

Sam Schwartz Engineering, D.P.C.
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phone: (213) 221-0950
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July 29, 2016

Mr. Eric Bruins
Culver City Public Works Department
9505 Jefferson Blvd,
Culver City, CA 90232

Re: Proposal for Bike Share Feasibility Study

Dear Eric,

Sam Schwartz Engineering, D.P.C. (*Sam Schwartz*) is pleased to present to you this proposal to prepare a bike share feasibility study for Culver City. As part of the Los Angeles region, Culver City faces a separate set of paths to take in creating a bike share program. Should Culver City integrate into one of the existing bike share systems? If so, what should be the extent of the contractual and financial arrangements with that system? Culver City is central in the Los Angeles area and bike share has the potential to greatly expand transportation options for employees and residents to travel around Culver City and also to and from adjacent areas. Not all of the choices that Culver City can make on the path forward will support all goals the City may have equally. For instance, the City of Los Angeles is the larger neighboring city so integrating with their system could potentially provide a larger bike share network for Culver City. However, it is not clear when and if Los Angeles's system will fully reach and saturate the areas around Culver City. The Social Bicycles system has some advantages with their technology to allow Culver City residents to bike to and from neighboring cities without formal station expansions there. There may be more flexibility in organizational and financial structure as well.

Sam Schwartz will work with you through all of these challenges, identify your goals and values for bike share, and run the analyses and financials. The result will be a well-informed analysis to bring bike share to Culver City that is defensible to stakeholders and the public, and is practical and actionable as well. We have worked with both smart-bike/stationless and smart-dock/fixed-station system types across the country. In addition, we have first-hand knowledge of both systems in the region that Culver City has the option to pursue. For the City of Santa Monica, we provided station siting review and general system and implementation advising services. For the Metro regional system, we created station siting and implementation guidance for Metro, Los Angeles and Pasadena, performed preliminary station siting, and also provided general advisory services for the ridership analyses, financial modeling and system and fare integration elements of the Metro Regional Bike Share Implementation Plan.

If you have any questions regarding this proposal, please direct them to Morgan Whitcomb at mwhitcomb@samschwartz.com or Mark de la Vergne at mdelavergne@samschwartz.com.

*Sam Schwartz Engineering, DPC (SSE) is a firm authorized to perform engineering services in the state of New York. SSE provides planning, engineering, design and construction inspection services to New York area clients and works in cooperation with Sam Schwartz Consulting, LLC (SSC) (collectively comprising the **Sam Schwartz** team). SSC is a nationwide consulting firm with offices in six states. Working with SSC provides SSE with access to the entire **Sam Schwartz** group of professional engineers, planners as well as technical and support staff.*

Sincerely,

A handwritten signature in cursive script that reads "Morgan Whitcomb".

Morgan Whitcomb
Project Manager

A handwritten signature in cursive script that reads "Mark de la Vergne".

Mark de la Vergne
Principal

Firm Profile

Sam Schwartz is a multi-modal transportation planning and engineering firm that has collaborated with cities for over twenty years on complex issues and strategies. In an era where daily changes in behavior, technology, and funding are creating transportation disruption, *Sam Schwartz* offers a forward-looking, yet pragmatic, approach to sustainable mobility with unparalleled technical and problem-solving expertise. As city leaders increasingly aspire to re-envision their streets as places for more than just automobiles – while also working better for automobiles – *Sam Schwartz* has served as a frequent collaborator with those cities who are leading the charge, implementing the tremendous change that accompanies new leadership (Los Angeles and Seattle) or a new focus on transportation choices (Chicago and Grand Rapids).

Sam Schwartz has supported cities across the country in planning, analyzing and delivering bike share systems. We have worked with both Social Bicycles and with PBSC technology. For Metro, *Sam Schwartz* was part of the team that delivered the Metro Regional Bike Share Implementation Plan. We performed preliminary station siting, and also provided general advisory services for the ridership analyses, financial modeling and system and fare integration elements. In Santa Monica, we provided station siting review and general system and implementation advising services. In Seattle, we created updated services area plans for a large system expansion and conversion to a new organizational structure. As part of a TIGER grant application, we also created ridership and financial estimates for the new system and wrote elements of the TIGER grant application and performed a cost benefit analysis of the proposed implementation. In Chicago, we provided a wide range of services to the city for planning, implementation and ongoing maintenance of the 475-station bike share system. This included system planning, modelling, site selection, permitting, installation plans, public outreach, station map design, and support services for marketing, advertising and sponsorship, and web design. We have also provided station siting services for the Social Bicycles system in Tampa. We have also provided training to the teams tasked with planning the bike share systems in Louisville and Atlanta.

