

Proposal for a Bike-Share Program in the ***San Fernando Valley***

*A Sustainable, Cost-Effective Measure to Improve the Region's
Transportation System*

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TABLE OF CONTENTS

TABLE OF CONTENTS	i
ACKNOWLEDGEMENTS	ii
INTRODUCTION	1
CONTEXT	1
Current Issues	3
Transportation	3
Air Quality	5
<i>What Has Been Done to Address these Issues?</i>	6
PROPOSAL	7
<i>Why a bike-share program in the San Fernando Valley?</i>	7
Cost-Effectiveness	7
Sustainable Means of Transport	9
Transportation Efficiency	10
CASE STUDIES	12
OBIS Project	12
Denver B-cycle	13
<i>How do these studies strengthen the case for a bike-share policy in the San Fernando Valley?</i>	15
ANALYSIS	16
SWOT Analysis	16
Benefits and Opportunities	18
Constraints	20
Key Issues and Threats	21
RECOMMENDATIONS	22
IMPLEMENTATION	
Organizations and Agencies That Can Help	25
CONCLUSION	25
REFERENCES	26

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INTRODUCTION

A bike-share program is a cost-effective and sustainable measure to address prevalent transportation issues affecting the San Fernando Valley. By providing a supplementary mode of transport, it has the capacity to increase connectivity between different transportation systems and possibly generate a gradual mode shift among commuters.¹ As public transit use increases and residents become less reliant on their cars, other benefits pertaining to air quality, health, and economic vitality will inherently occur.

The urban fabric embodies the physical form of cities and has the capacity to shape the behaviors of its inhabitants. There lies the potential to inform, encourage and stimulate awareness among its residents. The design of a city's infrastructure is most crucial during the early planning phase. However, when key opportunities are overlooked at the initial stage municipalities may have to employ new methods or technologies to optimize the performance of existing systems within the cityscape.

The San Fernando Valley, located in the northern portion of Los Angeles, is an example of a region whose planning coincided with the introduction of automobiles. Thus, its streetscape was designed with substantial consideration for vehicles rather than pedestrians and other means of non-motorized transport. The Valley exemplifies an "auto-centric"² region, or in other words, an automobile-driven society where residents have developed a heavy reliance on cars due to a number of factors. In the Valley's case, its public transportation system has become disjointed, making it less desirable and convenient for residents in outlying neighborhoods to utilize. One solution to address and bridge these gaps is to provide supplementary modes of travel, such as a bike-share program. In addition to mending the gaps within a transportation system, this type of program also has the ability to promote a shift in people's traveling preferences and ultimately address other issues within the community such as air quality. Though evident change in air quality might seem small in scale, it signifies a major step towards long-term improvement and benefits as more people participate in the program and become less dependent on their cars.

CONTEXT

Located northwest of Downtown Los Angeles with a population of approximately 1,862,804 as of 2009, the San Fernando Valley is a region bordered by the San Gabriel, Santa Susana, and Santa Monica mountain ranges.³ This bowl-like configuration (see *fig. 1-1*) combined

¹ Los Angeles County. Metropolitan Transportation Authority. *Metro Orange Line Mode Shift Study and Greenhouse Gas Emissions Analysis*. Los Angeles: Los Angeles County Metropolitan Transportation Authority (Metro), 2011. Web. 11 Jul 2012. <http://www.metro.net/projects_studies/sustainability/images/Sustainability_Report_MOL.pdf>.

² NYC Streets Renaissance. *Livable Streets - From an Auto-Centric Policy to a City of Great Streets*. New York City: OpenPlans, Project for Public Spaces, and Transportation Alternatives, 2010. Web. 11 Jul. 2012.

³ Roberts, Ph.D., William W., Austin M. Beutner, and Franco Terango. "San Fernando Valley Economic and Real Estate Report." *Are We There Yet? Get Answers Here - The 2010 Valley Economic Summit*. 13 May 2010. Los Angeles: The Valley Economic Alliance & California State University, Northridge, 2010. 14. Web. 11 Jul. 2012.

with its typically dry and sunny climate predisposes the Valley to certain air quality issues already.

Fig. 1-1: San Fernando Valley Aerial.



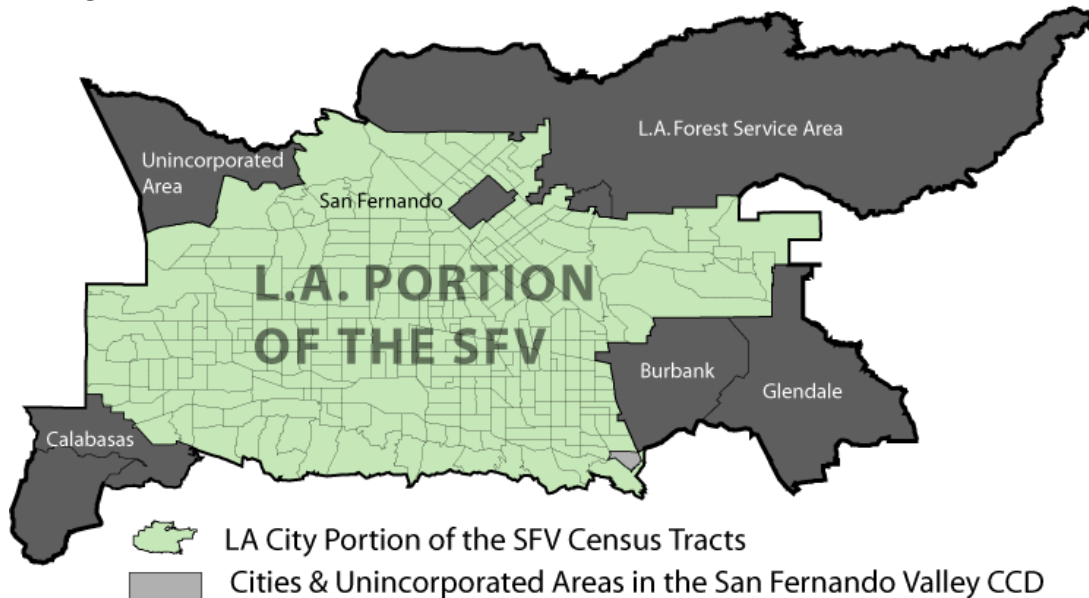
Source: http://www.jmteam.com/San_Fernando_Valley/page_886625.htmls

Before its urban development, the 260 square mile-Valley served as agricultural grounds.⁴ A large part of the region (approximately 77 percent of its land area) falls under the jurisdiction of the City of Los Angeles, while the other portion comprises of five incorporated cities: Burbank, Calabasas, Glendale, Hidden Hills, and San Fernando (see fig. 1-2). Within the Los Angeles portion of the Valley are 27 “named” communities that are not considered legal entities since they all belong to the City of Los Angeles. This cluster of named communities or CCD (County-Census Districts) makes up 47 percent of Los Angeles’ land area and accounts for 37 percent of its population.⁵ This distinction is an important factor to consider since it may affect the outcome of implementation when it comes to funding and other decisions that need to be made such as selecting a vendor to supply the bike-share program across jurisdictional borders.

⁴ "San Fernando Valley." *Encyclopedia Britannica. Encyclopedia Britannica Online Academic Edition*. Encyclopedia Britannica Inc., 2012. Web. 20 Jun. 2012. <<http://www.britannica.com/EBchecked/topic/521119/San-Fernando-Valley>>.

⁵ Roberts, Ph.D., William W., Austin M. Beutner, and Franco Terango. "San Fernando Valley Economic and Real Estate Report." *Are We There Yet? Get Answers Here - The 2010 Valley Economic Summit*. 13 May 2010. Los Angeles: The Valley Economic Alliance & California State University, Northridge, 2010. 14. Web. 11 Jul. 2012.

Fig. 1-2: Map of the San Fernando Valley illustrating adjacencies between the Los Angeles portion of the Valley (which comprises of the “named” communities) and the incorporated cities and other unincorporated areas in the region.⁶



Source: The Valley Economic Alliance & California State University, Northridge, 2010

Current Issues

Transportation

Several issues plague the Valley's current transportation system since its early planning and development phase coincided with the introduction of automobiles. With the design of its streetscape encouraging the use of cars, the Valley evolved into an auto-centric region where residents heavily rely on private vehicles to get around.

