from memberships and 5% from usage fees.

A table of potential funding sources follows on the next page:

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Potential Revenue Sources	Capital	Launch	Operations	All Phases
Federal Grants (TIGER) CMAQ, Transportation Enhancement Activities (TEA), Department of Energy (DOE)	Depends on type of grant, e.g. federal funding sometimes cannot be used to purchase equipment.	Depends on type of funding.	Depends on type of funding.	Depends on type of funding. For example, there are FTA grants for bike share that can only be used for purchasing stations; some grants can be used for operations. Federal funds may require local match.
City/State Funding State Bicycle Transportation Account (BTA), Measure R, TDA Article 3, Local Return	Depends on type of funding.	Depends on type of funding.	Not typically eligible	
Membership and Usage Fees	No	No	Does not sustain program	
System Sponsorships				Based on naming rights
Corporate Sponsorship				Sponsor docking stations, bicycles
Advertising			Bus Bike Rack Advertising	
OTHER GRANTS	Depends on type of funding.	Depends on type of funding.	Depends on type of funding.	State, CDC – Center for Disease Control & Prevention,
Non-Profit Grants/ Donations	Depends on type of funding.	Depends on type of funding.	Depends on type of funding.	Depends on type of funding.

SOURCE: King County Bike Share – Business Model Review and Evaluation Draft Memorandum

Public / Private Partnering

Public/private partnerships are often used for bike share programs; most notably, in providing funding for their development and implementation as well as in overall operations and management of the programs. Private donors and corporations have played a key role in providing funding for ongoing operations in exchange for advertising and naming rights.

According to the King County Bike Share Program Plan, “bike sharing typically requires the cooperation of public agencies and private corporations. Public agencies can play a role in funding, management, and operation, relying on a combination of federal and state grants, corporate sponsorship (or advertising), and user generated revenues. Public agencies have tended to take a back seat in administering and operating bike share systems, instead contracting these services to non-profit organizations or private companies. Public agencies can provide the following support to bike sharing.”

Corporate Sponsorships

Bike sharing also has synergies with the corporate community. Sponsorship or advertising opportunities can provide a revenue stream for the bike share system to sustain system operations and maintenance (or in some cases capital cost). In return, potential sponsors are provided with a variety of options ranging from station sponsorship to title sponsorship. Supporting a bike sharing program may be beneficial to businesses from a direct marketing (exposure) standpoint or the benefits of the program may align with their corporate interests (e.g. health care providers have been the most prevalent sponsors of other systems in North America). Corporate partners may also utilize the transportation benefits offered by a bike share system through corporate membership that can deliver large numbers of users to the system.

Sponsorship Options

Title sponsorship - full and exclusive sponsorship rights to the system and components. Example is London Barclays Bank.

Presenting sponsor – receive recognition but do not have exclusive advertising rights and share sponsorship with other organizations.

Station sponsorship – name of advertising sponsor could be displayed in the top or side of the kiosk or in the map frame; “sponsored by or brought to you by.”

Dock sponsorship – name of advertising sponsor on other elements of the station.

On-bike and fender sponsorship – name of advertising sponsor on parts of the bicycles themselves.

Other sponsorships – on web page, receipts, helmets, keys or other advertising opportunities.

Membership and Usage Fees

In most programs, there is an initial membership fee (daily, weekly, annual) as well as a cost associated with the number of hours the bike is in use. However, most programs provide financial incentives for monthly or annual usage plans inclusive of a reduced hourly rate. Different pricing schedules are usually established for short versus longer trips. However, in most programs the first half hour is free.