Staff and Experience

Morgan Whitcomb will serve as the project manager. She is the Director of Los Angeles Operations for *Sam Schwartz* and a Civil Engineer with a focus in transportation engineering and planning. She has extensive experience in bike share planning, programming, analysis and design, and pedestrian and bicycle planning, network analysis and facilities design. She has managed or advised on all of *Sam Schwartz's* bike share projects. She was the project manager on behalf of the Chicago Department of Transportation for the planning, design and implementation of Chicago's 300-station bike share system and its 176-station expansion, including physical installation, public outreach and targeted marketing. She works with communities through inter- and intra-agency coordination and decision-making to deliver projects involving new infrastructure and programs. Ms. Whitcomb also has experience in construction planning, geometric roadway design, and traffic impact analyses. She is a licensed Professional Engineer in the state of Illinois.

Samuel Frommer will serve as the lead project planner. He is a senior planner and designer with *Sam Schwartz*. Mr. Frommer specializes in complex demographic and geospatial analyses, translating them into understandable materials to help make better planning decisions. His work in spatial analyses in ArcGIS and statistical modeling have aided in the definition of the service areas for bike share in Chicago, Seattle, and Hudson County, NJ, and he is the co-author and designer of the Newark Pedestrian and Bicycle Safety Toolbox for Newark, NJ. He has worked on bike share planning in seven different cities. Mr. Frommer is passionate about active transportation and focuses on bicycle and pedestrian planning and safety, bike share system design, and making multi-modal connections.

Sam Schwartz

Transportation
Consultants

Santa Monica Bike Share Siting + Permitting Assistance

Santa Monica, CA



Image Credit: beverlypress.com

Sam Schwartz was retained by Cyclehop to assist and advise on bike share station siting and delivery for Santa Monica's bike share system, set to open this fall. The system will have approximately 80 station throughout the city and will use Social Bicycles smart-bike technology. **Sam Schwartz's** primary responsibility is to perform review of proposed station sites, site plans and permit applications. **Sam Schwartz** is also advising Cyclehop and the City of Santa Monica on other aspects of bike share delivery such as system planning, siting guidelines, approval processes, marketing methods, and outreach strategy.

Client

City of Santa Monica

Contact

Francie Stefan
Manager, Strategic &
Transportation Planning
City of Santa Monica
1685 Main Street
Santa Monica, CA 90401
(310) 458-8341
francie.stefan@smgov.net

Services

Transportation Planning

Consultant Fee

\$10,000

Project Dates

April 2015 – October 2015

Sam Schwartz Key Staff

Mark de la Vergne
Project Director

Morgan Whitcomb, PE
Project Manager

Metro Regional Bike Share Implementation Plan

Los Angeles, CA



Client

Los Angeles County MTC

Contact

Laura Cornejo
One Gateway Plaza
M/S 99-22-02
Los Angeles, CA 90012
213-922-2885
cornejol@metro.net