Some of the Valley's transportation problems include gaps within its current transit service that result in longer commute times for residents, lack of connectivity between different modes of transportation, and more. Setbacks such as these deter residents from utilizing public transit within the region, leading to another major transportation issue affecting the Valley as well as the overall City of Los Angeles: traffic and congestion.⁷ With residents opting for the use of private cars versus public transportation either for short trips or commutes to work outside of the region, main boulevards of the Valley are highly congested during peak hours.

⁶ Roberts, Ph.D., William W., Austin M. Beutner, and Franco Terango. "San Fernando Valley Economic and Real Estate Report." *Are We There Yet? Get Answers Here - The 2010 Valley Economic Summit*. 13 May 2010. Los Angeles: The Valley Economic Alliance & California State University, Northridge, 2010. 14. Web. 11 Jul. 2012.

⁷ Gordon, Peter, James E. Moore, et al. "Improving Transportation in the San Fernando Valley." *Policy Study No. 249* (1999): 1-89. Reason Foundation. Web. 11 Jul 2012. <<http://reason.org/news/show/improving-transportation-in-th>>.

San Fernando Valley's public transportation system is essentially a network of bus lines. Although there is no regional rail system running through the Valley, the *Metro Orange Line* is a "Metro Liner" which is part of the bus rapid transit services operated by the Los Angeles Metro (see fig. 1-3). Similar to light rail service, it runs on a dedicated busway generally along the east-west axis of the Valley and provides direct connection to the *Metro Red Line* at the North Hollywood station, which marks the start of Los Angeles' Metro Rail system.

Fig. 1-3: Los Angeles Metro Map.



Source: Los Angeles County Metropolitan Transportation Authority

A recent project extended the liner four miles north from the Canoga Station to the Chatsworth Metrolink Station along the north-south axis in the western section of the Valley in an attempt to increase mobility between activity centers and connect the Metro Orange Line with the Metrolink.⁸ Improvements like this one are an indication that some gaps within the Valley's transportation system have been recognized and solutions are being thought of. However, additional connections running north to south throughout the mid-section of the Metro Orange Line should be considered to further increase mobility for those residing in outlying communities of the Valley.

⁸ "Metro Orange Line Extension." *Metro*. Los Angeles County Metropolitan Transportation Authority (Metro), 07 Nov 2011. Web. 11 Jul 2012. <<http://www.metro.net/projects/orangeline/>>.

Within the region, high job concentrations are on the west end of the Valley around Warner Center and also within incorporated cities such as Glendale and Burbank.⁹ Providing a supplementary mode of transportation to bridge gaps between lines can more efficiently mobilize residents from point A to point B and promote the use of public transit. The key is making the Valley's current transportation system, especially a main line like the Metro Orange, more accessible. Many Valley residents are employed outside of the region, hence the bottleneck effect occurs at major arteries and freeways that lead into Downtown as well as adjacent areas like Hollywood, the West Side, Pasadena, and around the LAX airport. As cars are forced to idle at major arteries throughout the Valley, it leads to the next issue of poor air quality within the region.

Air Quality

Factors such as geographic composition, climate, and heavy automobile use make the Valley susceptible to air quality phenomena such as *atmospheric inversions*¹⁰ and *photochemical smog*.¹¹ This results in the retention of emissions from vehicles, manufacturing, and other sources which eventually lead to severe air pollution in the region.

Atmospheric Inversions

Atmospheric inversions occur as temperature rises with increasing altitude whereas it should be decreasing. Owing to a combination of factors such as its geographic composition, climate, emissions from a heavy reliance on cars, and manufacturing processes, temperature inversions are frequent in the Valley. The formation of inversion layers prevent the upward movement of air, retaining moisture and natural or man-made pollutants close to the Valley's floor, resulting in fog and smog. Accumulation of moisture and particulates are most concentrated with lower inversion ceilings and some of the most severe occasions of smog or fog occur in mountainous areas. In some areas of the San Fernando Valley, the polluted air is even confined in both directions: vertically and horizontally.¹²

Photochemical Smog

Another phenomenon that affects air quality in the San Fernando Valley is "photochemical smog,"¹³ which describes the chemical reaction that occurs between sunlight, nitrogen oxides, and volatile organic compounds in the atmosphere. Main

⁹ Gordon, Peter, James E. Moore, et al. "Improving Transportation in the San Fernando Valley." *Policy Study No. 249* (1999): 1-89. Reason Foundation. Web. 11 Jul 2012. <<http://reason.org/news/show/improving-transportation-in-th>>.

¹⁰ "Urban Communities: Greater Los Angeles." *Toxics Release Inventory (TRI) Program*. United States Environmental Protection Agency, 14 Nov 2011. Web. 11 Jul 2012. <<http://www.epa.gov/tri/tridata/tri09/nationalanalysis/tri-urban-comm-la.html>>.

¹¹ Miller, Jr., George Tyler (2002). *Living in the Environment: Principles, Connections, and Solutions (12th Edition)*. Belmont: The Thomson Corporation. pp. 423. ISBN 0-534-37697-5.

¹² "Atmospheric Inversion Layers." *World of Earth Science*. Ed. K. Lee Lerner and Brenda Wilmoth Lerner. Vol. 1. Gale Cengage, 2003: eNotes.com. 11 Jul 2012. <<http://www.enotes.com/atmospheric-inversion-layers-reference/>>.

¹³ Colker, David. "Valley Interview: One of These Days, Smog in L.A. Could Be a Thing of the Past." *Los Angeles Times* 26 Jul 1994. Web. 11 Jul. 2012. <http://articles.latimes.com/1994-07-26/local/me-20100_1_photochemical-smog>.

contributors to this chemical reaction are emissions from motorized vehicles and industrial activities.¹⁴ The occurrence produces airborne particles and ground-level ozone, containing with it a combination of air pollutants like aldehydes, nitrogen oxides (such as nitrogen dioxide), peroxyacyl nitrates, tropospheric ozone and volatile organic compounds. As the ozone lingers closer to the surface of the Earth, it exhibits what we know as smog. On days when weather conditions and atmospheric inversions work hand-in-hand, the speed of smog formation can increase rapidly.

Photochemical smog is an issue stemming from modern industrialization and evident in most modern metropolises, but is still more prominent in sunshine-abundant cities with warmer and dryer climates and heavy use of motorized vehicles like the San Fernando Valley. Encouraging residents to decrease their motorized vehicle use by providing viable transportation alternatives, fewer vehicle trips and miles would be generated, therefore translating to less emissions and pollutants like carbon dioxide, nitrogen oxides, and hydrocarbons released into the air.¹⁵

What Has Been Done to Address these Issues?

There have been a number of capital projects planned and executed by the City of Los Angeles to increase mobility through extension of current transit lines and to make streets more pedestrian and bicycle friendly. The Los Angeles Metro conducted a study that highlights benefits of integrating other transit options like biking and walking into the development of the Metro Orange Line. Some of the potential benefits explored include a reduction of greenhouse gas emissions (GHG) resulting from *mode shifts* (where people reduce their use of one mode of transport and increase their use of another) and how this pertains to VMT (*Vehicle Miles Traveled*).¹⁶

The *County of Los Angeles Bicycle Master Plan* is another report compiled by Alta Planning + Design for the City of Los Angeles Department of Public Works for their use in developing a bicycle master plan for Los Angeles and other regions within the county's jurisdiction such as East San Gabriel Valley, Santa Monica, Westside, and San Fernando Valley, just to name a few. The report addresses issues such as air quality and its relevancy to bike ridership by examining existing statistics for bike ridership for each region and forecasting benefits that would result from the increase in ridership over a period of time.

The latest effort to address transportation and environmental issues in Los Angeles involves a public-private partnership between the City of Los Angeles and *Bike Nation*, a private vendor that will supply the City with 400 stations and 4,000 bicycles around downtown Los Angeles,

¹⁴ Colker, David. "Valley Interview: One of These Days, Smog in L.A. Could Be a Thing of the Past." *Los Angeles Times* 26 Jul 1994. Web. 11 Jul. 2012. <http://articles.latimes.com/1994-07-26/local/me-20100_1_photochemical-smog>.