COSTS OF BIKE SHARE PROGRAMS

Anticipated Costs

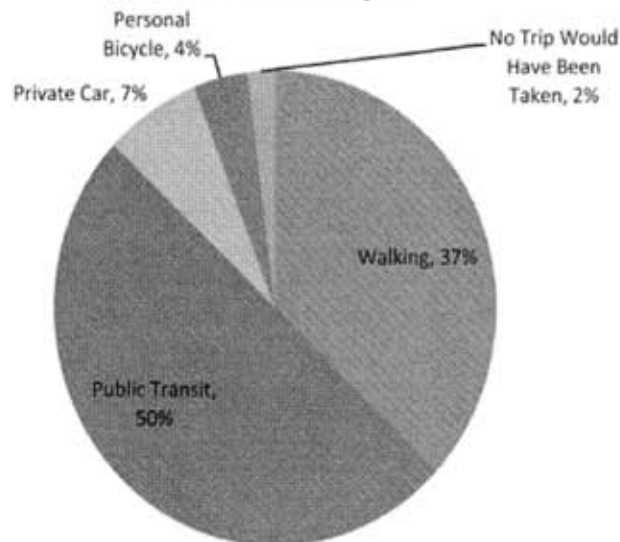
- Direct capital costs (bikes & terminals)
- Direct operating costs (administration, maintenance, & power supply)
- Assoc capital costs (construction of infrastructure & streetscape improvements)
- Assoc operating costs (maintenance of infrastructure & bikeway network, insurance)
- \$3-5,000 per bike (includes all capital expenses)

Docking stations are modular but an average minimum size is for 10 bikes at 100 docking stations or 1000 bikes. In Denver, the average cost for 1000 bikes at 10 docking stations is approximately \$4,160,000 or \$4,160 per bicycle. (Denver estimates their costs to retrofit a site to average \$8,300 per location.) In the Bay Area, the average cost for 1000 bikes at 100 docking stations is expected to be \$8,300,000 or \$8,300 per bicycle. These variations can be attributed to location, footprint, property requirements, power access and other factors.

BENEFITS OF BIKE SHARE PROGRAMS

Mobility and Transit

Trips Replaced by Velo'v Would Have Been Made By...



Source: *Bike-Share Opportunities in New York City*, NYC Dept. of City Planning, Spring 2009

It is important to recognize that any bike share program should address public transportation integration as it provides the means to make the first and/or last mile of a trip to transit in a time-efficient, convenient, environmentally-friendly manner. Local residents can be expected to use bike share facilities to make short trips to shopping, local employment, education, recreation, entertainment, errands, as well as to transit. Bike sharing promotes multi-modal transit options and increases the catchment area of transit. As well as meeting mobility goals, expanding bicycling also addresses public health, air quality and safety goals.

Metro Rail and Bus Rapid Transit (BRT) studies have found that the average trip length to and from our rail and BRT stations is 1.3 miles, a bikable distance. Bike share strategically located in highly dense areas can dramatically reduce the need to take a bicycle on the train or bus or drive to/from transit stops. This is also an important issue to address for longer term bike use on our system. Our transit system has capacity and safety limitations on bike use within our vehicles and transit infrastructure.

Studies have shown that bike share programs result in new bike-transit trips, improved connectivity to other modes and decreased personal vehicle trips. In Lyon, some bike-sharing trips “do replace some trips previously made on other modes of transit, but the loss of customers for public transit services is quite low as many users are still holders of a public transport pass” (NICHES 2007).

Local Business & Economy

At the 2011 Rail-Volution Conference, Christopher Leinberger of the Brookings Institute reported that transportation drives development and that the pendulum is swinging toward a “new urbanism” created from the desire for a different way of living. Bike share supports and builds upon this new trend. In Washington, D.C. bike share has shown that “it is a transportation mode option that leads to increased economic growth.”

Local businesses benefit from bicyclists riding, rather than driving, on downtown streets as they are more likely to stop at local establishments and stores than motorists driving through. Bike share programs have demonstrated that tourists are a major user group of bike share. In evaluating their bike share usage, San Antonio found that 40% of all of its bike share trips are made by tourists.

Employees can use bike share to go to local eating establishments, meetings, or shopping during their lunch hour to save time. Employers can use bike share to make deliveries or other business related trips. There are unique untapped opportunities to combine Rideshare or Commute Trip Reduction programs within Los Angeles County with the use of bike share. Policy and/or financial incentives could be used to encourage the use of this trip reduction measure.

