San Mateo County Shared Micromobility Feasibility Study and Implementation Plan

December 2022

C/CAG
City/County Association of Governments
of San Mateo County

Table of Contents

Executive Summary

WHAT IS SHARED MICROMOBILITY?

Shared micromobility is an umbrella term for lightweight, human or electric-powered vehicles that are operated as a fleet and can be accessed by the public to use. While many forms of micromobility vehicles exist, this study focuses on bikes, e-bikes, and e-scooters, which are the most common form of shared fleets. Shared micromobility services have expanded across the world. Their technologies and ownership structures have rapidly developed and evolved in the past 5-10 years. In 2021, 128 million trips were taken via shared micromobility in the North America. Shared micromobility services changed significantly in 2018, with the widespread launch of scooter share systems in around 100 U.S. cities. Scooters accounted for 62.2 million trips in 2021.

PROJECT PURPOSE

The City/County Association of Governments of San Mateo County (C/CAG) collaborated with local stakeholders to define what a successful shared micromobility program would look like for San Mateo County and to determine the feasibility of developing one. The existing status quo requires individual jurisdictions across San Mateo County to develop their own shared micromobility programs and guidelines. This study aims to define what a coordinated, proactive approach to shared micromobility could look like for residents, visitors, and employees in San Mateo County.

PROJECT PROCESS

The study incorporated multiple analyses to evaluate the feasibility of a shared micromobility program in San Mateo County. Throughout the process, the project team worked with an Ad Hoc Advisory Group and various stakeholders to ensure the study reflected the values of the community. The process included:

- **Would shared micromobility work in San Mateo County?** Examining seven key factors known to influence program feasibility to better understand fatal flaws and/or significant barriers to implementing a shared micromobility program in San Mateo County.

- **How would shared micromobility fit into the San Mateo County context?** Analyzing local and regional policy and data to determine the transportation challenges and opportunities that a shared micromobility could address.

- **What would success look like for a program in San Mateo County?** Working with stakeholders to establish a vision, goals, and objectives that articulate what outcomes a shared micromobility program would need to support.

- **How would a shared micromobility program develop in San Mateo County?** Recommending a program structure and guidelines for implementation that best fit the context and resources of partnering agencies in San Mateo County.

Vision:

A shared micromobility program in San Mateo County will provide residents and visitors—including low-income individuals, communities of color, persons with disabilities, and other historically marginalized communities—with an affordable, convenient, and sustainable transportation option that reduces vehicle miles travelled, connects communities to destinations across the County, and seamlessly integrates with transit.

Program Goals:

- Integrate with Transit
- Ensure the Program Benefits Everyone
- Enhance Mobility Options for Local Residents
- Support Economic Development
- Generate Positive Public Perception about the Program
- Support Tourism Opportunities

PROGRAM FEASIBILITY

Many factors influence the level to which a shared micromobility program is feasible, and more specifically, whether a program that meets the local community's vision and goals is feasible. Based on the results of multiple analyses, or feasibility factors, the project team concluded that a shared micromobility program is feasible in San Mateo County. The feasibility factors, listed below, include qualitative analyses to better understand how a program might achieve its goals and to identify fatal flaws and/or significant barriers to implementing a shared micromobility program in San Mateo County.

Feasibility Factors

- Planning and Policy Review: Do existing plans and policies allow or recommend shared micromobility?
- Demand Analysis: Are there multiple areas around the county where share devices would likely be used?
- Barriers Analysis: Would users have viable routes/connections to travel on?
- Equity Analysis: Could a program benefit people with low-incomes and in communities of color?
- Program Opportunity and Resource Analysis: Are there sufficient resources available for the management, vendor equipment and operations, and funding of a program?

PROGRAM RECOMMENDATIONS

The recommendations apply best practices and lessons learned from peer programs to 1) create a program that is best positioned to achieve the vision and goals and 2) to leverage the county's strengths and adjust for challenges identified in the feasibility analysis.

While San Mateo County could elect to move forward with a structure other than the proposed, there are several less desirable governance outcomes of continuing with the current micromobility status quo. Individual jurisdictions would have to bear all procurement, management, and oversight responsibilities

for a local program, resulting in an increased and redundant workload burden on jurisdiction staff. Jurisdictions would have no established regulatory or procurement standards from which to build their micromobility program. Individually, each community may struggle to attract the same number and quality of vendors as a multi-jurisdictional program. Additionally, jurisdictions and vendors would have no mechanism for coordinating planning, procurement, and negotiations and there would be no structure to manage or address inter-jurisdictional micromobility issues. The results would be a fragmented micromobility market where users may be restricted to making trips within a specific town or city, users may have to switch between operators based on where they are travelling, and users have less predictability regarding user pricing and riding rules.