¹⁵ County of Los Angeles Public Works. *Bicycle Master Plan*. Los Angeles: Alta Planning Design, 2010. Web. 11 Jul. 2012. <[http://dpw.lacounty.gov/pdd/bikepath/bikeplan/docs/bmp/FINAL Bicycle Master Plan.pdf](http://dpw.lacounty.gov/pdd/bikepath/bikeplan/docs/bmp/FINAL%20Bicycle%20Master%20Plan.pdf)>.

¹⁶ Los Angeles County. Metropolitan Transportation Authority. *Metro Orange Line Mode Shift Study and Greenhouse Gas Emissions Analysis*. Los Angeles: Los Angeles County Metropolitan Transportation Authority (Metro), 2011. Web. 11 Jul 2012. <http://www.metro.net/projects_studies/sustainability/images/Sustainability_Report_MOL.pdf>.

Hollywood, Playa del Rey, Westwood and Venice Beach in its initial phase. The City revealed its plans to the public in April 2012 with expectation that installations will occur over the next 18 to 24 months in those areas mentioned. Since the program is privately-funded and operated by the selected vendor, it would require no assistance from city funds. With a 10-year contractual agreement in place, expansion of the program is anticipated to occur in subsequent years. Although San Fernando Valley was not included in the first phase, it should certainly be considered for the program's next round of implementation as it exhibits pertinent issues that can be improved by the bike-share program.¹⁷

PROPOSAL

This proposal places a heavy amount of emphasis on addressing transportation issues in the San Fernando Valley and improving the mobility of its residents. Although other prevalent issues like air quality and economic decline affects the region, focusing efforts to mobilize residents is a more immediate solution in persuading people to change their preference of travel modes. Since improving air quality requires a collaborative effort, it is difficult to detect change right away. Thus, mobility is the selling point in this case. Bringing benefits down to the individual level in the form of shorter commute time and cost savings will urge more people to participate in the bike share program. Eventually, as bike ridership increases and mode shift becomes apparent, air quality and other relevant issues will be addressed.

Why a bike-share program in the San Fernando Valley?

Since the Valley is a developed region that was initially planned for automobile use, its layout is rigid and demolishing existing infrastructures would be a costly and labor-intensive task. The Metro Orange Line was fortunately constructed along a former railroad track, making it possible to span the line across almost the entire length of the east-west axis of the Valley. Future projects of this scale, however, would face numerous obstacles from land acquisition to shortage in funding. Thus, a bike-share policy is an ideal alternative to larger capital projects since it can potentially yield huge benefits while imposing little environmental and financial impact on the City.

Cost-Effectiveness

For the City

A bike-share policy provides the City with a cost-effective measure to improve existing infrastructures to increase connectivity within the current transportation system without high upfront costs of major construction and development. Although Los Angeles' upcoming bike-share program is privately funded and operated by *Bike Nation*, a glimpse of past expenditures demonstrate a substantial cost difference between transit improvement projects and a bike share system as indicated by *Table 2-1*.

¹⁷ Bloomekatz, Ari. "Bike-share program coming to Los Angeles." *Los Angeles Times* 16 Apr 2012. Web. 11 Jul. 2012. <<http://articles.latimes.com/2012/apr/16/local/la-me-0415-ciclaviva-20120416>>.

Table 2-1: Costs of Transit Improvement Projects in Los Angeles.

Project	Cost
Metro Orange Line: a two-lane, fourteen-mile dedicated busway with adjacent bike and pedestrian paths. The natural gas-powered vehicles are given the right-of-way when they pass through the 34 signalized intersections. ¹⁸ (completed in October 2005)	\$324 million construction costs
Metro Orange Line Extension: a four-mile extension of the Metro Orange Line from the Canoga park-and-ride lot (west end of the Valley) towards northwestern portion where the Chatsworth Metrolink Station is located. The project scope also encompasses a few new stations along the extended busway with park-and-ride lots, bicycle/pedestrian path improvements, and other associated elements. ¹⁹ (completion in Summer 2012)	\$215.6 million (plus \$5.4 million for prior planning and environmental development costs)
Bike Nation: Bike Share Program	\$16 million

Source of data: Los Angeles Metropolitan Transportation Authority

For the Commuter

Biking is also a cost-effective means of travel for residents whether it is used for the entire trip length or as a transition between two modes of transport. The diagram below maps a hypothetical trip from the Valley to Downtown Los Angeles using different travel methods to get from point A to point B (see fig. 2-2). Approximated costs associated with each mode of travel are illustrated for comparison.

¹⁸ "Metro Orange Line Extension." *Metro*. Los Angeles County Metropolitan Transportation Authority (Metro), 07 Nov 2011. Web. 11 Jul 2012. <<http://www.metro.net/projects/orangeline/>>.

¹⁹ Los Angeles County. Metropolitan Transportation Authority. *Metro Orange Line Extension - Monthly Project Status Report*. Los Angeles: Los Angeles County Metropolitan Transportation Authority (Metro), 2012. Web. 11 Jul 2012. <http://www.metro.net/projects_studies/pm/images/april_2012_metro_orange_line_extension_mpsr.pdf>.

Fig. 2-2: Comparison between two types or combinations of travel methods residents may take to get from point A (in the Valley) to point B (Downtown Los Angeles). The first uses the bike share system and public transit, while the second employs only private vehicle use.

Method 1: Bike Share + Public Transit

1st Leg:

Bike from Point A to Metro Orange Line (Reseda Station)

Distance: 1.9 mi (11 min.)

Cost: Usage fee is \$0 since the first 30 min. is free; cost incurred is the subscription fee which varies by type

2nd Leg:

Public transit from Metro Orange Line (Reseda Station) to Point B.

Distance: 22.94 mi (1 hr. 19 min.)

Cost: \$2.85

Total trip costs = \$2.85 + subscription fee

Method 2: Private Vehicle

Drive from Point A to Point B.

Distance: 31.70 miles. (24-49 min. depending on traffic)

Total trip costs = \$17.15 (based on AAA est. 54.1 cents/mile)

Source of data: Los Angeles Metropolitan Transportation Authority and Bike Nation

***Point A:** Residence on Reseda/Saticoy to Metro Orange Line

***Point B:** STAPLES Center in Downtown Los Angeles

In the previous figure, the two calculated trips assume a destination outside of the Valley. Since Bike Nation encourages shorter trip lengths by incentivizing with the first 30 minutes free, travelling within the region would be even more cost-effective than private vehicle use.²⁰

Sustainable Means of Transport

Implementing the policy also causes minimal impact on the surrounding built and natural environment. The program increases the efficiency of current systems without requiring major new construction, avoiding resource-intensive activities. This helps to preserve the City's existing infrastructures and the stock of natural resources.

In comparison to automobiles, bikes have little detrimental impact on existing roadways.²¹ By prolonging the life of streets, repairs are not needed as often. This translates to avoided

²⁰ Bloomekatz, Ari. "Bike-share program coming to Los Angeles." *Los Angeles Times* 16 Apr 2012. Web. 11 Jul. 2012. <<http://articles.latimes.com/2012/apr/16/local/la-me-0415-ciclaviva-20120416>>.

²¹ U.S. Department of Transportation. National Capital Region Transportation Planning Board. *Regional Bike-sharing System for the National Capital Region*. Washington: Metropolitan Washington Council of Governments, 2010. Web. <http://www.mwcog.org/uploads/committee-documents/bV5YWLxe_20100820155649.pdf>.

maintenance and repair costs which supports an earlier point made about the policy being cost-effective for the City.

The purpose of a bike share policy is aligned with the environmental goals of Los Angeles Metro as they strive to “reduce single occupancy autos [and] get them to change modes” through various transportation strategies.²² Some of these involve incorporating land use and transportation to create bikeways next to a transit corridor and providing bike parking at rail stations. Providing a sustainable alternative to automobiles in the Valley can increase environmental awareness among the community and potentially create a mode shift. A mode shift occurs as people reduce their automobile use and increase their use of public transit and other alternatives. “Cycling helps increase the uptake of public transport.”²³ As this happens, less VMT (*Vehicle Miles Traveled*) are generated, and emissions from mobile sources are reduced.²⁴ At this stage, it may be difficult to predict the extent of impact that bike-sharing has on overall air quality, but past studies do affirm that the policy has potential to create a mode shift within cities that have implemented the program.