Air Quality and Sustainability

Bike share programs improve air quality by reducing drive-alone rates, increasing transit use by providing convenient transitions to end-of-trip destinations. Bike share supports green house gas emission and VMT (vehicle miles traveled) reduction goals in SCAG's Draft Regional Transportation Plan.

LESSONS LEARNED FROM OTHER PROGRAMS

Essentials to a Successful Program

Issues Impacting Feasibility	Pitfalls to Avoid
Property Ownership	Poor design
Topography	Lack of maintenance – stations and inventory
Permitting	Project areas or key neighborhoods poorly defined
Sign codes	Inadequate funding to launch a successful program
Select correct technology: user interface, protocols, network integration	Insufficient size and commitment of bikes and docking stations
Conduct independent assessment of community needs, economics, technologies, logistical issues, service area & other challenges	Lack of consistent funding for operations; inability of systems to communicate, ignored community needs/input
Offer package of services	Improper placement of bicycles
Conduct economic analysis	Lack of customized business strategy: forecast usage
Begin in urban core	Not offering multiple registration and payment options at check-out stations (keep it simple for tourists and first-time users)
Define maintenance and operations roles	Lack of inventory redistribution protocol



KEY ELEMENTS OF A BIKE SHARE PROGRAM

Equipment and Systems

- Bike fleets,
- User interface and check-out protocols
- Station networks
- Branding
- GPS, RFID tag ((Radio Frequency Identification), i.e. tracking mechanism – retrieval of lost or stolen bikes
- Computerized system to check out bicycles
- Power source; solar energy option
- Mechanisms mounted on bikes

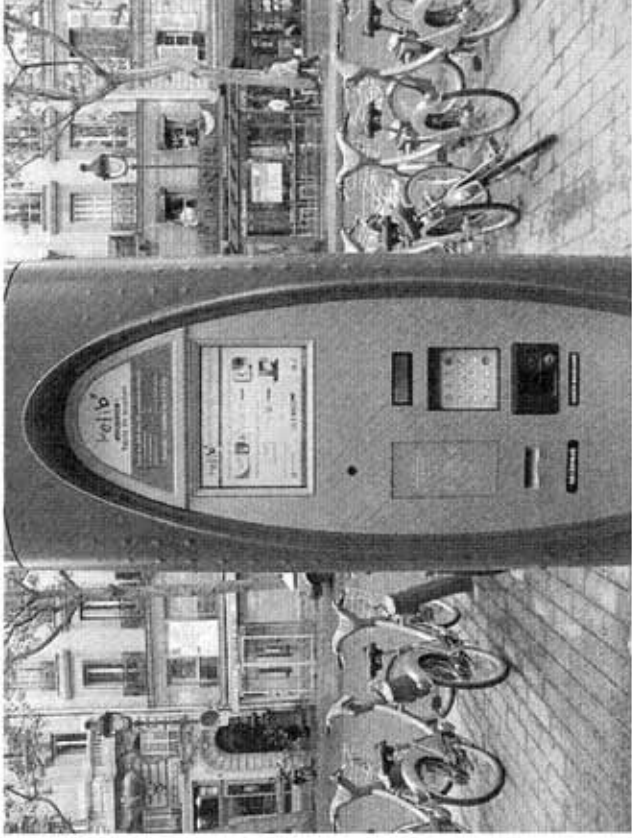


Source: *Bike-Share Opportunities in New York City*, NYC Dept. of City Planning, Spring 2009..

Typical Operating Systems – Self-serve Kiosk, “Dial-a-Bike” or “Call-a-Bike”

- Self-serve kiosk with touch screen interface and card reader
- Customer calls telephone number on bike and gets 4 digit unlock code
- Bike has touch screen to release bike (Germany)

- SMART CARD TECHNOLOGY that contains user's registration and payment information; accessible to general public
- GPS Tracking system



Source: *Bike-Share Opportunities in New York City*, NYC Dept. of City Planning, Spring 2009, pg 29.