Services

Transportation Planning
Active Transportation

Consultant Fee

\$48,000

Project Dates

June 2014 - December 2014

Sam Schwartz Key Staff

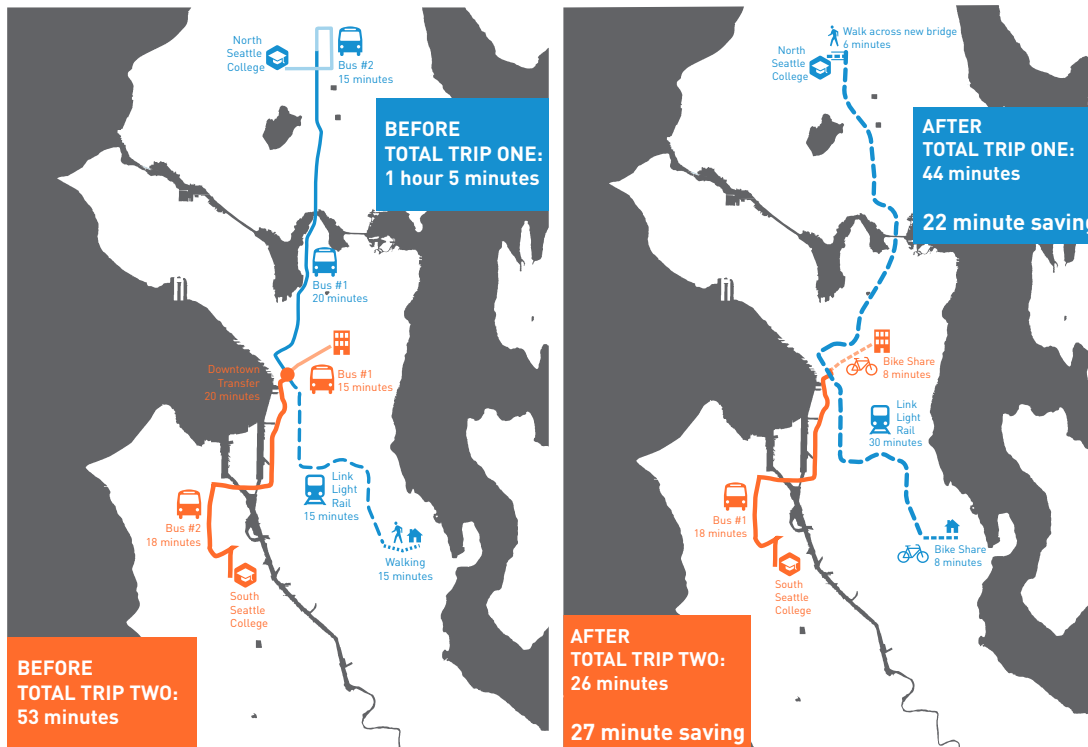
Mark de la Vergne
Project Director

Morgan Whitcomb, PE
Project Manager

The Los Angeles County Metropolitan Transportation Authority is taking an active role in the delivery of bike sharing to the Los Angeles region. As the county-wide transportation agency, they are in a unique position to help implement and integrate potential bike share systems in the 88 cities that comprise LA County. Their role ensured a level of regional coordination, continuity of the user experience, and integration with the county transit system. *Sam Schwartz* advised on all aspects of the plan, which will include development of a phased roll-out plan for the county, development of a business and financial plan, review of data reporting requirements and bike share equipment technology, a regional branding plan, and coordination of integration of bike share with the TAP fare payment card system. *Sam Schwartz* providing station siting services for the three pilot cities steering the plan: the city of Los Angeles, Pasadena and Santa Monica. The station siting was an important piece of the plan and fed into accurate ridership and financial forecasting and was critical to quick implementation of bike share in the pilot cities.

Seattle Bikeshare Expansion Planning

Seattle, WA



Client

Seattle Department of
Transportation

Contact

Nicole Freedman, Chief of
Active Transportation and
Partnerships
700 Fifth Avenue, Suite 3800,
Seattle, WA, 98124
(206) 684-4690
nicole.freedman@seattle.gov

Services

Bikeshare planning
Bikeshare forecasting
Revenue modeling

Consultant Fee

\$47,000

Project Dates

April 2015 – June 2015

SSE Key Staff

Mark de la Vergne
Project Director

Morgan Whitcomb, PE
Project Manager

Sam Frommer
Bikeshare Planner

Ben Norquist
Revenue Planner

As part of a \$25 million TIGER 2015 grant application submitted by the Seattle Department of Transportation (SDOT), Sam Schwartz Engineering (SSE) led the planning for expanding the current bikeshare system from 50 stations that cover 5 square miles of the city to a 250 station electric-assist bikeshare program serving 42 square miles. SSE worked closely with SDOT staff to develop an equitable and viable service area where bikeshare would be immediately successful and have a strong impact by generating ridership, reducing user travel time and travel cost, and dramatically increasing first/last mile access to frequent transit.

Using data on membership, ridership, and service area characteristics from peer city bikeshare systems, SSE created annual- and daily-member ridership forecasts that were used to assess program impact and revenue potential. SSE used these forecasts as the foundation for conducting a benefit-cost analysis for the TIGER grant which identified hundreds of millions of dollars in economic, environmental, health care, and user benefits.

Additionally, SSE conducted research on electric-assist bikes to understand the additional benefit this technology would have on trip length, trip frequency, and membership.

**Sam
Schwartz**

Transportation
Consultants

Chicago Department of Transportation Bike Share

Chicago, IL



Sam Schwartz was retained by the City of Chicago's Department of Transportation to plan the city's bike share system. The *Sam Schwartz* project team identified led the process of planning and installing both the initial launch of 300 stations and 3,000 bicycles and the subsequent expansion of 176 additional stations and 1,760 bicycles. The process included an extensive public outreach campaign during the initial stages of the project to introduce bike share to the public, as this was an entirely new service to the city. An online, interactive map that allowed people to suggest sites for bike share stations was incredibly successful and instrumental in determining specific locations for the 476 sites.