Transportation Efficiency

Serving as a supplementary mode of transport, the bike-share program can increase connectivity between different modes within the Valley’s current transportation system. Since the Metro Orange Line provides Valley residents with a direct transfer to the rest of LA Metro’s subway lines, it is critical to improve mobility to this liner. Regional buses provide service to the Metro Orange Line already, but it may be more beneficial for some residents to bike from their homes directly to the station in order to improve their commute time. Of course, other factors such as frequency of buses and journey-to-work patterns of residents in the immediate area would have to be examined in order to pinpoint specific locations of stations. For the purpose of this document, a general approach of providing bike-sharing services for those who are too far from the Metro Orange Line to walk yet live within comfortable biking distance is illustrated in *fig. 3-3*, where three zones are defined as such:

- Zone 1: Residents who live in this area are within comfortable walking distance to the Metro Orange Line. The general consensus among past case studies suggests that a reasonable distance people are willing to walk to a transit stop is about ¼ to ½ of a mile.²⁵

²² “Metro Environmental.” *Metro*. Los Angeles County Metropolitan Transportation Authority (Metro), 16 Nov 2011. Web. 11 Jul 2012. <<http://www.metro.net/projects/metro-environmental/>>.

²³ Blondel, Benoit, Chloé Mispelon, and Julian Ferguson. European Cyclists’ Federation (ECF). *Cycle More Often 2 Cool Down the Planet! Quantifying CO2 Savings of Cycling*. European Cyclists’ Federation ASBL, 2011. 1-16. Web. 11 Jul 2012. <www.ecf.com/wp-content/uploads/ECF_CO2_WEB.pdf>.

²⁴ Los Angeles County. Metropolitan Transportation Authority. *Metro Orange Line Mode Shift Study and Greenhouse Gas Emissions Analysis*. Los Angeles: Los Angeles County Metropolitan Transportation Authority (Metro), 2011. Web. 11 Jul 2012. <http://www.metro.net/projects_studies/sustainability/images/Sustainability_Report_MOL.pdf>.

²⁵ Fairfax County Virginia. Planning Commission TOD Committee. *Walking Distance Research*. Fairfax: Planning Commission TOD Committee, 2012. Web. 11 Jul 2012. <<http://www.reconnectingamerica.org/assets/Uploads/20060908walkingdistanceabstracts.pdf>>.

- Zone 2: Those within this zone exceed the comfortable walking distance, but are within a comfortable biking distance. These residents will benefit more from biking to the liner rather than waiting for the bus. Past studies indicate that the maximum comfortable biking distance is approximately 2 miles.²⁶
- Zone 3: These residents are outside of the comfortable walking and biking distance; thus, benefit more from taking the bus to connect to the Metro Orange Line.

Fig. 3-3: Defined zones along a section of the Metro Orange Line based on the neighborhoods' proximity to the liner.



Source of original maps: Los Angeles Metropolitan Transportation Authority

Broadly defining these zones allows policymakers to recognize varying needs of residents in different areas. Consideration of area-specific demographics, journey-to-work patterns

²⁶ Fairfax County Virginia. Planning Commission TOD Committee. *Walking Distance Research*. Fairfax: Planning Commission TOD Committee, 2012. Web. 11 Jul 2012. <<http://www.reconnectingamerica.org/assets/Uploads/20060908walkingdistanceabstracts.pdf>>.

and other relevant factors will further aid planners in determining which mode of transportation would be most preferable and beneficial to that neighborhood. Understanding the needs of residents in neighborhoods throughout the Valley will increase mobility and shorten average commuting time, helping to relieve congestion problems throughout major arteries (i.e. main boulevards) and buses during peak hours. For example, making bikes more accessible to Zone 2 residents will prevent overcrowding of buses during peak hours, leaving more room for Zone 3 residents to utilize as their connection to the Metro Orange Line. This strategy can begin to improve the efficiency of the Valley's current transportation system. And by strengthening its public transit, congestion problems at major arteries or boulevards in the region will also be addressed.

CASE STUDIES

Bike-share programs have been enacted throughout European cities and other parts of the world for some time now. These programs generally receive positive feedback from direct users as well as the surrounding local community. It offers a cost-effective measure for cities to address problems like congestion and environmental concerns, more Western cities are embracing the policy. Before it made its way to Los Angeles, the policy of bike-sharing had already been adopted in several U.S. cities such as Denver, Washington D.C., Minneapolis, and Buffalo.²⁷

By examining bike-share programs and resulting benefits in these cities, it is evident that the policy has the capacity to improve air quality through increased bike ridership as well as the ability to mend gaps between existing transportation systems.

The OBIS Project

The OBIS Project was formed with the intent to share and collect information on 50 bike-sharing schemes throughout various European cities. OBIS (Optimising Bike Sharing in European Cities) was a collaborative effort comprised of 16 partners from nine countries and received funding from the EACI (Executive Agency for Competitiveness and Innovation) under the Intelligent Energy Europe Programme. Over the course of three years (September 2008 to August 2011), the project compiled and evaluated data gathered from Bike Sharing Schemes (BSSs) examined in those cities and published them as a resource for relevant stakeholders within the field.²⁸

²⁷ Kisner, Corinne. National League of Cities. Center for Research & Innovation. *City Practice Brief | Integrating Bike Share Programs into a Sustainable Transportation System*. Washington, D.C.: National League of Cities, 2011. Web. 11 Jul 2012. <[https://docs.google.com/viewer?a=v&q= cache:q7Zrae6mWEIJ:www.nlc.org/File%20Library/Find%20City%20Solutions/Research%20Innovation/Sustainability/integrating-bike-share-programs-into-sustainable-transportation-system-cpb-feb11.pdf](https://docs.google.com/viewer?a=v&q=cache:q7Zrae6mWEIJ:www.nlc.org/File%20Library/Find%20City%20Solutions/Research%20Innovation/Sustainability/integrating-bike-share-programs-into-sustainable-transportation-system-cpb-feb11.pdf)>.

²⁸ OBIS. *Optimising Bike Sharing in European Cities – A Handbook*. OBIS Project, Jun 2011. Web. 11 Jul 2012. <http://www.obisproject.com/palio/html.wmedia?_Instance=obis&_Connector=data&_ID=932&_Checksum=814171218>.

The project's ultimate objective was to identify areas of opportunities to use bike-sharing as a means of promoting cleaner, more sustainable transportation alternatives, particularly within the urban context. Data published by the project revealed that people substituting private motorized transport with the bike share program varied. The extent to which the policy was able to generate shifts in society's mode of travel preference depended on a number of other factors like demographics, live and work situations, scale of implementation, and so forth. This alludes to the fact that bike-sharing is not a one-size-fits-all solution to transportation issues across all metropolises. Nonetheless, the study does assert that bike-sharing is capable of provoking some sort of mode shift among residents (see *table 4-1*).

Table 4-1: Extent to which bike share schemes (BBS) in studied cities were able to shift trips.²⁹

Transport modes substituted by BSSs												
	>500,000				>100,000					<100,000		
City provided with BSS	Barcelona - E	Lyon - F	Milano - I	Stockholm - SE	Rennes - FR	Bari - I	Rimini - I	Parma - I	Brescia - I	Cuneo - I	Bolzano - I	Senigallia - I
% of Users who substitute other Transport Modes with BSS	NA	98.00	71.05	100.00	83.00	80.77	71.43	92.31	67.86	90.00	70.00	56.25
Transport Mode substituted by BSS (%)												
Motorized Private Transport	65.77	10.00	29.03	5.15	19.00	28.04	36.36	20.83	12.50	44.44	23.82	79.22
Public Transport	7.79	46.00	48.39	58.06	46.00	27.26	15.15	33.33	50.00	16.67	35.72	0.00
Own Bike	5.12	6.00	12.90	9.71	2.00	21.98	15.15	4.17	20.83	11.11	4.73	4.13
Walking	21.22	38.00	9.68	26.62	33.00	22.71	33.33	41.67	16.67	27.78	35.72	16.65
Motorised Transport	73.56	56.00	77.42	63.21	65.00	55.30	51.52	54.17	62.50	61.11	59.54	79.22
Non Motorised Transport	26.34	44.00	22.58	36.33	35.00	44.70	48.48	45.83	37.50	38.89	40.46	20.78

Source: OBIS Project

Denver B-cycle

Denver launched its *B-cycle* bike-share program in spring of 2010. The automated, public bike-sharing system is owned and operated by a non-profit organization called *Denver Bike Sharing*. It consists of 520 bicycles and 52 stations dispersed throughout Denver's downtown and its surrounding neighborhoods. Through the *B-cycle* website, members can access their personal pages and view their ride history, making it possible to keep track of the program's progress. For the City, bike-sharing provides a cost-effective measure to reduce greenhouse gas emissions (GHG) by making an affordable,

²⁹ Blondel, Benoit, Chloé Mispelon, and Julian Ferguson. European Cyclists' Federation (ECF). *Cycle More Often 2 Cool Down the Planet! Quantifying CO2 Savings of Cycling*. European Cyclists' Federation ASBL, 2011. 1-16. Web. 11 Jul 2012. <www.ecf.com/wp-content/uploads/ECF_CO2_WEB.pdf>.

alternative means of transportation available to residents and also aligns with Denver's goals as outlined in its *Strategic Transportation Plan* and *Climate Action Plan*.³⁰ The program's vision is "to help create a shift in Denver's transportation culture that supports the City of Denver's goal to increase its bicycle commuting population to 10 percent of all commuters by 2010."³¹ Its mission is to provide residents and visitors an alternative form of public transit that is both complementary and integrated into the City's current system while still preserving the environment.

