PBIC Livable Communities Webinar Series

Bike Sharing in the United States: State of the Practice and Guide to Implementation



RJ Eldridge and Mauricio Hernandez, Transportation planners, Toole Design Group Josh Moskowitz, Manager, Capital Bike Share Julia Diana, Manager, San Antonio Bikes

April 26, 2012, 3 p.m.





Today's Presentation

⇒ Introduction and housekeeping

Audio issues? Dial into the phone line instead of using "mic & speakers"

⇒ PBIC Trainings and Webinars

http://www.walkinginfo.org

⇒ Registration and Archives at

http://walkinginfo.org/webinars

⇒ Questions at the end



PBIC Livable Communities Webinar Series

Pedestrian and Bicycle Information Center





Federal Highway Administration



State of the Practice and Guide to Implementation Getting Started with Bike Share

RJ Eldridge and Mauricio Hernandez Toole Design Group, LLC

April 26, 2012

Focus of study





Federal Highway Administration

Document current practices

- Planning
- Business models
- Funding sources
- System design and technology
- Performance measures
- Provide implementation guidance
 - Program goals
 - Feasibility studies
 - Infrastructure options
 - Policy considerations
 - Promotion and marketing
- Support program success



Source: Capital Bikeshare

Study participants





Federal Highway Administration

EXISTING PROGRAMS

- Boulder B-cycle (May 2011)
- Capital Bikeshare (DC Area | Sep. 2010)
- Deco Bike (Miami Beach | March 2011)
- Denver B-cycle (April 2010)
- Hubway (Boston | July 2011)
- Nice Ride (Minneapolis | June 2010)
- San Antonio B-cycle (March 2011)
- Spartanburg B-cycle (July 2011)
- ZotWheels *(UC Irvine | Oct. 2009)

UPCOMING PROGRAMS

- Chicago (summer 2012)
- Baltimore (fall 2012)
- Atlanta (feasibility study- summer 2012)



Source: Boulder B-cycle, Capital Bikeshare, Deco Bike

What is bike sharing?







- Automated self-service bicycle rentals
- Priced to encourage short trips
- One style of bicycle
- One-way use/return bicycle at any station
- Long-term and casual members

Program profiles Large systems (800-1,200 bikes)



U.S. Department of Transportation

Federal Highway Administration

	Capital Bikeshare	Nice Ride	Deco Bike
Start date	September 20, 2010	June 10, 2010	March 15, 2011
Number of bikes	1200	1200	800
Number of Stations	150	116	91
Docks per station (Range)	11 to 39	11 to 39	13 to 19
Solar vs. wired	Solar	Solar	Solar
Service Area (Sq Mi)	35.95	33.30	6.30
Average Station Density (# station per Sq. Mile)	3.92	3.48	14.13
# of Members (Annual/Casual)	19,200 Annual 105,644 casual	3,521 annual 37,103 casual	2,500 annual No casual data reported
Year round or seasonal	Year-Round	Seasonal (Closed Nov-Mar)	Year-round
# of Trips per year	1,171,562 trips in 365 days	217,530 trips in 212 days	540,000 trips in 274 days
Business Model	Jurisdiction owned and managed	Non-Profit	For-Profit

Source: Interviews with Advisory group (Nov.2011- Jan. 2012)

Program profiles Medium systems (200-600 bikes)





Federal Highway Administration

	Hubway	Denver B-Cycle	San Antonio B-Cycle
Start date July 28, 2011		April 22, 2010	March 1, 2011
Number of bikes 600		520	200
Number of Stations 60		52	20
Docks per station (Range)	cks per station (Range) 13 to 19		7 to 23
Solar vs. wired	Solar	Solar and Wired	Solar and Wired
Service Area (Sq Mi)	11.79	12.571	4.77
Average Station Density (# station per Sq. Mile)	4.83	4.1365	4.19
# of Members (Annual/Casual)	3,600 Annual 30,000 Casual	2,659 Annual 40,600 Casual	1,000 Annual 2,800 casual
Year round or seasonal	Seasonal (Closed Dec-Mar)	Seasonal (Closed Dec-Mar)	Year-round
# of Trips per year	60,000 trips in 120 days	202,731 trips in 271 days	23,272 trips in 180 days
Business Model	Jurisdiction owned and managed *	Non-Profit	Non-Profit

Source: Interviews with Advisory group (Nov.2011- Jan. 2012)

Program Profiles Small systems (under 150 bikes)



U.S. Department of Transportation

Federal Highway Administration

	Boulder B-Cycle	Spartanburg B-Cycle	ZotWheels*
Start date	May 20, 2011	July 7, 2011	October 1, 2009
Number of bikes	110	14	28
Number of Stations	15	2	4
Docks per station (Range)	11 to 15	9 and 11	8 to 12
Solar vs. wired	Solar and Wired	Solar and Wired	Wired
Service Area (Sq Mi)	4.69	1.42	1.29
Average Station Density (# station per Sq. Mile)	3.20	1.41	3.11
# of Members (Annual/Casual)	1,171 Annual 6,200 Daily	100 Annual 450 Casual	100 Annual No casual data reported
Year round or seasonal	Seasonal (Closed Dec- Mar)	Year-round	Year-round
# of Trips per year	18,500 trips in 270 days	1500 trips in 150 days	2200 rides in 252 days
Business Model	Non-Profit	Non-Profit Non-Profit/School owr	

* ZotWheels was included to provide insights into university owned and managed programs. While this analysis does share lessons learned from the program, the findings of the report concentrate on urban bike sharing programs

Why bike sharing?