GOVERNANCE AND MANAGEMENT RECOMMENDATIONS

- Establish a multi-jurisdictional program with a single program manager responsible for procurement and contract management.

- The recommended program manager is C/CAG, given the agency's countywide program scope, its proven ability to build consensus with partners across jurisdictional boundaries, general support from the C/CAG Board on the project concept and the program's ability to reduce vehicle miles traveled.

- Contract out to one or more private, third-party operators.

- Management and oversight responsibilities would be the responsibility of a single organization as the program manager, with support from other organizations in specialized roles.

- Individual jurisdictions could opt into the program with the flexibility to dictate certain operating requirements, such as no-ride areas, speed limited areas, and restricted parking areas. Jurisdictions will retain the ability to fine the operator or impound vehicles in instances of violations. Ideally, any day-to-day operational issues will be handled by the vendor with oversight from the program manager.

- Establish a governance committee composed of participating jurisdictions, the program manager and any other key stakeholders as needed. This body would be a venue to discuss program issues, share lessons learned, and resolve problems.

- Establish a process for escalating complaints and issues, creating a clear chain of command for any operational issues and complaints

SYSTEM TYPE RECOMMENDATIONS

- E-bikes are the primary vehicle type, with the option to include manual bikes and/or e-scooters as determined by individual jurisdictions.

- Hybrid or dockless system types are preferred given their ease of implementation and flexibility of operations when considering a pilot program. However, the results of the feasibility analysis, best practices memo, and goals of the program indicate that multiple system types could be successful in San Mateo County. The peer system comparison showed a hybrid, docked, and/or dockless system can be successful for a regional program. The system type, therefore, will depend on level of funding available and interest from operators.

COSTS AND FUNDING RECOMMENDATIONS

- Through a competitive Request for Proposal (RFP) process, procure a private operator responsible for self-financing and operating the system.

- Public costs would be limited to the cost of procurement, oversight, and contract management. These costs could be partially recouped through a permit fee.

- Provide program funding or a program subsidy in return for operator guarantees, such as the equity pricing program, caps on user fees, or certain geographic operating requirements.

PLAN DEVELOPMENT RECOMMENDATIONS

Phase 1 Pilot Program

The San Mateo County Shared Micromobility Feasibility Study proposes a Phase 1 Pilot Program that would run for one to two years, with participating jurisdictions committing to stay within the program through the duration of the pilot. The study identified five potential pilot locations (see Map 1 below) based on an analysis of high demand areas, equity focus areas, and the opportunity to connect across jurisdictional boundaries. The two locations recommended for the pilot are Daly City, Broadmoor, and Colma, and Redwood City and North Fair Oaks based on their close proximity to high frequency transit locations, the ability to serve a large population in an equity priority community with limited access to vehicles and high reliance on transit. Each pilot program should set a target of 500 vehicles and 50 stations/hubs (if a docked or hybrid system is chosen). This would include 1.6-2.0 designated parking spots per bike and 16 hubs per square mile in high density locations. If a pilot location already has shared micromobility vehicles from another program, we recommend adjusting the amount of vehicles added to reflect the target amount of 500 vehicles, which would reduce the cost of the program. The three additional areas identified as candidates for a pilot program include: Daly City, Pacifica, South San Francisco, and San Bruno; South San Francisco and Unincorporated San Mateo County; and Millbrae and Burlingame.

System Expansion

The pilot is an opportunity to test and refine the multi-jurisdictional micromobility management approach. At the end of the pilot period, the study team envisions that revised recommendations and program management structure may be adopted to incorporate lessons learned from the pilot. The system should expand beyond the initial Phase 1 Pilot Program service area based upon factors such as ridership, funding, infrastructure, new indicators of demand, and political will/agency capacity. Following the pilot program, with the multijurisdictional contract in place, the program manager should work with the operator(s) to develop satellite programs at coastal communities, with consideration for alternate service models, such as reduced user fees and/or long-term lending.

PROGRAM GUIDELINES & REQUIREMENTS

A Request for Proposals (RFP) for shared micromobility will lay out guidelines and requirements for the program that the selected vendor must follow. The San Mateo County Shared Micromobility Feasibility Study offers recommendations for common elements that will be included, such as type of vehicles permitted, rider age restrictions, and contract length.

Map 1. Prospective Pilot Areas

PROSPECTIVE PILOT AREAS

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SHARED MICROMOBILITY
FEASIBILITY STUDY

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PROSPECTIVE PILOT AREAS & SCORE

○ Prospective Pilot Areas

Higher Score

Lower Score

DESTINATIONS + BOUNDARIES

Ⓑ BART Station

Ⓖ Caltrain Station

County Boundary

San Mateo County City Boundaries

Water

Park

Data provided by the 2021 C/CAG Comprehensive Bicycle and Pedestrian Plan (2021), Caltrans State Highway Network (2021), San Mateo County GIS Open Data (2021), ESRI Living Atlas (2021), American Community Survey 5 Year Estimates (2019), Longitudinal Employer-Household Dynamics (2019), Bureau of Transportation Statistics Docked Bikeshare Ridership (2021), US Environmental Protection Agency Smart Location Database (2021),and OpenStreetMap (2021).