After its first year of operation, the program's *2011 Annual Report* indicated progress had been made in areas such as air quality and transportation. Based on survey responses from members (with data gathered and interpreted by Andy Duvall, DBS Director and Research Assistant Professor at University of Colorado, Denver) 36% of Denver B-cycle trips replaced car trips in 2011. The survey which compared 2010 responses to 2011 indicated the following changes in categories relevant to air quality and transportation (see table 4-2):

Table 4-2: Possible correlation between transportation preferences and air quality indicated by responses from surveyed B-Cycle members.

	TRANSPORTATION		AIR QUALITY	
	Total Miles Ridden (mi)	Gallons of Gasoline Not Used (gal)	Pounds of Carbon Emissions Avoided (lbs.)	Pounds of Toxic Air Pollutants Avoided (lbs.)
2011	431,817 mi	37,101 gal	729,783 lbs.	22,476 lbs.
2010	211,111 mi	15,857 gal	311,900 lbs.	9,606 lbs.
Percent Increase	105%	134%	134%	134%

Source of data: Denver Bike Sharing - 2011 Annual Report

The report breaks down riders into two groups based on membership term: Annual Members and Short-Term Members. The Annual Member is defined as those who typically rode during the weekdays and rented from the same stations at the same times throughout the week, indicating that bikes were being used for work related commutes. Statistics on Annual Members also pointed out that approximately 16% used the bikes for their entire trip and 32% used them to get from transit stops to their final destination. After one year of operation, Annual Memberships increased 50% to a total of 2,675, and 72% of

³⁰ Kisner, Corinne. National League of Cities. Center for Research & Innovation. *City Practice Brief | Integrating Bike Share Programs into a Sustainable Transportation System*. Washington, D.C.: National League of Cities, 2011. Web. 11 Jul 2012. <<https://docs.google.com/viewer?a=v&q=cache:q7Zrae6mWEIJ:www.nlc.org/File%20Library/Find%20City%20Solutions/Research%20Innovation/Sustainability/integrating-bike-share-programs-into-sustainable-transportation-system-cpb-feb11.pdf>>.

³¹ B-Cycle. Denver Bike Sharing. *2011 Annual Report*. Denver: Denver Bike Sharing, 2012. Web. <http://denverbikesharing.org/files/DBS_2011_Annual_Report.pdf>.

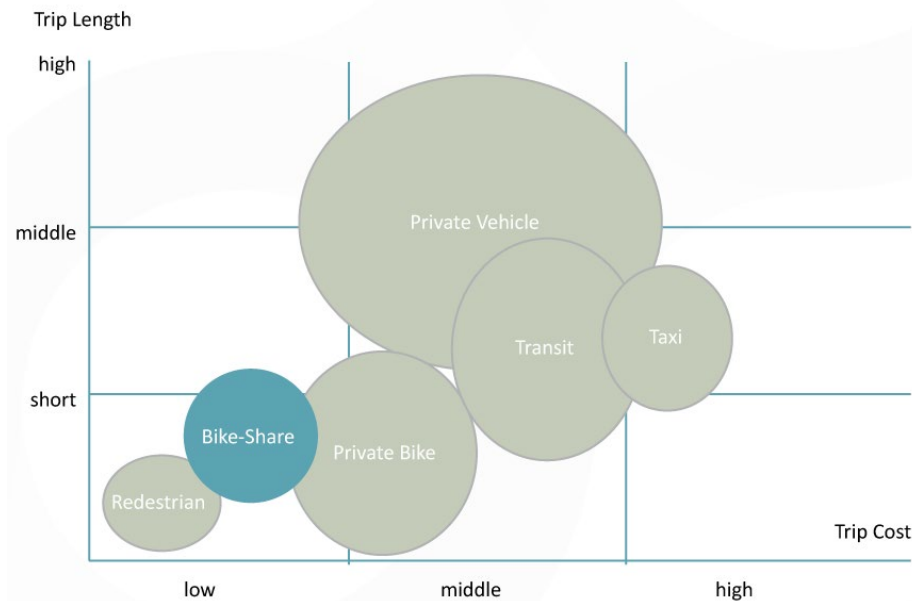
members credit Denver's *B-cycle* for their increased usage of bikes. The Short-Term Member are those who ride more during the weekend and in groups, suggesting the bikes are also used for recreational activities. Survey data from this group exhibits a 29% increase in ridership from 2010 to 2011.³²

How do these case studies support the proposal for a bike-share policy in the San Fernando Valley?

It is apparent that the case studies examined for the proposal share similar viewpoints on the purpose of a bike share policy and its role in society, specifically a program that is implemented in the urban context. The data collected and presented for the case studies strengthen the view of bike share as a low-cost measure to improve mobility within the urban landscape (see *fig. 4-3*). There is also seems to be a general consensus among private vendors or bike share suppliers that the bikes are meant to be used for shorter trips within the region. This philosophy of shorter regional trips (and distances) complements the Valley's layout since most amenities and residential areas are close enough in proximity that biking to get from Point A to Point B is feasible and comfortable.

In regards to tackling on issues such as air quality, the case studies affirm the belief that bike share has a potential to generate mode shift among society. As mentioned previously, this would lead to avoided VMT (*Vehicle Miles Travelled*) and eventually reduced greenhouse gas emissions. In this manner (see *fig. 4-4*), issues of air quality hovering the San Fernando Valley will be addressed in due time.

Fig. 4-3: The Role of Bicycle in Urban Mobility.



Source: Quay Communications Inc.

³² B-Cycle. Denver Bike Sharing. *2011 Annual Report*. Denver: Denver Bike Sharing, 2012. Web. <http://denverbikesharing.org/files/DBS_2011_Annual_Report.pdf>.

Fig. 4-4: Case studies examined for this proposal share a common view that increased bike ridership can provoke a mode shift among residents. As a result, less VMT (Vehicle Miles Travelled) is generated, leading to a reduction of GHG (Greenhouse Gas) emissions and eventually air quality benefits.

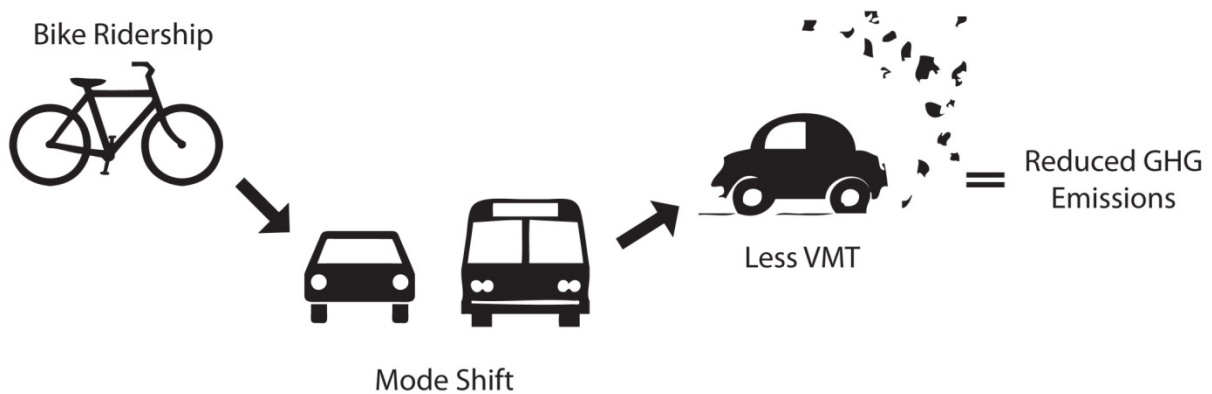


Diagram by Natan Apavatjirut, Pratt Institute, 2012

ANALYSIS

SWOT Analysis

In order to evaluate a potential bike-share program in the San Fernando Valley, a “SWOT Analysis” has been performed to identify strengths, weaknesses, opportunities, and threats of implementing the policy.³³ In the diagram the strengths and weaknesses represent existing conditions while opportunities and threats signify possible future conditions (see table 5-1). By performing the analysis, decision makers are provided an overview of the policy and a glimpse of what aspects are strongest and where the greatest opportunities are.

