



MEMORANDUM

Date: September 9th, 2017
To: Jim Lightbody
Organization: City of Mountain View
From: Sean Co, Senior Planner
Project: F016
Re: Mountain View Bike Share System Size

The City of Mountain View, California is considering initiating a procurement process for a bike share system. In doing so the City is seeking general information about the typical system size for a bike share system in a city like Mountain View, and in particular how many bikes such a system would have.

Sizes of Comparable Systems

Each bike share system operates in a unique context and a variety of factors influence the appropriate size for each system. There is no one-size-fits-all solution. However, by comparing bike share systems from cities similar to the Mountain View context, we can identify the typical range of bike share systems sizes that operate in comparable cities. An analysis of data from other bike share systems shows the following range of station densities and bikes per station:

System Characteristics	Station Density (stations/sq mi)	Bikes per station
Suburban systems ¹	5 to 8	6 to 9
Systems with similar population density to Mountain View ²	4 to 10 ³	7 to 10
Smart bike systems ⁴	6 to 8 ⁵	6 to 10

¹ Based on the suburban cities within the Capital Bike Share and Hubway systems. This includes the cities of Silver Spring, Bethesda and Rockville, Maryland; Alexandria and Arlington, Virginia in Capital Bike Share; and Somerville, Brookline and Cambridge, Massachusetts in Hubway.

² Mountain View had an estimated population density of 6,175 people per square mile in 2013. Comparison cities in this category include Aspen, CO; Birmingham, AL; Chattanooga, TN; Dayton, OH; Fort Worth, TX; Indianapolis, IN; Minneapolis, MN; Rockville, MD; Salt Lake City, UT; San Antonio, TX; and Tampa, FL, all of which have population densities ranging from 3,000 – 10,000 people per square mile within the bike share service area.

³ Excluding one outlier of 15 stations per square mile.

⁴ Comparison cities include Birmingham, AL; Boise, ID; Charlottesville, VA; Hamilton, Ontario; Tampa, FL; and Topeka, KN.

⁵ Excluding one outlier of 14 stations per square mile.

Given that the numbers in the table are fairly consistent across categories, we can generalize that **bike share systems in a similar context to Mountain View's will have between 4 and 10 stations per square mile, and 6 to 10 bikes per station; this is equivalent to 24 to 100 bikes per square mile.**

Expected Size of Mountain View's Bike Share System

Mountain View is approximately 12 square miles in area. A city-wide system would be estimated to cover 10 square miles, excluding some portions at the far north and far south of the City⁶. A system focused on the employment core of the City would be estimated to be approximately 6 square miles.

Based on these numbers, a Mountain View bike share system could be expected to be the following size:

- A **city-wide system with low station density** would have at least 40 stations, with 240 to 400 bikes
- A **city-wide system with high station density** would have up to 100 stations, with 600 to 1,000 bikes
- An **employment-core-focused system with low station density** would have at least 24 stations, with 144 to 240 bikes
- An **employment-core-focused system with high station density** would have up to 60 stations with 360 to 600 bikes.

These numbers are very generalized. Smaller versions of the system could also be created if the system area were limited to particularly high-demand corridors or areas of the city; though to create a successful system, the overall service area should be mostly contiguous and well-connected (i.e. there shouldn't be large gaps in the service area that lack stations).

First/Last Mile Connection System

There has also been some consideration of a system that would focus exclusively on making the first- and last-mile connection between transit and major employment centers, to make transit more accessible for commuters that work in Mountain View.

In this case, the number of stations would be limited to the transit center and to major employment centers. Unlike a typical bike share system, every station in a first/last mile system is designed to be a high-demand station. It is therefore expected that the number of bikes per station should be at or exceed the high end of the range. Thus, for the 11-station first/last mile system that was outlined previously by the City, a system with at least 110 bikes would be recommended.