U.S. Department of Transportation Federal Highway Administration



Source: Boulder B-cycle

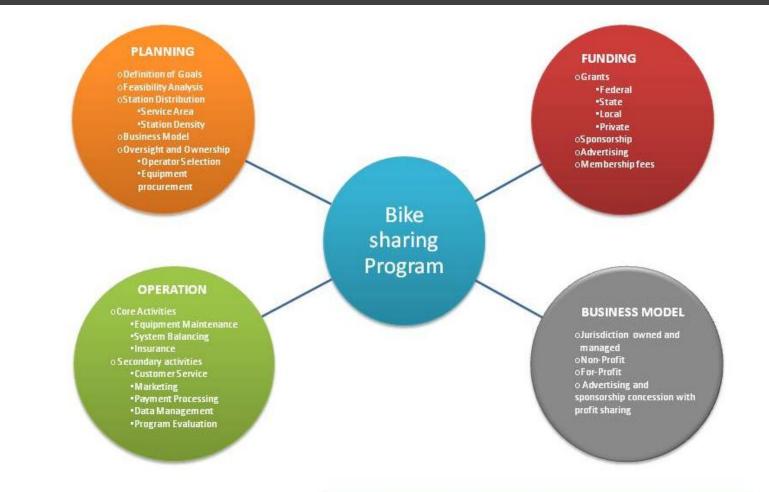
- Increased mobility options
- Spontaneous bicycle trips
- Complement transit and other modes
- Environmental, social, economic and health benefits
- Reduced traffic congestion

Program components



U.S. Department of Transportation

Federal Highway Administration



NOTE: This thematic chart illustrates the four structural components of a bike share program identified through this study

Cost elements





Federal Highway Administration

- Program planning:
 - Feasibility study
 - Procurement
- Program startup:
 - Equipment
 - Permitting and installation
 - Marketing and outreach
- Sustaining the program:
 - Maintenance and operations
 - Customer service
 - Advertising and marketing*
 - Vendor/contractor payments
 - System evaluation and phasing



How much does it cost?





Administration

Station Size Equipment and Approximate Annual Bikes (Docks) Installation **Operating costs** \$35,000 to \$40,000 \$12,000 to \$15,000 11 6 \$45,000 to \$48,000 15 8 \$18,000 to \$21,000 19 \$53,000 to \$58,000 \$24,000 to \$28,000 10

Source: Interviews with Advisory group (Nov.2011- Jan. 2012)

Source: Zotwheels, Deco Bike, Boulder B-cycle



Funding sources





Federal Highway Administration

ADVERTISING PRIVATE **CUSTOMER** PUBLIC AND GRANTS FEES SPONSORSHIP FEDERAL GRANTS MEMBERSHIP FEES Naming rights • \$45-\$85 – one year • US DOT Health related Advertising • \$15-\$60 - one • US HHS organizations (ex. Logos on Blue Cross/Blue • CDC month equipment and CPPW grants \$15-\$30 - 3 website Shield) • US DOE Active living day/weekly STATE organizations (ex. • \$5-\$7 – daily New Balance) **USAGE FEES** • State Local foundations • Free first 30-60 min. transportation funds Local businesses Additional fee for every 30 min. State DOTs thereafter LOCAL Parking fees

US DOT Funding

FHWA

- Formula
 - CMAQ and TE
- Discretionary/Grant TIGER, TCSP
- Other
 - Non Motorized Transportation Pilot Program

FTA

- Bus Livability
- Paul S. Sarbanes Transit in Parks grant program
- Job Access Reverse Commute



U.S. Department of Transportation

Federal Highway Administration



Issues with Federal Funding



U.S. Department of Transportation Federal Highway Administration

- Not a consistent approach within US DOT
- Funding issues:
 - Federal funding eligibility;
 - Grant administration and contract management;
 - Environmental assessments may be required
 - Buy America—products made of steel or iron;
 - Funds not for operating expenses and maintenance

Source: Denver B-cycle, Deco Bike, Hubway



Business models





of Transportation

Federal Highway Administration

- Overlap between business models
- Multiple influencing factors:
 - Funding sources
 - Institutional capacity
 - Liability concerns
 - Politics
 - Regulations



Source: Boulder B-cycle

Business models





Federal Highway Administration

FOR-PROFIT BUSINESS



NON-PROFIT ORGANIZATION



JURISDICTION OWNED AND MANAGED



Planning



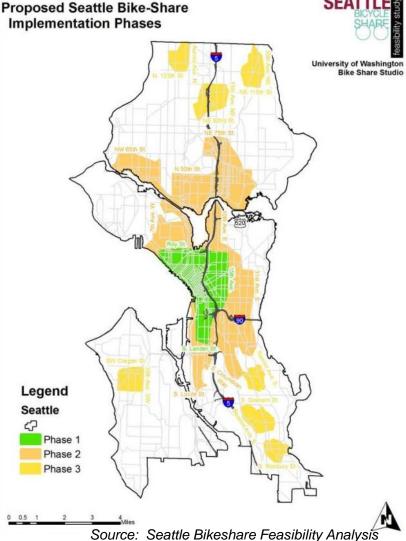


Federal Highway

Administration



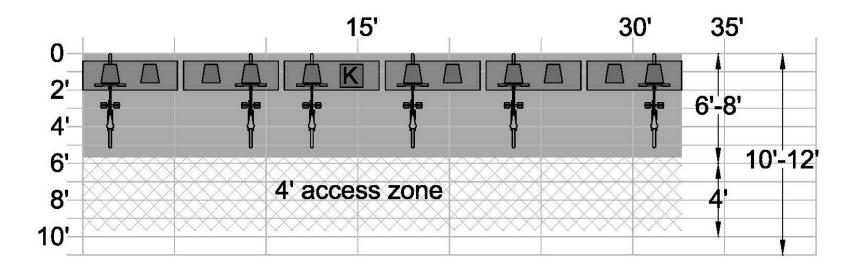
- Potential demand
- Scope and service area
- Business model
- Program costs
- Funding sources
- Technology/equipment
- Phasing
- Pricing
- Vendor/operator selection
- Program administration, contracts, and procurement