Table 5-1: SWOT Analysis for a Bike-Share Policy in the San Fernando Valley.

	Positive	Negative
Existing Conditions	<p>Strengths</p> <p>Ability to mend gaps within the current public transportation system through a supplementary mode of travel between transit lines and stops.</p> <p>Stimulates environmental awareness among the community by providing a sustainable means of transport and promotes multi- and intermodal travel among residents. Multimodal travel involves the use of different modes for different trips while intermodal refers to</p>	<p>Weaknesses</p> <p>Timing: Implementation may take years from initial proposal since San Fernando Valley comprises of several municipalities and approval from various departments governing each city will be required.</p> <p>Funding: Funding issues exists across different jurisdictions and municipal borders even if a private vendor is financing and operating the bike-share program without assistance from</p>

³³ "West Michigan Shoreline Regional Development Commission." *Steering Committee SWOT Analysis: Assessing Your Current Situation*. HNTB, 21 Aug 2002. Web. 11 Jul 2012. <<http://www.wmsrdc.org/Download/MAP/Appendix C.pdf>>.

	<p>the use of various modes in one trip chain.³⁴</p> <p>Alleviates congested boulevards during peak hours by encouraging people to use public transit.</p> <p>Provides a cost-effective measure for the City to improve infrastructure with limited impact to the natural environment.</p> <p>Gradually shifts commuting patterns towards public transit use versus vehicle use, eventually improving air quality as the amount of carbon emissions released into the air lessens.</p> <p>Health benefits associated with clean air will occur overtime as air quality is improved.</p>	<p>city funds.</p> <p><u>Topography of the San Fernando Valley:</u> Steep, undulating streets in some areas of the Valley can physically inhibit bicyclists and deter them from bike-traveling.³⁵</p> <p><u>Lack of bike-friendly infrastructures:</u> Wide streets encourage drivers to speed beyond the limit and pose danger to bicyclists even with designated bike lanes in place.</p> <p>Minimal amount of bike-related facilities such as showers, lockers, and dressing rooms to accommodate bicyclists, especially those that bike to work.</p>
Possible Future Conditions	<p>Opportunities</p> <p><u>Flexibility in the program:</u> Use of modular forms and sustainable technology such as solar power to allow bike stations to stand alone (without requiring power from The Grid).</p> <p>Station can be disassembled and relocated to another if one location exhibits low ridership.</p> <p><u>Economic revival for retail shops:</u> May increase exposure for retail storefronts in the Valley since people are passing by at slower speeds.³⁶</p> <p><u>Improved overall health of community:</u> Promotes physical activity within the community, leading to improved health of overall community.</p>	<p>Threats</p> <p><u>Financial challenges:</u> Lack of profitability for the selected private vendor who supplies all the components that goes into a bike-sharing system.</p> <p><u>Low ridership:</u> May be difficult to shift people's commuting patterns.</p> <p><u>Potential competitors:</u> Other bike-share companies seeking to introduce their programs to the City may threaten the selected vendor.</p> <p>Cities within San Fernando Valley may end up using different suppliers, making it difficult to standardize the policy in the region.</p>

³⁴ Blondel, Benoit, Chloé Mispelon, and Julian Ferguson. European Cyclists' Federation (ECF). *Cycle More Often 2 Cool Down the Planet! Quantifying CO2 Savings of Cycling*. European Cyclists' Federation ASBL, 2011. 1-16. Web. 11 Jul 2012. <www.ecf.com/wp-content/uploads/ECF_CO2_WEB.pdf>.

³⁵ Gordon, Peter, James E. Moore, et al. "Improving Transportation in the San Fernando Valley." *Policy Study No. 249* (1999): 1-89. *Reason Foundation*. Web. 11 Jul 2012. <<http://reason.org/news/show/improving-transportation-in-th>>.

³⁶ Kisner, Corinne. National League of Cities. Center for Research & Innovation. *City Practice Brief | Integrating Bike Share Programs into a Sustainable Transportation System*. Washington, D.C.: National League of Cities, 2011. Web. 11 Jul 2012. <<https://docs.google.com/viewer?a=v&q=cache:q7Zrae6mWEIJ:www.nlc.org/File%20Library/Find%20City%20Solutions/Research%20Innovation/Sustainability/integrating-bike-share-programs-into-sustainable-transportation-system-cpb-feb11.pdf>>.

	<p><u>Advertising:</u> Provides opportunities for sponsorships and generation of revenue from leasing out advertising space along bike stations.</p>	
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Source of template: West Michigan Shoreline Regional Development Commission

Benefits and Opportunities

As more residents use public transit rather than personal vehicles, the congestion on major boulevards during peak hours will also be alleviated. Having less cars in the idle state will reduce emissions and contributing further to the improvement of overall air quality. This is beneficial to adjacent cities and the rest of the planet since any reduction in the amount of carbon emissions released into the air is a global benefit.

Other opportunities that lie within the bike-share policy or may occur as a result of implementing it are flexibility in the program, economic revival of the Valley's stagnant retail shops, overall health benefits for the community through increased physical activity, and advertising space to provide supplemental revenue to the bike vendor to ensure profitability.

Designing bike stations to be modular in form or as a kit of parts makes it possible for components to be disassembled and reassembled with ease, enabling the policy to readjust itself when necessary. If one area exhibits low ridership, the stations can be relocated to a more viable spot. Since the structures are not intended to be permanently integrated into the site, it causes little impact to the surrounding built and natural environment. Employing innovative technology such as solar panels also brings bike-stations one step closer to becoming stand-alone entities that would not require power from The Grid. This concept has been explored and put into practice in Washington D.C.'s *Capital Bikeshare* program in order to transfer bike-stations from one location to another as needed.³⁷

Economic opportunities that could come out of the policy include reviving some of the Valley's seemingly quiet retail shops that have become unnoticeable to the community and providing advertising space for local businesses which can rally sponsorships to support and ensure the longevity of bike-share operations.

Biking increases exposure of retail storefronts as people pass by at slower speeds than they do in motorized vehicles and are more likely to notice the shops. According to a

³⁷ Kisner, Corinne. National League of Cities. Center for Research & Innovation. *City Practice Brief | Integrating Bike Share Programs into a Sustainable Transportation System*. Washington, D.C.: National League of Cities, 2011. Web. 11 Jul 2012. <<https://docs.google.com/viewer?a=v&q=cache:q7Zrae6mWEIJ:www.nlc.org/File%20Library/Find%20City%20Solutions/Research%20Innovation/Sustainability/integrating-bike-share-programs-into-sustainable-transportation-system-cpb-feb11.pdf>>.

2009 study conducted by *Clean Air Partnership* on Bloor Street, a commercial corridor in Toronto, Ontario, it was reported that people who biked and walked in this area spent more money in the area per month than those who drove there.³⁸ Amenities such as markets and restaurants are peppered throughout the Valley and usually in the same vicinity as residential neighborhoods so a bike-share system would encourage residents to spend money locally as opposed to driving outside of the region for convenience sake. This poses significant opportunities for stagnant retail areas throughout the Valley.³⁹ Advertising opportunities also contribute to the region's overall economic development and opens up doors to public and private partnerships to help generate supplemental revenue for the bike supplier. By leasing out advertising space to local businesses, the bike stations themselves can steer patrons towards inconspicuous retail shops. For small businesses struggling financially, the public and private sector can collaborate to provide subsidies (i.e. for costs of advertising space) in order to alleviate further financial burden on stores.