Maintenance and Management Requirements

- Establish maintenance standards
- Fleet and station maintenance
- Damage resistant locking mechanisms
- Status information systems
- Bicycle redistribution systems

- Fast replacement and repair of items by vendor, including damages to station and missing or stolen bikes
- Ability to expand stations to accommodate events

Station Design, User Interface and Access Protocols

- Simple
- Instructions to users
- Cost/pricing information
- Maps/nearby stations
- Recommended bicycle routes
- Registration & payment options offering multiple options at check-out station (available to tourists)
- Liability waiver

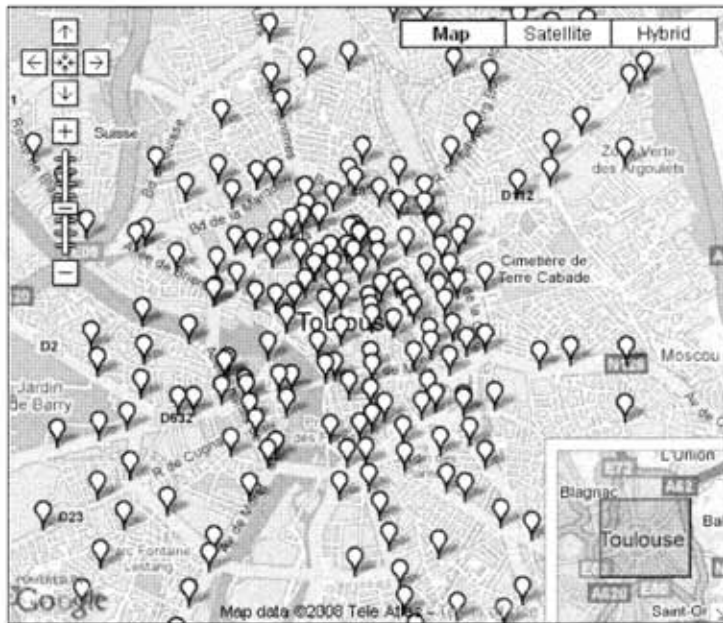
Siting Bike Share Docking Stations

A system critical size needs to be determined and tailored to Los Angeles County. To ensure success, a program must start with a significant size. Additionally, proximity to transit and docks at transit stations are essential. The successful programs in Paris Velib, Barcelona, and Hangzhou, benchmark station spacing to a 300- meter grid with a station every 2-3.5 blocks or 28 stations per square mile. (This is equivalent to 50 stations in a 1.75 square mile service area.) This is the effective distance for short convenient trips. The analysis done by the City of San Francisco used 11 factors in determining the service area. Once the service area is identified, locations can be determined. Docking stations can be modular for flexibility of installation and location/relocation as necessary.

Station siting requires an outreach process to solicit community input from the outset regarding locations. Community members can provide invaluable guidance and are natural collaborators given their familiarity with their community.

For each area, the minimum size needs to consider a coverage area at which bicycling becomes a more attractive option than walking, providing sufficient coverage to both trip origins and trip destinations, and providing a reasonable station density so that users can easily access a station. Operating costs, in particular achieving economies of scale, should also be considered. Bike share fits between trips too far to walk and trips too short to

justify waiting for transit. As station spacing is increased, there is a point at which users will consider that they have to walk too far to access a bike and will be inclined not to make the trip or to take a different mode. (Station densities of one station every 1,300 feet (~1/4 miles) results in a minimum system size of 10 stations.) Based on the 2001 National Household Travel Survey the median distance people walked for utilitarian purposes was approximately 0.25 miles or a five minute walk. (*How Much Do Americans Walk? An Analysis of the 2001 NHTS*). The same trip time represents a bicycle trip of approximately 0.8 miles (assuming a bicycling speed of 12 mph). If a five-minute bike ride is set as the minimum extent of the system, then the minimum service area should cover approximately two square miles.



Source: *Bike-Share Opportunities in New York City*, NYC Dept. of City Planning, pg. 44, Spring 2009. (The underlying map is a Google mash-up with the real_me bicycle and bike station information managed by the Vélô Toulouse central computer.)