Planning Station siting requirements



U.S. Department of Transportation Federal Highway Administration



Docks	Width	Station Depth	Access Depth	Total Depth	Weight
11	31 to 32 feet	6 to 8 feet	4 feet	10' to 12'	3000 to 5000 lbs
15	40 to 42 feet	6 to 8 feet	4 feet	10' to 12'	4500 to 5500 lbs
19	50 to 52 feet	6 to 8 feet	4 feet	10' to 12'	5500 to 6500 lbs

Source: Interviews with Advisory group (Nov.2011- Jan. 2012)

Implementation





Federal Highway Administration

- Service hours and program "season"
- Marketing and sustainability
- Data analysis and redistribution of bicycles



Source: Kaiser Permanente

• Request public input

Promoting safety





Federal Highway Administration

- Very low rates of reported crashes
- Helmet use encouraged
- Bicycle design (heavier, slower, highly visible)
- Educational information on websites and at kiosks
- Links to bicycle safety resources and training



Source: Capital Bikeshare

Getting a helmet for Boston's Hubway

Online - When you sign up for a Hubway membership, you can add a helmet to your purchase while registering. We'll mail it right to your front door.

In a Local Business - Buy a helmet from one of <u>these retailers</u>, many which are located conveniently near Hubway stations.

On the Street - Look for the Boston Bikes and Hubway Street Teams out at busy Hubway stations. We'll have helmets available right where the bikes are. Find out where we will be next on <u>Facebook</u> and <u>Twitter</u>.

Limiting liability





Federal Highway Administration

- Maintain equipment and infrastructure
- Include waivers in rental agreements
- Educate users about safe bicycling
- Strategic partnerships to distribute risk
- Purchase insurance
- Work with local attorneys



Source: Mary Black Foundation

Program success





Federal Highway

- Several successful mid
- to large scale programs
 - Capital Bikeshare
 (1,200 bikes DC Area)
 - Nice Ride
 (1,200 bikes Twin Cities area)
 - Deco Bike
 (800 bikes Miami Beach, FL)
 - San Antonio B-cycle
 (200 bikes)
 - Denver B-Cycle
 (520 bikes Denver)



Source: Capital Bikeshare

Program success





- Successful small scale programs too
 - Spartanburg B-cycle
 (14 bikes/2 stations Spartanburg, SC)









Multiple ways to measure success



Future Programs





- Atlanta, GA
- Aspen, CO
- Austin, TX
- Baltimore, MD
- Charlotte, NC
- Chicago, IL
- Chattanooga, TN*
- City of Los Angeles, CA
- Fort Worth, TX
- Fullerton, CA
- Kansas City, MO*

- New York City, NY
- Monterrey, CA
- Montevallo, AL
- Mountain View, CA
- Oklahoma city, OK
- Palo Alto , CA
- Portland, OR
- Redwood City, CA
- Seattle, WA
- San Francisco, CA
- Houston, TX





Pursuing Social Equity in Bike Sharing Thurs May 3, 1:30PM EST

http://www.nctr.usf.edu/2012/04/social-equitybikesharing-netconference/

Federal Transit Administration National Center for Transit Research (USF)







THANKYOU!

For more updates www.bicyclinginfo.org/bikeshare

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Capital Bikeshare: A National Leader in Bike Sharing





Capital Bikeshare at a Glance



- Capital Bikeshare is a joint transit system operating in D.C., Arlington County, and now the City of Alexandria. The system is government-owned.
- Launched on September 20th, 2010, with 110 stations and 1,100 bikes. System runs 365 days a year (weather permitting), and 24 hours/7 days per week.
- After 17 months of operations, have expanded to 1,450+ bikes at 155 solar powered docking stations due to system's success and popularity. Currently the largest bike sharing system in the country.
- Operated by Alta Bicycle Share, using Public Bicycle Share Company (PBSC) equipment.
- Complements other transport modes and works best in dense urban areas.

Funding/Associated Costs

- Phase 1 of the D.C. portion of Capital Bikeshare was funded by \$6,400,000 from Federal Highways Administration Congestion Mitigation Air Quality Improvement fund.
- Arlington portion of Capital Bikeshare is funded by \$800,000 from combination of State, County and private sector funds in roughly equal thirds.
- Subsequent funding for expansion has been primarily with CMAQ funds for both DC and Arlington. In addition, DC has used program revenue to purchase additional capital equipment (stations, bikes, etc.)
- A 19 dock/10 bike station is approximately \$55,000. The per bike cost is \$1,300. The annual O/M fee per station is \$23,000 (includes bike rebalancing, station/bike maintenance, 24/7, 365 days-a-year call center and Web site.





- Comes equipped with front and rear lights and fenders, step-through frame, RFID chip to track beginning and ending station destinations, basket, safety messages on the head cap, adjustable seat post, three gears and bell.
- Designed for utilitarian usage. Simple, safe, easy to ride.
- After 17 months of usage and more than 1.8 million rides, bikes have held up remarkably well.