INTRODUCTION

1. Introduction
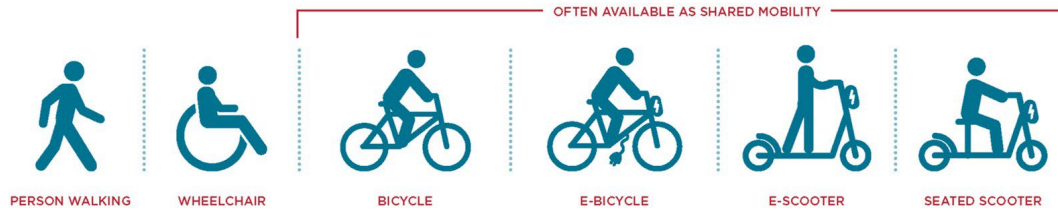
The most common types of shared micromobility vehicles. Source: Alta Planning + Design

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[1] NABSA. "Shared Micromobility State of the Industry Report 2021". https://nabsa.net/2022/08/03/2021industryreport/

This process and its findings are summarized in the following sections of the San Mateo County Shared Micromobility Feasibility Study final plan.
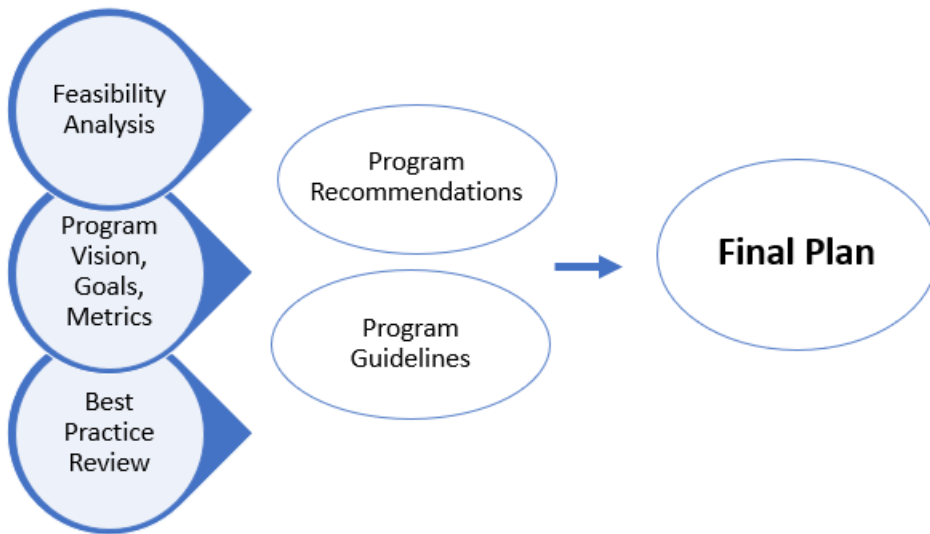
Plan Process Source: Alta Planning + Design

EXISTING CONDITIONS

2. Existing Conditions

The study area for the project is San Mateo County. Founded in 1856, the County includes 455 square miles, 20 cities, 764,442 people[2], and 57.7 miles of coastline[3] (Map 2). The County is part of the larger Bay Area region, bordering the City of San Francisco to the north and Santa Clara County to the south. As the County covers most of the San Francisco Peninsula, it includes a variety of diverse regions, including coastline, natural areas, and built-up areas, among others. There are numerous parks and open space reserves along the north-south mountain ridge, including San Pedro Valley Park, Purisima Creek Redwoods Open Space Preserve, and the El Corte de Madera Open Space Preserve.

The County has substantial transportation features, including multiple freeways, the San Francisco International Airport, and two commuter rail systems: Bay Area Rapid Transit (BART) and Caltrain. The County also has bus service provided by the San Mateo County Transit District (SamTrans) and a notable number of existing bikeways.

DEMOGRAPHICS

According to the most recent census data (ACS 2020 5-year estimates), the median age in San Mateo County is 39.7 years, which is about 10 percent higher than the average age in California. As the County is largely suburban in nature, the population is fairly spread out. The highest concentration of residents is in Daly City, South San Francisco, San Mateo, and Redwood City. The County's proportion of residents of working age (18-64) is 69 percent. Thirty-nine percent of San Mateo County residents are non-Hispanic White, which is just above the statewide rate of 36.5 percent. The second largest racial or ethnic group is Asian (30 percent) which is about double the statewide rate (15 percent).