Between the initial launch and the expansion, *Sam Schwartz* conducted a thorough analysis of where the highest potential demand for bike share would be and where bike share would best meet the needs of disadvantaged residents. Through a combination of these factors, *Sam Schwartz* determined, along with CDOT, the boundaries for the expansion. *Sam Schwartz* continues to work with CDOT to determine the system's next expansion areas.

The *Sam Schwartz* team developed creative outreach efforts to engage the public in neighborhoods where the bike share system is not as well-used. With "Design a Divvy", the City recently launched bikes festooned with neighborhood-based designs, which were created by high school students.

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Client

Chicago Department of
Transportation

Contact

Sean S. Wiedel, AICP
Assistant Commissioner
Chicago Department of
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org

Services

Bicycle Planning
Community Outreach

Consultant Fee

\$489,665

Project Dates

January 2012 - ongoing

Sam Schwartz Key Staff

Mark de la Vergne
Project Director

Morgan Whitcomb, PE
Project Manager

Hudson County Bike Share Feasibility Study

Hudson County, NJ



Image Credit: Social Bicycles

Hudson County, New Jersey, is ideally situated for bike share. It is highly urbanized and the most dense multi-jurisdictional county in the U.S. It has direct regional train, subway, bus, and ferry connections to Manhattan and is a major regional employment center. As the lead consultant on the study, Sam Schwartz Engineering's services include defining stakeholder goals and objectives, detailed GIS analysis of various demographic and other factors to recommend a phased system area, forecasting ridership, providing station siting guidelines, and providing a business plan and model for implementation.

Client

Hudson County and North
Jersey Transportation
Authority

Contact

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Assistant Planner, Hudson
County Division of Planning
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Services

Bike Share
Bike Planning

Consultant Fee

\$99,000

Project Dates

October 2013 - Present

SSE Key Staff

Al Meyer, AICP
Project Director

Sam Frommer, AICP
Project Manager

Work Plan

TASK 1. PROJECT MANAGEMENT

- 1.1 Kick-off Meeting: *Sam Schwartz's* project manager, Morgan Whitcomb, will attend a kick-off meeting with Culver City's project manager regarding the following: finalize scope, budget, and schedule; project reporting and invoicing; and preliminary data request. Preliminary brainstorming for the Objectives Statement can begin at this meeting as well. Additional *Sam Schwartz* staff will attend via phone.
- 1.2 Regular Project Meetings: *Sam Schwartz* staff will attend, in-person or via Skype, regular project check-in meetings with the Culver City project manager and additional project staff. Due to the relatively short timeframe to complete the Feasibility Study, we recommend a standing weekly meeting. The purpose of these meetings will be to review deliverables and plan upcoming project needs. *Sam Schwartz* will prepare an agenda for these meetings to be reviewed and finalized by the Culver City project manager. Meeting minutes will be prepared after each meeting summarizing the discussion and assigning task responsibilities and describing status updates. Once a month the project budget will also be reviewed.

TASK 2. OBJECTIVES & OUTCOMES

Sam Schwartz will assist Culver City in crafting a set of objectives, goals and outcomes that the city wishes to reach with the implementation of bike share. This is important framing that will influence the rest of the feasibility study preparation. It is also an important step in creating buy-in internally with the City, helps communicate the system with the public and stakeholders, and will keep decisions focused on what is truly important. Examples of objectives, goals and outcomes include: All residents in Culver City will be a certain distance from a bike share station; To expand the reach of existing transit; To reduce costs of transportation for residents; To reduce the need to build future parking, etc. The bike share system will of course provide many benefits; this step will identify which ones are the most important to Culver City.

As part of the feasibility process, it may be recommended to workshop or review the Objectives and Outcomes within other City departments, with the Mayor's Office or with City Council.

TASK 3. INFORMATIONAL & DATA REVIEW

- 3.1 **Data Collection:** *Sam Schwartz* will obtain necessary data, studies and information to perform the feasibility study. Data that we cannot obtain on our own will be requested from Culver City. *Sam Schwartz* will review the data before beginning any analysis.
- 3.2 **Review System Proposals:** *Sam Schwartz* will review and compile any proposals, requirements or information from the two existing bike share systems in the Los Angeles Region, the Social Bicycles/Santa Monica system and the BCycle/Metro/Los Angeles system. *Sam Schwartz* will meet with Culver City to perform this review and will draft a brief memorandum summarizing the results. It will include all known requirements, elements of each proposal (if any), and additional needed information regarding the systems.