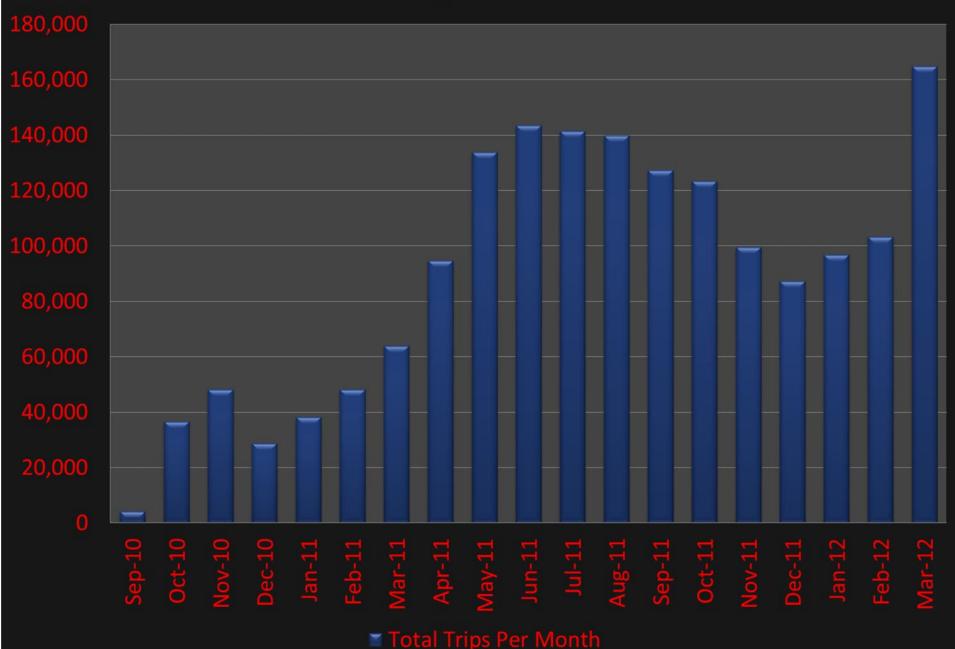


- Consists of a kiosk, map frame, solar panel, and variable number of docks. Stations can be expanded or contracted based on usage trends and patterns.
- Station installation does not require any excavation or construction work. Stations are installed within 3 hours.
- Bikes can be accessed at a station by a member key or credit card.

Statistical Highlights After 17+ Months of Operation

- In 17 + months of operation, there have been a total of 1,866,917 Capital Bikeshare trips, an average of 110,000 trips per month.
- In 17 + months of operation, a total of 1.8 million miles have been traversed on Capital Bikeshare bikes.
- In 17 + months of operation, the busiest station (Dupont Circle and Massachusetts Avenue NW) has had 141,415 beginning and ending trips, an average of 8,900 trips per month.
- In 12 months of operation, there were 1 million trips. Current projections have Capital Bikeshare reaching the next 1 million trips in 8 months.
- In the last year, Alta has rebalanced (picked up and dropped off) more than 290,000 bikes, an average of 24,000 bikes per month or 800 bikes per day.

Total Trips Per Month



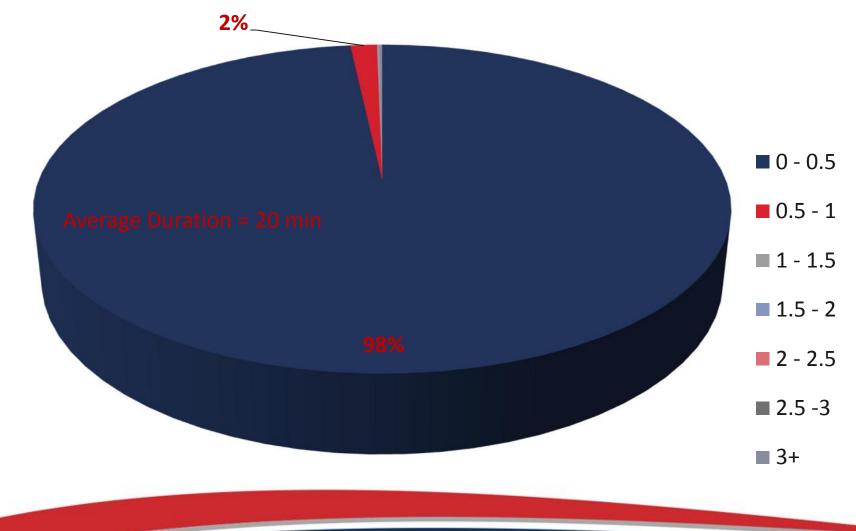
Membership at a Glance



- Capital Bikeshare currently has 16,767 active annual members. Cumulatively, we have had more than 20,000 annual members. In the last three weeks, we have had 1,540 new members sign up, or 514 new members per week.
- 117,000 24-hour members have signed up, more than 3 times the number Minneapolis has had, in approximately the same amount of time.

