

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.

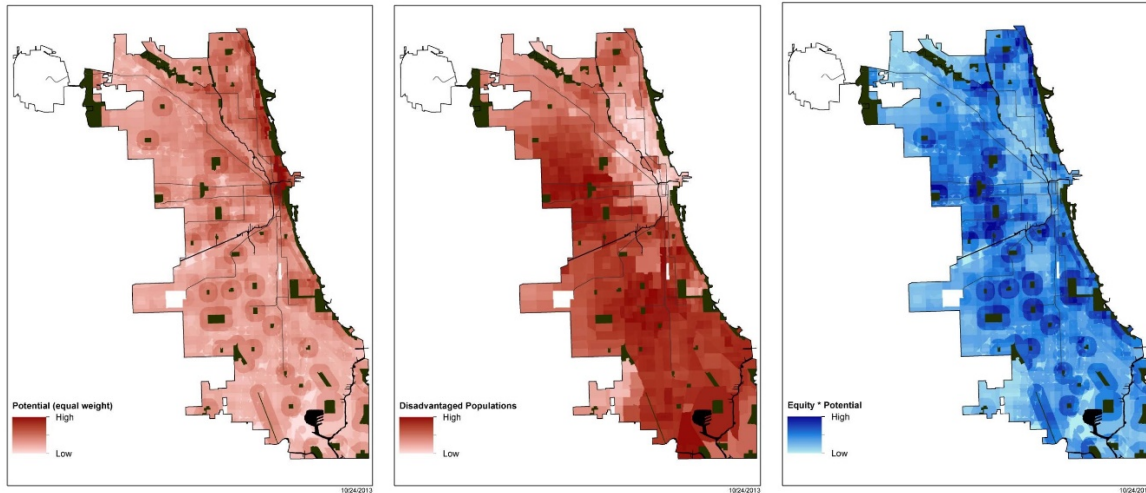


Figure 1: Chicago's Bike Share "Potential", "Equity" and "Potential x Equity" heat maps, respectively.

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.