3.3 Meet with Regional System Representatives: If requested, *Sam Schwartz* can meet with representatives in the cities of Santa Monica and Los Angeles, and with system operators and vendors such as Cyclehop, Social Bicycles, Bicycle Transit Systems, etc. to gain more information on their system requirements, interoperability agreements and organizational structure.

3.4 Adjacent System Reviews: *Sam Schwartz* will compile a high-level review of the expansion and bike share launch plans of adjacent cities. The prospect of interoperability and the ability to bike between Culver City and adjacent jurisdictions is important to the success of Culver City's bike share system.

TASK 4. DEMAND ANALYSIS & RIDERSHIP ESTIMATES

4.1 Demand and Equity/Goals Heat Mapping Analysis: *Sam Schwartz* will perform a demand and equity goals heat mapping analysis for Culver City and the surrounding areas. A demand analysis is a planning exercise whereby attributes we think contribute to higher ridership are compiled into a heat map. We will create a heat map for Culver City that will include population density, employment density, bicycle network, among other factors. This will allow one to see where the "hot spots" are where bike share may be more popular and to see how large the variation in these attributes are across the City. To bring more context to this planning exercise, we recommend performing an equity/goals heat mapping analysis as well. In a second map, we will layer attributes of the City that reflect the goals for the system, such as lowering the cost of transportation for residents, filling in transit deserts, etc. By multiplicatively combining these two maps, we will have guidance on where bike share will achieve ridership/popularity as well as fulfill larger goals for the city. By creating both heat maps, we will be able to make sure that potential for ridership is not the only consideration in planning Culver City's bike share system.

Our analysis and modeling of ridership profiles systems across the country has shown that the number one factor that affects the ridership at any one bike share station is robustness of the network of stations surrounding it. The secondary factors to affect are elements such as population and employment density. Therefore, the heat maps should not be viewed as a proxy for ridership, as they do not contain any information on the bike share network.

For the City of Chicago, *Sam Schwartz* created a "Potential" and an "Equity" heat map in the planning phase for their bike share system. The Potential map contained elements such as population density, employment density, transit service, and mode split. The Equity map reflected the equity goals for the City's system and contained non-white population density, % of low household income, and educational attainment. We then multiplicatively combined these two maps to create a final heat map that highlighted areas that could provide both Ridership and Equity attributes. These areas were then given special consideration through higher station density and outreach when planning the system. For the City of Seattle, strengthening access to education was a top line goal, so we added an element to their heat map that showed the geographic areas where the addition of bike share would decrease of travel time to the city's community college and university system.

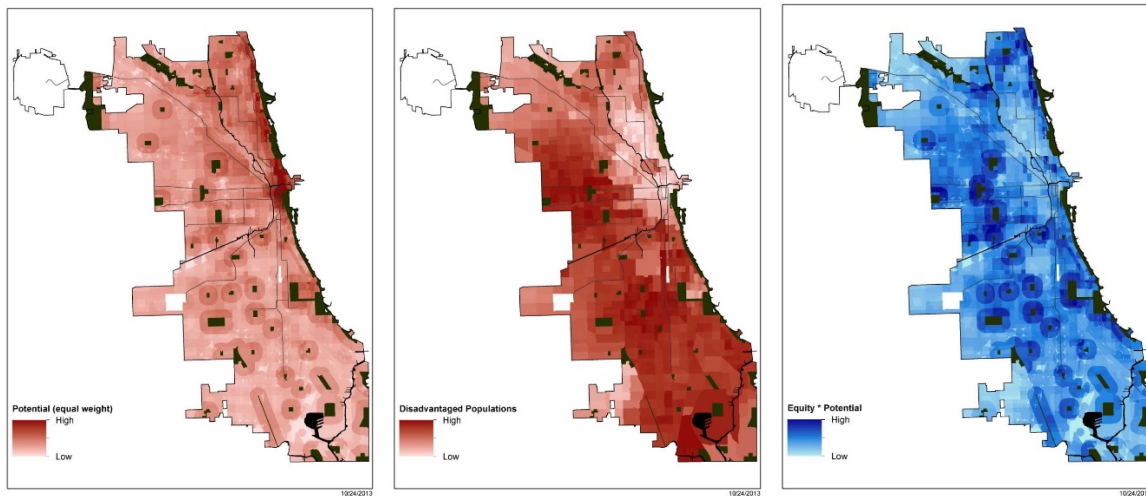


Figure 1: Chicago's Bike Share "Potential", "Equity" and "Potential x Equity" heat maps, respectively.