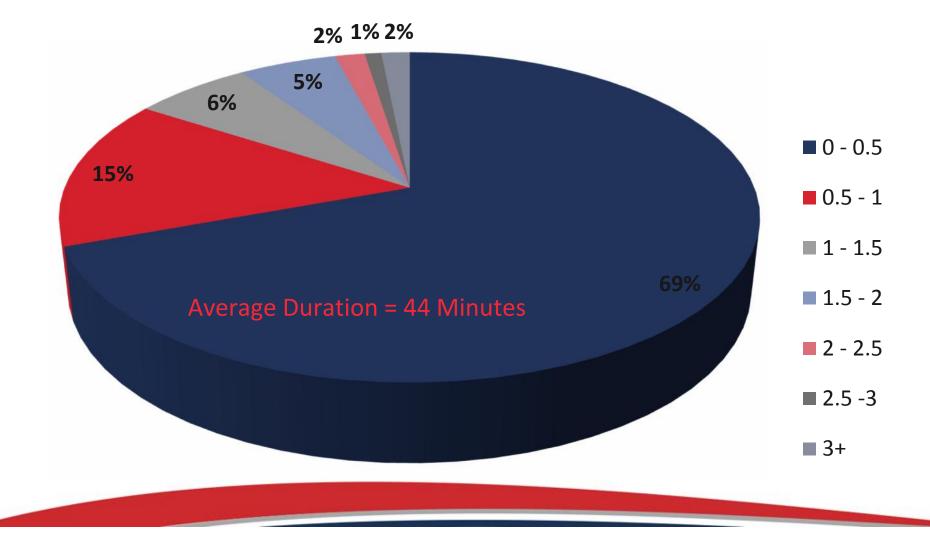
Annual/Monthly Member Ridership

Ride Duration



Casual Member Ridership

Ride Duration

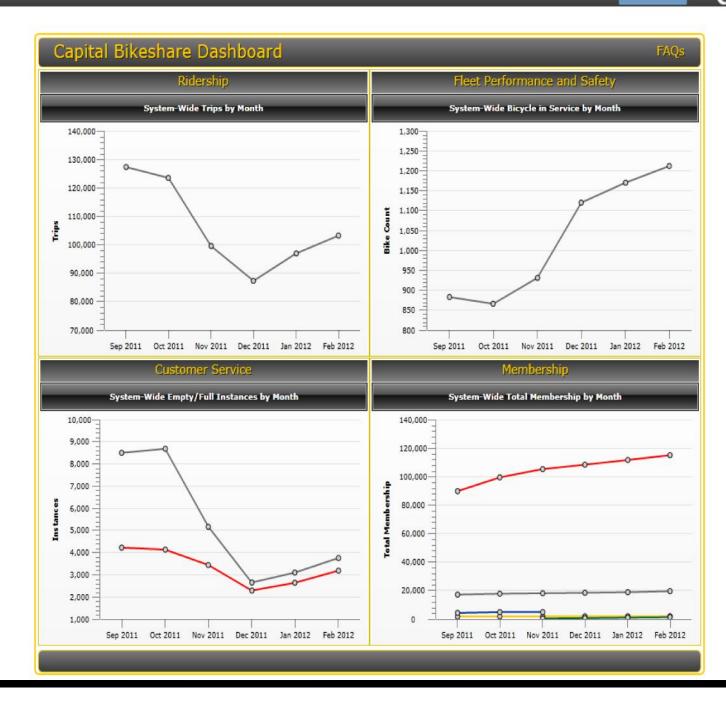


capital bikeshare



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Bikeshare Partnerships

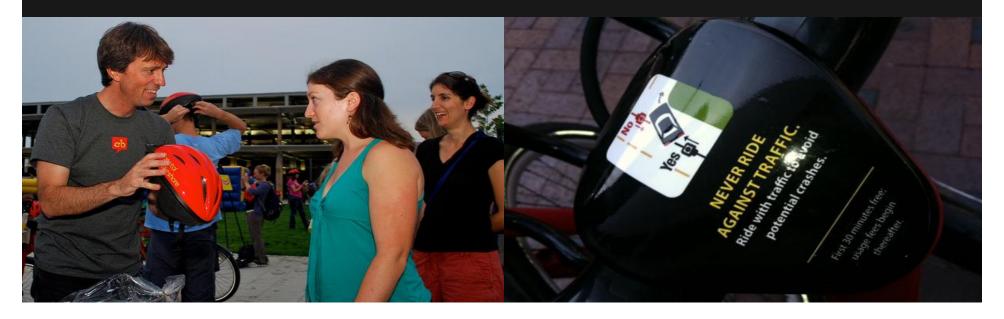
- Currently, Capital Bikeshare features corporate partnership with 32 entities, ranging from local universities, congressional offices, federal agencies, large corporations and non-profits.
- In late 2011, Capital Bikeshare formed a partnership with Bank on DC, providing \$50 memberships to individuals who become "banked," opening up a checking or debit account with United Bank or the District Government Employees Federal Credit Union, two local financial institutions.
- Three weeks ago, Capital Bikeshare joined with Back on My Feet in a pilot program, offering \$50 memberships to 10 Back on My Feet participants, homeless individuals who receive job training, financial literacy courses and access to academic courses. Back on My Feet anticipates saving \$7,000 in transportation costs through the partnership.
- Last summer, Capital Bikeshare sold 500 24-hour memberships and provided 60 helmets to Kimpton Hotels to distribute to their guests. This summer, Capital Bikeshare will partner with other local hotels in offering 24-hour memberships and helmets to tourists and visitors to the region.





MOVING THE HOMELESS FORWARD ONE STEP AT A TIME

Our Latest Initiatives



- As part of the program's commitment to safety, Capital Bikeshare now sells helmets on our Web site for purchase to new and renewing members.
- In addition, Capital Bikeshare added safety decals to the headset of 1,200 bikes. The ten variations of decals recommend that users wear a helmet, strongly discourage riding against traffic and remind users to obey all traffic laws.
- In order to reach those residents who might be unable to afford the up-front cost of an annual membership, we now offer the option of a monthly installment plan towards an annual membership (\$7/month).





San Antonio B-Cycle Municipal Bike Share System

Julia Diana, AICP City of San Antonio Office of Environmental Policy

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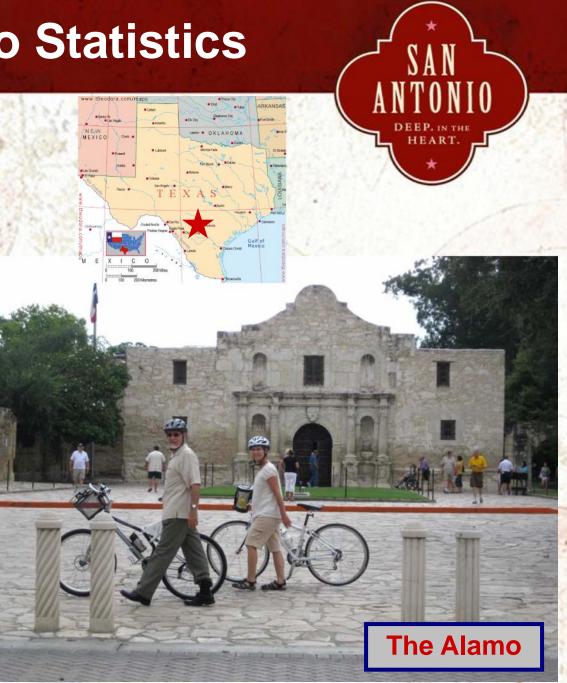
Bike Sharing in the United States: State of the Practice and Guide to Implementation April 26, 2012

San Antonio Statistics

7th LARGEST city in U.S.