Advocacy Groups

Advocacy groups can play a major role in promoting bike share systems to their members and areas of influence. Organizations that attract group, event or social riders can influence a new way of thinking about bicycling as transportation and short trip making.

Marketing Strategies

Strong marketing strategies are needed at program pre-launch. Logos, websites, social media, public relations, media and marketing materials are needed to gain exposure and memberships prior to a system launch. It is important to the success of a program to increase the awareness of potential users and give people an opportunity to understand the program. Consistent and continued communications are needed to grow the program.

CONCLUSIONS

Based on the most critical criteria, several specific pockets within Los Angeles County would serve as ideal locations for a pilot implementation of bike share. Given the growing trend toward bicycle use within the County and prior regional financial commitments through the Call for Projects, the Cities of Long Beach, Los Angeles and Santa Monica would serve as prime candidates for deployment. Implementation of bike share is rather complex in light of the types and levels of authorities required and as such, Metro must collaborate closely with local jurisdictions to assure success for a regional program. It is also essential to utilize technical expertise through a consultant contract to better define program size, roles, cost, funding, business model, etc. A regional working group with focus on development, funding identification and implementation of the program is also envisioned as a critical next step in the process of a Los Angeles County bike share deployment.

12:45-2:15 Afternoon Panels [20 min presentations]

Moderator: Shahrzad Amiri

Operating a Bike Share Program: What's Important to Know

Nick Bohnenkamp, Director of Planning, Denver Bike Share

Jim Sebastian, Capitol Bike Share

Q&A/Discussion

Group

2:15-2:30 Quick Break

2:30-3:30 "Bike Share LA County" [10 min presentations]

Santa Monica

Lucy Dyke, Deputy Director City Planning

Long Beach

Allan Crawford, Bicycle Coordinator

Los Angeles

Lys Mendez, Mayor's Office Fellow

"Metro's Role"

Lynne Goldsmith, Bike Program Manager

Q&A/Discussion

Group

3:30-4:00 Wrap Up – Next Steps

Shahrzad Amiri



Speaker List in Order of Presentations

Susan Shaheen

Susan Shaheen is a co-director of the Institute of Transportation Studies' Transportation Sustainability Research Center (TSRC) and lecturer at the University of California (UC), Berkeley. Her research projects on carsharing, smart parking, and older mobility have received national awards. She serves on the editorial board of the International Journal of Sustainable Transportation, the National Academies' Transit Research Analysis Committee, and chairs ITS America's Livable Communities Committee. Over the past 20 years, she has served in many capacities, as Policy and Behavioral Research Program Leader at California Partners for Advanced Transit and Highways, as special assistant to the Director's Office of the California Department of Transportation, as post-doctoral researcher at UC Berkeley from 2000 to 2001, and as a consultant to the U.S. Department of Energy and the Environmental Protection Agency in Washington, D.C. She has authored 38 journal articles, over 64 reports and proceedings articles, and co-edited one book. Susan holds a Ph.D. from UC Davis in ecology, focusing on the energy and environmental aspects of transportation, and a Master's degree in public policy analysis from the University of Rochester.