4.2 Service Area & Parameters: Using the heat mapping analyses as a guide, *Sam Schwartz* will work with Culver City to craft alternative service area plans that show the extent of the bike share system and potential station/bike densities in sub-areas through the city. We will determine several scenarios for number of bikes, docks and stations and the subsequent bike-dock ratios. The service areas will take into account expansion plans for adjacent cities.

4.3 Ridership Estimates and Scenarios: The ridership analysis, using primarily GIS and excel, will be modeled off of similar demand analyses we have performed for Chicago and Seattle whereby we compile existing peer city ridership, demographics, geographic attributes and system attributes and then linearly correlate to these to Culver City. We will do multiple ridership scenarios for high and low estimates, different service area plans (including stations in adjacent cities) and the different system types where appropriate.

TASK 5. HIGH-LEVEL FINANCIAL FEASIBILITY ANALYSIS

All elements of the financial feasibility analysis will be duplicated where necessary for the two system types.

5.1 Costs: Based on national estimates, regional estimates, and proposals we will estimate high level capital (one-time) and operational (on-going) costs for each bike share system.

5.2 Revenues: We will outline all potential sources of revenue such as user fees, sponsorship, advertising on stations, bicycles and online. We will also review the effects of potential revenue sharing with the Metro system and with a private operator. The sources of revenue will be based on national and regional estimates and tailored using the Culver City ridership estimates. For sponsorship and advertising, we will also review and integrate the legal limitations and opportunities in Culver City for outdoor advertising.

5.3 Funding: We will research and compile funding opportunities including federal and local grants, local funding set asides and so forth. We will also include a discussion regarding their applicability for different organizational structures, the steps necessary to procure these, and their likelihood of implementation given funding cycles and political will.

5.4 Fee & Payment Structures: Across the country there are recent innovations and experiments in fee structures that are breaking from the original model of two fees for annual members and daily users. In that fee structure daily users typically pay a disproportionately higher fee per ride than annual users, and annual users are typically

revenue negative for the system. *Sam Schwartz* will review different payment structures that are in use in the LA region for each system type, and also review different fee structures that may be beneficial to Culver City's system. Fee structures reviewed may include: pay-per-ride, pay-per-minute or time period (30 minutes), unlimited daily, weekly, monthly, annual, etc. It will also include fees, or lack thereof, for parking your bike outside of a station or outside of the service area for the Social Bicycles system. The review will include a discussion of the payment processes as well (e.g. walk-up, online, smartphone).

5.5 Organizational Structure: *Sam Schwartz* will review the options for Culver City for what organizational structures are possible and recommended with each system type. Organizational structures describe the responsibilities of ownership, liability, revenue sharing, operational and maintenance of the system. The responsible party can range from private, non-profit, and public responsibilities for different elements of the system. The contracting and permitting mechanisms available in Culver City and the desired outcomes from Task 2 will also affect the possibility and advisability of different organizational structures.

TASK 6. ANALYSIS OF RISKS & BARRIERS

Sam Schwartz will create a narrative and/or table of the risks and barriers to bike share in Culver City in general and for each organizational structure and system type available to Culver City. This will include financial issues, infrastructure and implementation issues, interoperability, public support, political climate and legal barriers. The risks and barriers will come from our experience in planning and implementing bike share systems across the country as well as discussion with Culver City staff and their local knowledge.

TASK 7. RECOMMENDATIONS & STRATEGY

Once all the previous elements of the feasibility study are put in place, we will review them with Culver City to see if a clear set of recommendations emerges. From that we will outline next steps and strategies to put that recommendation in motion. The recommendation may be to pursue a particular regional system type with a particular organizations structure and funding or multiple recommendations to pursue. If there is any further analysis needed to develop a concrete recommendation, that will be discussed in the report narrative.

TASK 8. REPORT

All of the above will be compiled into a report describing the feasibility process. The chapters of the report will follow the elements of this scope and will include all supporting data, maps, figures, tables and narratives.

Schedule

The following schedule shows a project length of 14 weeks. The schedule and milestones can be adjusted to suit the needs of Culver City.

Culver City Bike Share Feasibility Study
Schedule