Population 1.2 million 368.6 square miles Among largest 50 cities in U.S.:

•45th in bicycling to work at 0.1%
•0.4 miles of facilities per square mile in San Antonio (vs. avg. 1.6 mi/mi2)
•41st out of 50 for total walking and biking levels
•36th out of 50 for per capita funding for bicycle and pedestrian facilities
•2/3 population is obese or overweight



San Antonio B-Cycle Bike Sharing



Providing alternative transportation options that reduce traffic congestion while improving public health



American Recovery and Reinvestment Act Funding:

Energy Efficiency Community Block Grant (EECBG)

\$920,866.00

Communities Putting Prevention to Work (CPPW)

\$339,880.00















SAN NTONIO

DEEP. IN TH HEART.

Procurement

Feasibility study Write RFQ 3 mos. Post & advertise RFQ Pre-submittal conference **Proposal evaluations** Interviews **Proposal selection** 8 mos. **Contract negotiation City Council briefings City Council action**





<u>Take Away:</u> Write a flexible document within the confines of agency legal requirements and funding stipulations, and allow plenty of time for review and comment!

Federal \$ comes with lots of strings!

Approvals, Permitting, Site Prep

Letters of support * Historic Design and Review Commission * Construction permits * Electrical permits * Permission and agreements between San Antonio Bike Share and property owners * Site prep

Take Aways:

•Not everyone thinks Bike Share is a great idea!

•Permitting bike share stations is a novelty and probably doesn't fit within existing municipal guidelines.

•Keeping lines of communication open is essential; Weekly site prep meetings established with conference call option



San Antonio Museum of Art



Program Details

SAN ANTONIO DEEP. IN THE HEART. *

• 230 bikes located at 23 popular origins/destinations downtown

 "Smart" kiosks are customer friendly and accessible in English or Spanish.

• Bikes are theft-resistant and equipped with GPS devices. Kiosks are graffiti and vandalresistant, made in the USA.

Challenge: What is Bike Sharing?

30 Minutes to Everything

YOU GET A FRESH 30 MINUTES EVERY TIME YOU DOCK!



Program Details

Mayor Julian Castro

Maintained and operated by San Antonio Bike Share 501(c)3

•For residents AND tourists

SAN

•<u>Business model:</u> memberships, advertising, corporate sponsorships to support expansion

•Goal: 350 bikes, 35 stations



Program Details



• Affordable memberships are available by the year at \$60, week at \$24, or day at \$10. (Special grant-subsidized \$25 annual passes were promoted the 1st year.)

• Bikes are designed to adjust to users from 5'2" to 6'4", have baskets, and built-in bike locks.



• Specially trained mechanics service and redistribute the bikes daily.



Operations & Maintenance





A few things to think about everyday...

Website * Customer service * Operating hours * Bike maintenance * Kiosk maintenance * Marketing * Promotion * Redistributing bikes

Sponsorships & Advertising



JOIN US IN CELEBRATING THE LAUNCH OF

FRIDAY, THE 29TH OF OCTOBER, 2010 (SPM - 7PM) AT PEARL BREWERY (breeze way) Bike Share Demo & Refreshments Provided

> HOSTED BY BIKE WORLD RSVP TO : kat.gainey@bikeworld.com

San Antonio Bike Share is a next-generation bike-lending program that provides members with access to a fleet of B-Cycle bikes from 14 (and counting) stations placed in key locations in the downtown area.

It's affordable, clean, great for your health, the environment and gets you where you're going!



SAN ANTONIO B CHICLE

HEART

CENTRO

aulinas

sanantonio.bcycle.com

Central Hub



One-stop resource for questions, directions, helmet check-outs, water, accessories, rentals (longer term), tour sign-ups



1st Year Results

Launched March 26, 2011 In the first year, San Antonio B-Cyclers:

•took over **32,000** trips

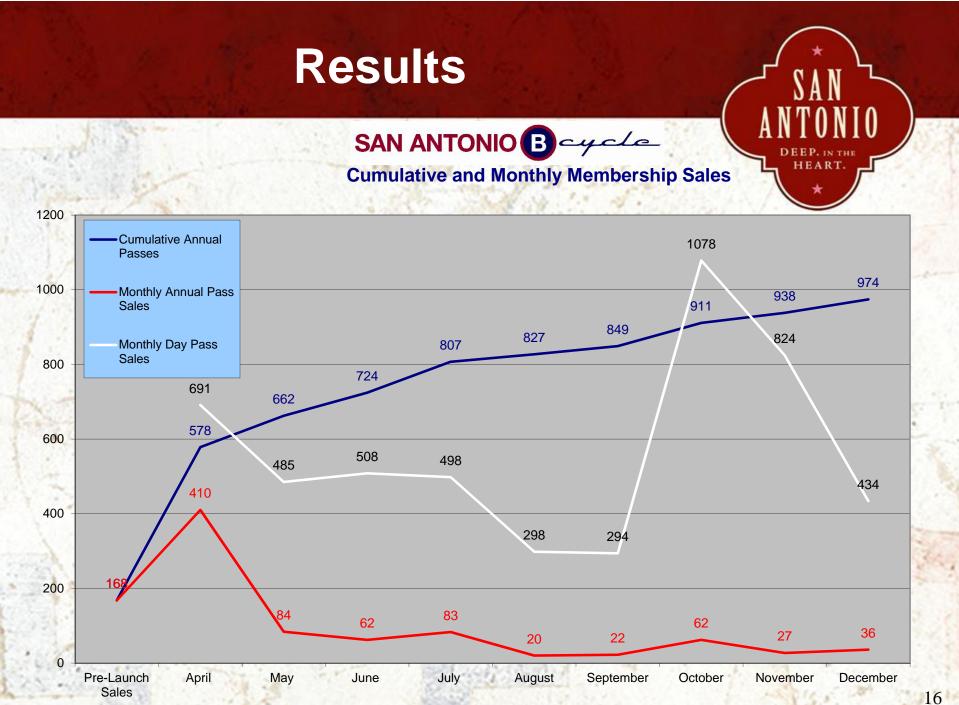
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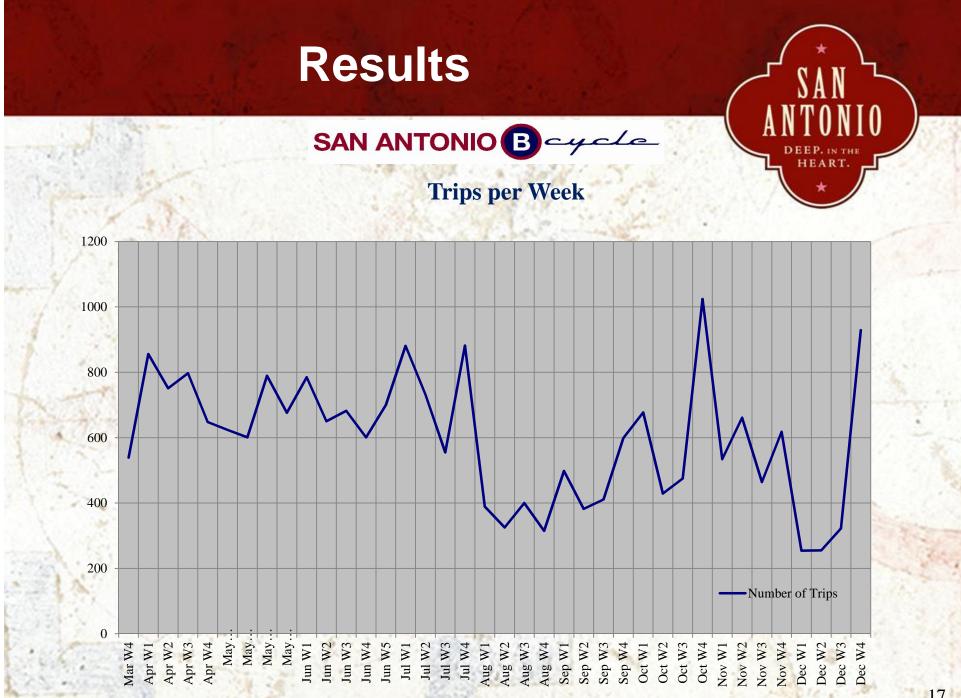
DEEP. IN THEART

- logged 123,674 "alternative transportation" miles
- burned over 5.4 million calories
 - offset 129,069 Ibs. of carbon

Ellis Alley Transit Center is solarpowered and promotes multi-modalism

В





Results



Sunday 2 October 2011 Estimated Maximum Simultaneous Use

СІТҮ	LOCAL TIME OF MAXIMUM	WEATHER	NO OF BIKES IN SYSTEM	MAX % IN USE
Lille	Sunday 16:56	Sunny	678	65.9%
Seoul	Sunday 16:16	Sunny	301	40.5%
San Antonio	Sunday 11:18	Sunny	109	37.6%
London	Sunday 15:52	Sunny	4765	36.9%
Vienna	Sunday 16:48	Sunny	878	30.6%
Saragossa	Sunday 19:44	Sunny	885	25.9%

Source: http://oliverobrien.co.uk/2011/10/vlille-and-bike-in-bath-online-huge-lille-figures/

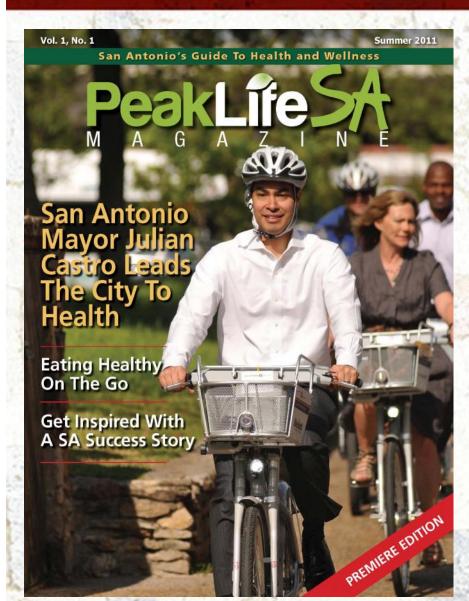
Bragging Rights





San Antonio named 25th fittest city in the March 2012 issue of Men's Fitness!