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BIKE SHARE CONCEPT REPORT

APPENDIX C

COMPARISON TABLE OF EXISTING AND PROPOSED BIKE SHARE PROGRAMS

UNITED STATES

CITY	YEAR	SYSTEM	#BIKES/STATION	MEMBERS	OPERATING MODEL
Washington DC Phase 1	2008	SmartBike	120/10	1,050	DDOT (spell out)& Advertising. Operated by Alta & Bixi.
Minneapolis, Minnesota	June 2010	NiceRide Minnesota	1200/115	1,500 members, 10,000 casual riders, ~500,000 rides	Capital \$5.3 m; 63% public funds. 37% private funds. Non-profit set up by city.
Denver, Colorado	April 2010	Denver Bike Share/B-Cycle Trek System	500/50	1,800 33,000 casual users – 100,000 rides	Capital \$1.5 m; 16% public, 84% private. Non-Profit operator set up by city. B-Cycle
Boulder, Colorado	Spring 2011	B-Cycle	200/25		Non-Profit
Des Moines, Iowa	Sept 2010	B-Cycle	18/4	109 casual riders, 20 annual members	Already existing non-profit, Des Moines Bicycle Collective
Capital Bikes: Wash DC – Arlington Phase 2	Sept 2010 & 2011	Alta Bike Share/CaBi or Capital Bikeshare	1,650/164	20,000 members 10,000 casual users, 100,000 rides	Capital \$8 m fed/state funds. Small amt private sponsorships & revenue. Owned by DDOT & Arlington; operated by Alta
Miami Beach, Fl	Dec 2010	DecoBike	1,000/100		\$4 m Private investor DecoBike
Philadelphia, Penn	2010	Alta Bike Share/ CityRide			
San Antonio, Tx	Spring 2011	B-Cycle	140/14		\$840,000 DOE/CDC funds. San Antonio B-Cycle non-profit.
Fort Lauderdale, Fl	2011		200/20		\$1.1 m (63% private, 27% public).
Boston, Mass	Spring 2011	Hubway	610/61		\$4 m (75% public, 25% private). Ea municipality responsible for own sponsorship. Operators Alta-BIXI

BIKE SHARE CONCEPT REPORT

U.S. CITIES PLANNING BIKE SHARE

CITY	YEAR	SYSTEM	#BIKES/STNS	MEMBERS	OPERATING MODEL
NYC, New York	Fund Raising	Alta Bike Share	Est 10,000 TBD		Private financing & system
San Francisco/ South Bay cities	2012		Est 1,000		
King County Metro – Seattle, Redmond, Kirkland, Uof W, Sound Transit, Pubget Sound Regl Council, Washington	2012-2013				Public-private partnership with non-profit; Children's Hospital, Microsoft, Cascade Bicycle Club
Portland, Oregon	In Plng				
Chattanooga, Tenn	Planned		300/30		\$2 m CMAQ. Public/private partnership.
Chicago, Illinois	In Plng	Chicago B-Cycle	100/6		Bike N Roll - Private financing

EUROPE, CANADA, AUSTRALIA, ASIA

CITY	YEAR	SYSTEM	#BIKES/STNS	MEMBERS	% MODE SHIFT	OPERATING MODEL
Amsterdam, Netherlands	1965	Free bikes (Theft)	If no information should it be included			
Copenhagen, Denmark	1991	Coin Operated-(Theft)			23% of all trips	Non-profit
Portsmouth, England (University)	1996	Magnetic stripe card/locks				Rent-a-Bike
Rennes, France	1998	Beginning of 3 rd generation				
Munich	2000	Call-a-Bike		15,000		
Lyon, France	2005	Velo	1,500+ to 4,000		50% replaced other transit trips	Transit service & Advertising
Toulouse, France	2007	Velo	1,400 to 2,400	7,000 268,000 passes		Advertising



BIKE SHARE CONCEPT REPORT

Paris, France	2007	Velib	7,000 to 23,600		1.0 to 2.5	
Barcelona, Spain	2007	Bicing	1,500 to 6,000	40,000 to 100,000	0.75 to 1.76	
Montreal	May 2009	BIXI	5,050/450	30,000 members, 3.3 m rides fix formatting	Government Parking Auth. (non-profit)	
Melbourne, Australia	2009		Need information		DOT	
Mexico City	Feb 2010		1,000	24,000 users, 1 m rides	Clear Channel	
London, England	July 2010	Barclays Cycle Hire	6,000/400		Bicycling currently 2% all trips; Goal to increase to 5% by 2025	Barclays Bank
Toronto	May 2011	BIXI	1,000/80			
Vancouver	In Planning					

Source: Paul DeMaio, <http://bike-sharing.blogspot.com> and *Bike-sharing: History, Impacts, Models of Provision, and Future*. Bike-Share Studio, University of Washington, *Seattle Bike Share Feasibility Study, 2011*.