Even though this report does not focus on any prevailing health issues currently affecting the Valley, increased physical activity is beneficial to one's overall health.⁴⁰ A bike-share program makes biking more accessible and convenient for residents since it does not require the purchasing of and maintenance that a personal bike would need. Most bike-share programs even provide incentives (i.e. the first 30 minutes are free of charge) to promote frequent yet short trips so people are given more reasons to bike often and increase their overall level of physical activity. In the document prepared by *Alta Planning + Design* for the City of Los Angeles Department of Public Works, statistics showed that many Valley residents use bikes for running errands within the region which parallels the basis of bike-sharing. The report also indicated that a majority of those utilizing the Metro Orange Line arrived by bike rather than car, affirming that providing bike-share stations throughout the region to connect residents to this transit line is essential.⁴¹

³⁸ Clean Air Partnership, "Bike Lanes, On-Street Parking and Business: A study of Bloor Street in Toronto's Annex Neighborhood," February 2009. Web. 11 Jul 2012. <<http://www.cleanairpartnership.org/pdf/bike-lanesparking.pdf>>.

³⁹ Roberts, Ph.D., William W., Austin M. Beutner, and Franco Terango. "San Fernando Valley Economic and Real Estate Report." *Are We There Yet? Get Answers Here - The 2010 Valley Economic Summit*. 13 May 2010. Los Angeles: The Valley Economic Alliance & California State University, Northridge, 2010. 1-56. Web. 11 Jul. 2012.

⁴⁰ Kisner, Corinne. National League of Cities. Center for Research & Innovation. *City Practice Brief | Integrating Bike Share Programs into a Sustainable Transportation System*. Washington, D.C.: National League of Cities, 2011. Web. 11 Jul 2012. <<https://docs.google.com/viewer?a=v&q=cache:q7Zrae6mWEIJ:www.nlc.org/File%20Library/Find%20City%20Solutions/Research%20Innovation/Sustainability/integrating-bike-share-programs-into-sustainable-transportation-system-cpb-feb11.pdf>>

⁴¹ County of Los Angeles Public Works. *Bicycle Master Plan*. Los Angeles: Alta Planning Design, 2010. Web. 11 Jul. 2012. <[http://dpw.lacounty.gov/pdd/bikepath/bikeplan/docs/bmp/FINAL Bicycle Master Plan.pdf](http://dpw.lacounty.gov/pdd/bikepath/bikeplan/docs/bmp/FINAL%20Bicycle%20Master%20Plan.pdf)>.

Constraints

Timing and Funding Across Municipal Borders

Some weaknesses that currently impair the success of a bike-share program in the San Fernando Valley are largely attributed to the fact that it is comprised of a few municipalities (see *fig. 5-2*). Due to its composition, the region currently experiences issues with timing and funding of projects. A proposal like the bike-share policy should be viewed from a broader perspective to achieve a comprehensive system that meets the mobility needs of all, but when several municipal borders exist within an area there are bound to be conflicts of city agendas. Obtaining all necessary approvals from various departments for one district is already a time-consuming task. Having to go through this process a few more times to gain department approvals for all municipalities within the San Fernando Valley further extends the time period between point of initial proposal (for the policy) to actual implementation (execution of the project). During this time gap, air quality worsens (assuming that no other actions are taken) and transportation issues continue to dissuade residents from utilizing public transit.

Fig. 5-2: The five incorporated cities within the San Fernando Valley.



Source: <http://www.valleybookkeepers.com/San%20Fernando%20valley.jpg>

Topography and Existing Infrastructures

Some parts of the Valley are characterized by steep, undulating hills which do not pose a challenge to drivers.⁴² To bicyclists though, a slight incline is enough to cause physical discomfort and deter travellers from using the same path again.

The minimal amount of bike-friendly infrastructures also reveals another weakness in the Valley's current conditions that can prevent the program's goals from fully being realized. Although there are ongoing efforts by the City to construct new bike lanes and improve upon the existing network in terms of efficiency and connectivity, the region consists of wide streets that encourage drivers to travel at high speeds, putting bicyclists in potentially harmful situations.

Another attribute that hampers a widespread acceptance and use of bicycles in San Fernando Valley is the lacking quantity of bike-related facilities (like showers, lockers, changing rooms, etc.) to accommodate bicyclists when they reach transit stops and stations. This is especially important to those commuting to work by bike. In order to shift people's preference from personal vehicles towards bicycles and other forms of public transit, providing these amenities is crucial since convenience is a major factor people considering in determining which method to take.

Key Issues and Threats

Aside from current constraints set forth by the Valley's existing conditions, there are also future issues and threats that may hinder the progress and outcome of adopting a bike-share policy in the region. Such threats include financial challenges for the selected bike-share vendor, low ridership, and potential competition for the selected vendor as other suppliers seek to supply the same region with their bike-sharing system.

The first threat involves financial challenges for the selected private vendor since the City of Los Angeles is not providing any financial assistance for the upcoming bike-share program. Although a public-private partnership has evolved to develop and facilitate the program, no City funds are being used. Thus, the pressure rests on the selected supplier to ensure profitability by maintaining an adequate number of customers to keep their services going, especially since they have a 10-year contract with the City. If ridership does not meet the minimum requirement to keep the company afloat, the lifespan of a bike-share program in the region will be threatened.

Potential competitors attempting to introduce their bike-share systems also threaten the City of Los Angeles' selected vendor. With the region comprising of a few municipalities,

⁴² Gordon, Peter, James E. Moore, et al. "Improving Transportation in the San Fernando Valley." *Policy Study No. 249* (1999): 1-89. *Reason Foundation*. Web. 11 Jul 2012. <<http://reason.org/news/show/improving-transportation-in-th>>.

cities within the San Fernando Valley region that are not under the jurisdiction of the City of Los Angeles can exercise their power to use a different vendor. If this occurs, it would make it difficult to establish a standard policy throughout the region as a whole and what is meant to be a holistic, efficient system could become fragmented.

RECOMMENDATIONS

The following are recommendations (defined as objectives and initiatives) that can be executed in preparation for the region's bike share program. Some target dates are set with a 2-year timeframe in mind since the initial phase of implementation for the upcoming Los Angeles bike share program is scheduled to occur over the course of 18-24 months. So it has been assumed for the purpose of this document that the first phase of installations would need to be completed before the start of the next. On the other hand, these are preliminary recommendations that are dependent on a number of additional factors such as the availability of funds and resources, support and more.

Objective 1: Improve mobility for residents commuting outside of the Valley to work in downtown and adjacent regions by implementing a bike-share program.

- Initiative 1: *Broadly define zones along the Metro Orange Line to effectively decrease commuting times for residents depending on their proximity to the liner.*
- Initiative 2: *Prioritize bike-station installations based on forecasted ridership levels and benefits per CCD (County-Census Districts) and incorporated city within the San Fernando Valley.*
- Initiative 3: *Initiate bike-station placements at viable locations as suggested by Initiatives 1 and 2. Begin installing bike-stations in Zone 2 as defined through Initiative 1 by the year 2014.*

Objective 2: Improve mobility for residents traveling within the San Fernando Valley region through a bike-share program.

- Initiative 1: *Identify key amenities, educational facilities, etc. in the Valley that show potential for high ridership.*
- Initiative 2: *Identify stagnant retail shopping districts or streets so that bike-stations may be situated in a way to promote local spending and contribute to the Valley's economic growth.*

Objective 3: Stimulate and encourage the use of more sustainable transportation means among the Valley residents.