Accolades



* SAN ANTONIO DEEP. IN THE HEART. *

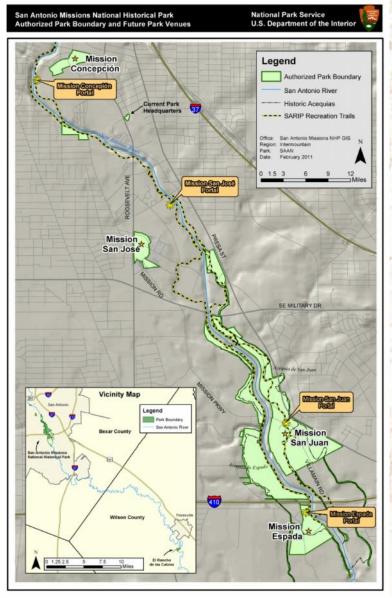
 International Downtown Alliance "Merit Award in Transportation"

•San Antonio Business Journal "Going Green Award"

 Women in Transportation Seminar "Innovative Transportation Solutions Award"

> Downtown Alliance "Best Public/Private Partnership"

New Frontiers: San Antonio River and Missions



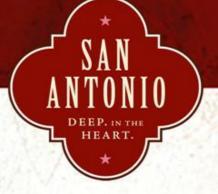
USDOT Paul S. Sarbanes "Transit in Parks" grant

•\$324,000 for 5-7 stations in San Antonio Missions National Historical Park

SAN



Sustainability and Growth





Ongoing support is key to success through the "5 Es"

Engineering

Education

Encouragement

Enforcement

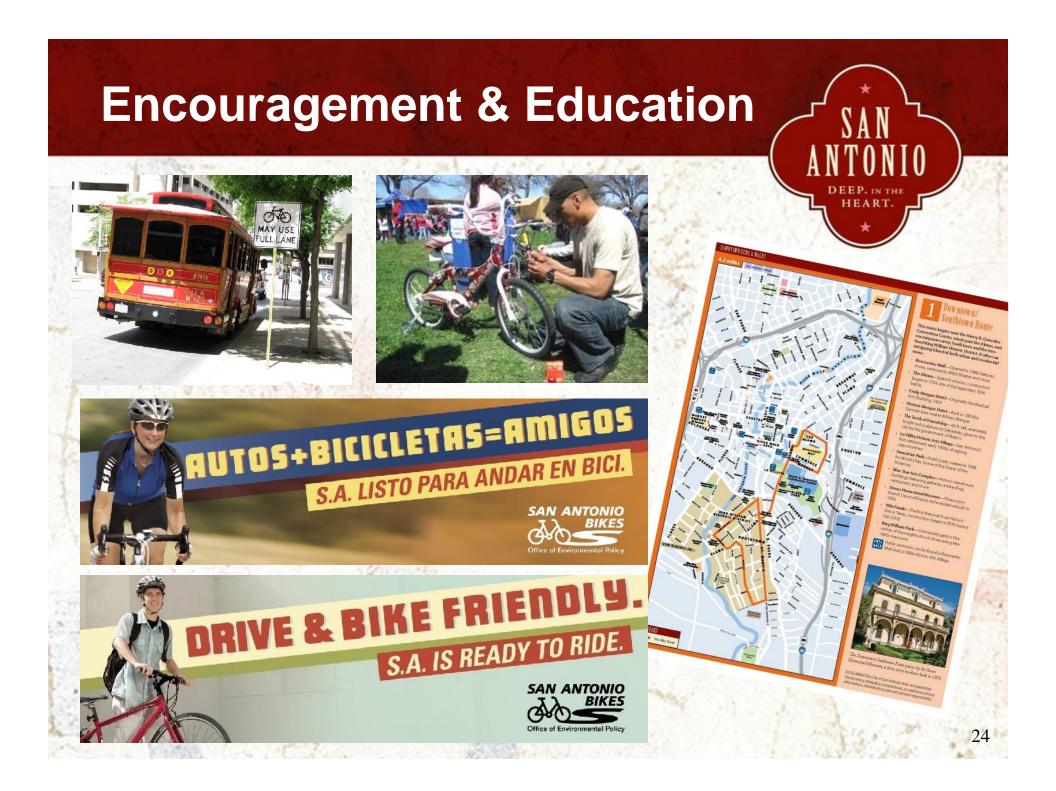
Evaluation













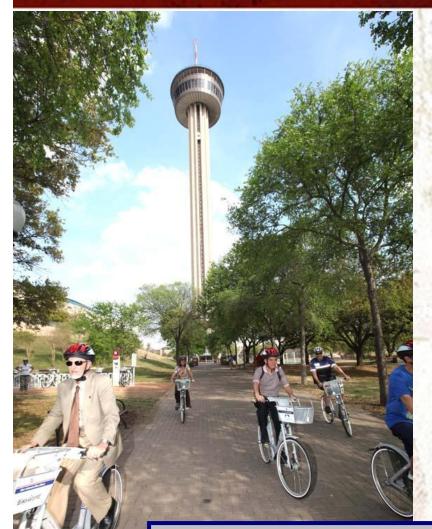
Partnerships



Office of the Mayor and City Council City Manager's Office Metro Health Planning and Development Services Legal Public Works Purchasing

Convention Center Convention and Visitors Bureau Downtown Operations Central Library Parks & Recreation Historic Preservation Office Finance Historic Design and Review Commission, Metropolitan Planning Organization, TxDOT, VIA Metropolitan Transit, Bexar County, Downtown Alliance, San Antonio Conservation Society, Main Plaza Conservancy, St. Paul Square Association, San Antonio Museum of Art, the Pearl, Blue Star, El Tropicano Hotel, Hemisfair Park Redevelopment Corporation, ...





HemisFair Park: Tower of the Americas



SAN

HEART

Julia Diana, AICP

www.sanantonio.gov/oep/sabikes

(210) 207-6321

SAN ANTONIO Bayala

www.sanantonio.bcycle.com

(210) 281-0101

Thank You!

⇒ Archive at <u>http://www.walkinginfo.org/webinars</u>

 Downloadable and streaming recording, transcript, presentation slides

⇒ Questions?

- E-mail RJ Eldridge at reldridge@tooledesign.com
- E-mail Mauricio Hernandez at mhernandez@tooledesign.com
- E-mail Josh Moskowitz at josh.moskowitz@dc.gov
- E-mail Julia Diana at julia.diana@sanantonio.gov