Alta Study, NYC

BIKE SHARE CONCEPT REPORT

APPENDIX D



Preliminary Bike Share Map for Potential Los Angeles County Pilot Areas



Legend

- ◆ Regional Transit Stations
 - ◆ MetroLink Stations
 - ◆ Metro Rail and BRT Stations
 - ◆ Metro Rapid Bus Stops
 - ◆ Mount Rapid Bus Stops
 - ◆ Red Line
 - ◆ Gold Line
 - ◆ Purple Line
 - ◆ Green Line
 - ◆ Blue Line
 - ◆ Orange Line
 - ◆ Silver Line
 - ◆ Exposition Light Rail
 - ◆ MetroLink
- Bike Share Score Weighted Sum
(The highest score is 53)
-

Indicators Selected for the Suitability Study

Indicator	Scale	Metric	Buffer	Weight	Data Source
1. Population Density	TAZ	Population per acre	nil	1	SCAG 2008 RTP
2. Job Density	TAZ	Jobs per acre	nil	1	SCAG 2008 RTP
3. Transit Stations and Facilities	10 meter cell size	Point density	1000 meter	1	2010 Thomas Book
4. Metro Rail, BRT & Rapid Bus Stops	10 meter cell size	Point density	1000 meter	1.5	Metro Service Planning and Scheduling Dept.
5. MetroLink Stations	10 meter cell size	Point density	1000 meter	1	Southern California Regional Rail Authority



Prepared by: [unreadable]

Map: [unreadable]



ATTACHMENT B

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Alta Study, NYC

ATTACHMENT C

**Preliminary Bike Share Suitability Map for Potential Pilot Areas
in Los Angeles County**

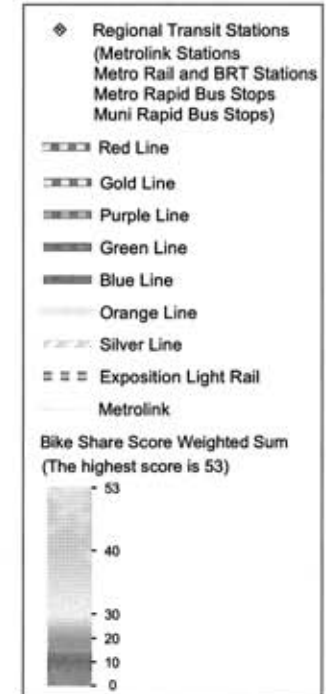
(Please see PDF File titled "Bike Share Concept Report Attachment C)

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ATTACHMENT C



Legend



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Q&A/Discussion Group

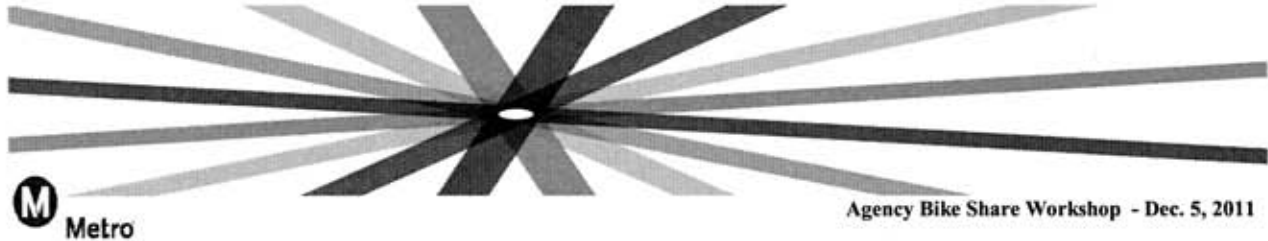
2:15-2:30 Quick Break

2:30-3:30 "Bike Share LA County" [10 min presentations]

Planning (fix formatting)	Santa Monica	Lucy Dyke, Deputy Director City
	Long Beach	Allan Crawford, Bicycle Coordinator
	Los Angeles	Lys Mendez, Mayor's Office Fellow
Manager (formatting)	"Metro's Role"	Lynne Goldsmith, Bike Program

Q&A/Discussion Group

3:30-4:00 Wrap Up – Next Steps **Shahrzad Amiri**



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