- Initiative 1: *Establish a baseline documenting current trends in commuting patterns among residents in the region for later comparison of potential mode*

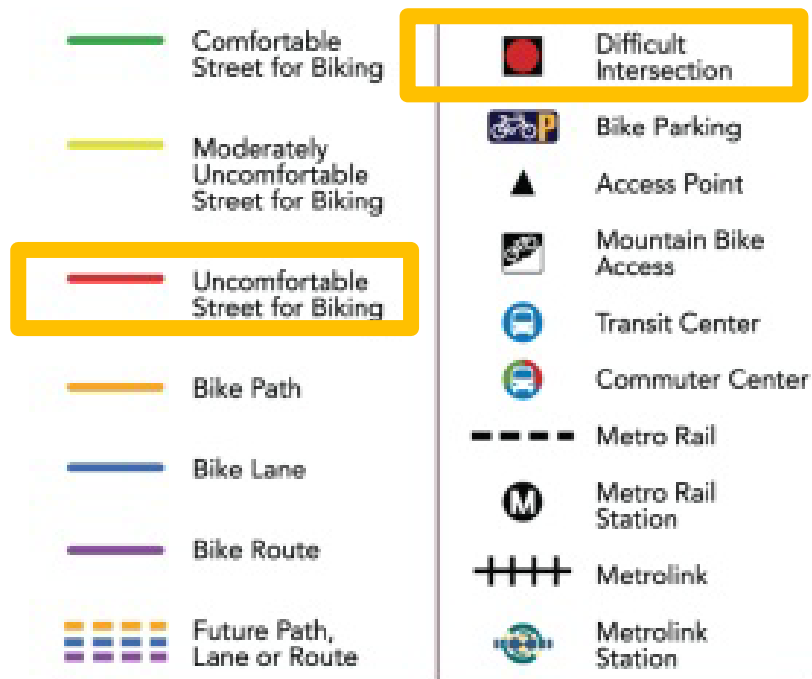
shifts induced by the introduction of a bike-share program in the San Fernando Valley.

- Initiative 2: Reduce 20% of VMT (Vehicle Miles Traveled) by 2020 through a gradual mode shift among residents.
- Initiative 3: Monitor ridership level at all bike-stations and make adjustments where needed to keep operations running at its highest capacity.
- Initiative 4: Conduct member surveys to identify apparent shifts in transportation methods among riders.

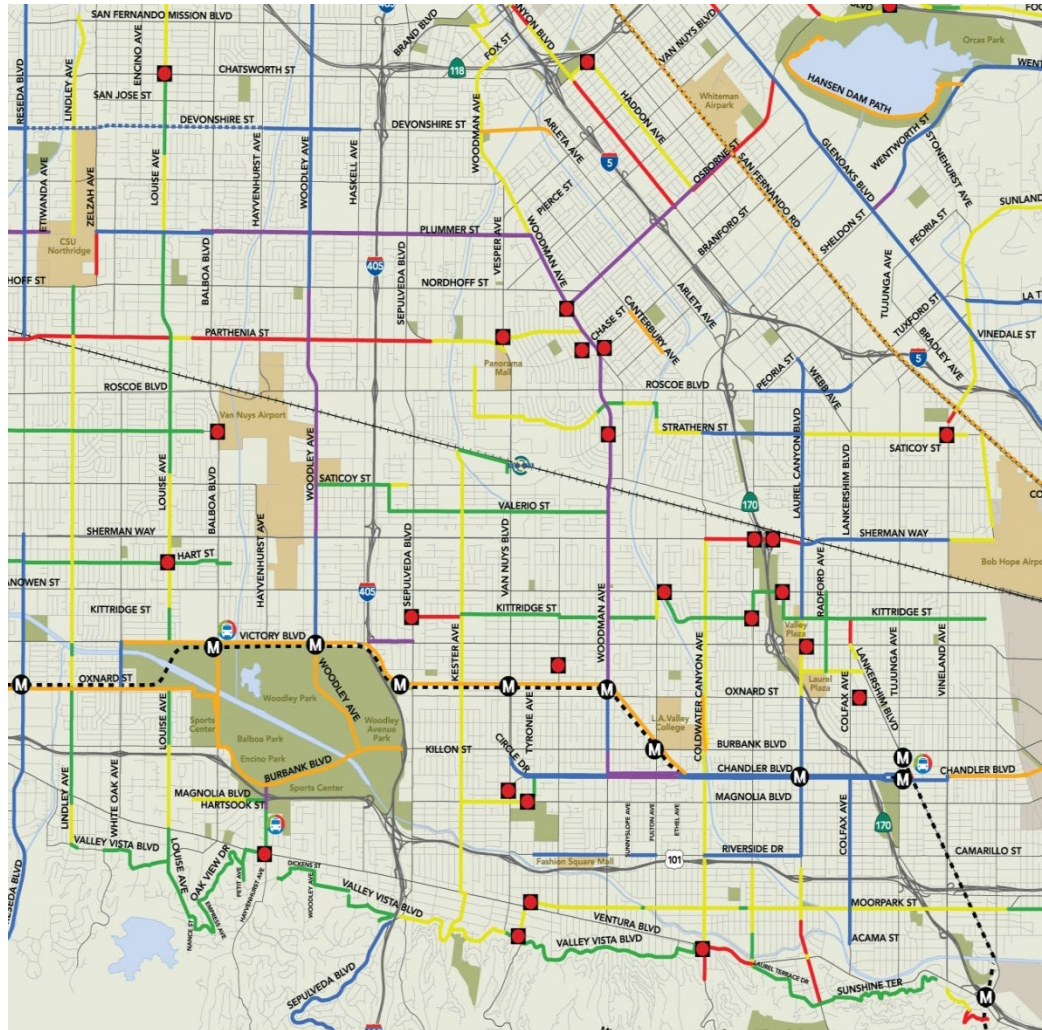
Objective 4: Improve existing infrastructure to increase the safety of pedestrians and bikers.

- Initiative 1: Provide an additional 15% of support facilities for bikes (i.e. lockers, showers, and changing rooms) by 2014. (Note: preliminary target dates are set to ensure adequate bike-support facilities are in place for the launching of the program).
- Initiative 2: Upgrade 20% of existing biking support facilities to include showers by 2014.
- Initiative 3: In reference to the San Fernando Valley's bike map (see fig.6-1 and 6-2), improve at least 10% of those streets labeled as "uncomfortable" by 2020.
- Initiative 4: In reference to the San Fernando Valley's bike map (see fig.6-1 and 6-2), improve at least 10% of those intersections labeled as "difficult" by 2020.

Fig. 6-1: San Fernando Valley Bike Map Legend.



Source: Los Angeles County Metropolitan Transportation Authority

Fig. 6-2: Portion of the San Fernando Valley Bike Map.

Source: Los Angeles County Metropolitan Transportation Authority

- Initiative 5:** Identify wide yet desolate streets throughout the Valley which can afford to be narrowed down by the addition of a dedicated bike path and other “calming features” to slow down traffic and increase connectivity between bike routes.⁴³ Some possible measures include constructing bollards to protect bicyclists, painting or texturizing bike lanes, and landscaping to create buffer zones.

Objective 5: Update land use zones and codes to promote biking and increase ridership. The City should concentrate on transit improvement projects for bikes and pedestrians, not the automobile.

⁴³ Fairfax County Virginia. Planning Commission TOD Committee. *Walking Distance Research*. Fairfax: Planning Commission TOD Committee, 2012. Web. 11 Jul 2012. <<http://www.reconnectingamerica.org/assets/Uploads/20060908walkingdistanceabstracts.pdf>>.

- Initiative 1: Identify vacant lands that can be used for bike stations and support facilities.
- Initiative 2: Devise land use regulations that limit projects such as parking structures and lots which only encourage automobile use. Require that these types of projects proposals include within their scope of work bike-support facilities or stations.

IMPLEMENTATION

Organizations and Agencies That Can Help

The following agencies and organizations have expressed interest and taken notable efforts towards exploring more sustainable alternatives within the transportation realm. This yields opportunities for collaboration and development of more public-private partnerships to build upon what has already been initiated by relevant stakeholders. Below are some agencies and organizations that are actively involved in projects to promote bike use and other cleaner transportation methods.

- Bike Nation
- Los Angeles Department of Transportation
- City of Los Angeles Department of Public Works
- CicLAvia



Source: Bike Nation, LADOT, County of Los Angeles DPW, CicLAvia

CONCLUSION

A bike share policy implemented in the San Fernando Valley has the capacity to mend some of its most prevalent transportation issues without requiring substantial upfront costs and labor- and resource-intensive construction activities. By bringing benefits down to the

individual level, participation in the bike share program is more likely to increase as people see improvement in various aspects of their daily lives.

The intent of the proposal is to initiate the dialogue between the City and Bike Nation as to why the San Fernando Valley should be considered for the next phase of implementation based on pertinent environmental, social, and economic issues surrounding the region. In-depth analyses of the population within the area must still be conducted and examined further in order to identify current trends in travel patterns to determine how to strategically implement the policy so that it works as an integral part of the City's public transportation systems and optimizes the performance of existing infrastructure.

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