The County has a median household income of $122,641, and 5.5 percent of its residents live in poverty. The main centers for employment are found along the bayside, due to the presence of large corporate offices and the airport. The highest concentration of jobs is found in the Menlo Park, South San Francisco and San Bruno areas. Towards the coast, the census tract including downtown Half Moon Bay also has a high concentration of jobs. For more information about the population density and jobs concentration in San Mateo County, see **Appendix A**.

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[2] *https://www.census.gov/quickfacts/fact/table/sanmateocountycalifornia/POP010220#POP010220*
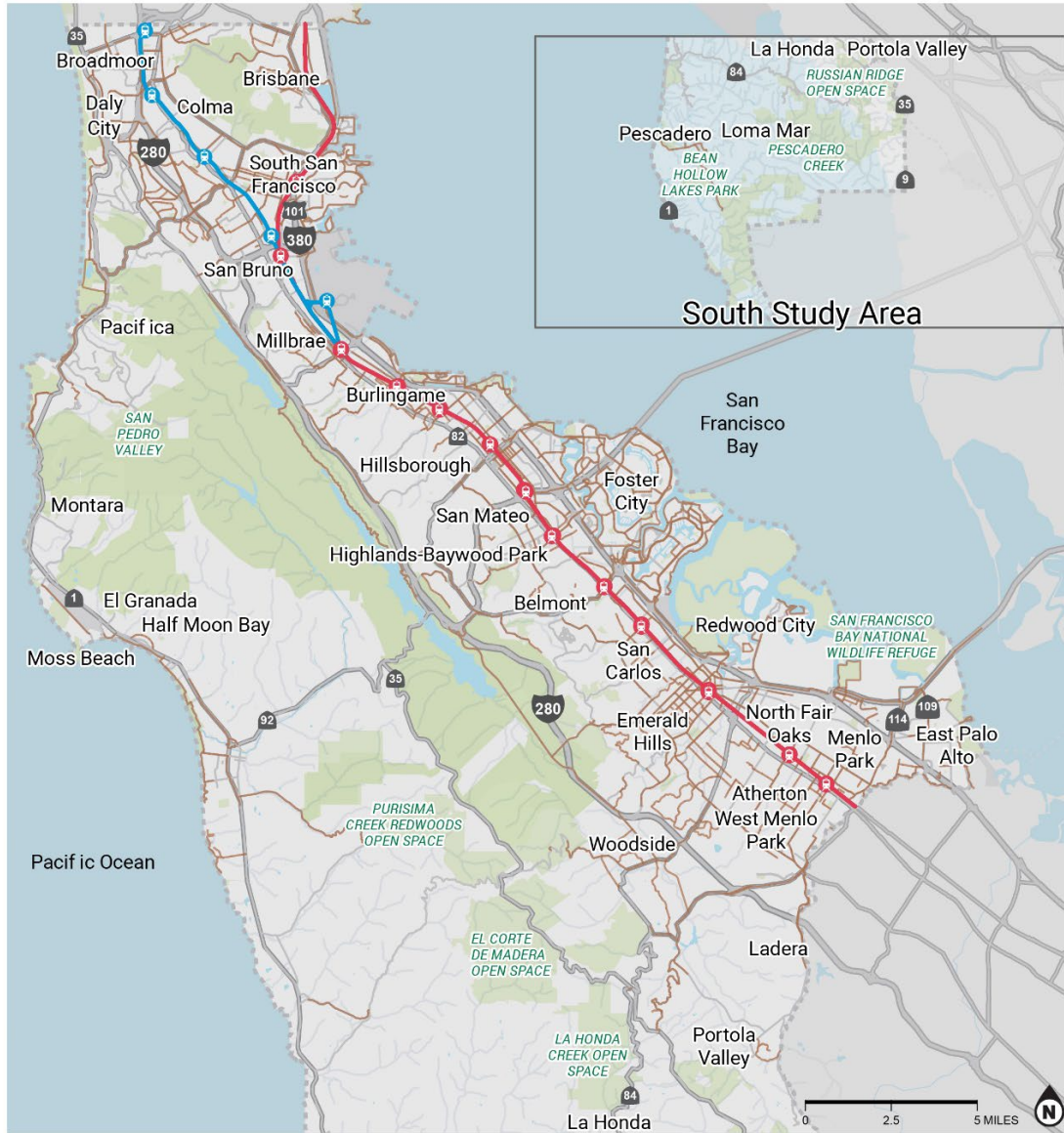
[3] *https://www.smcgov.org/fast-facts*

Map 2. Study Area

STUDY AREA

SAN MATEO COUNTY
SHARED MICROMOBILITY
FEASIBILITY STUDY

TRANSPORTATION FEATURES

— Existing Bikeway
🚲 BART Station
— BART
🚉 Caltrain Station
— Caltrain
— Road
— Freeway

DESTINATIONS + BOUNDARIES

Park
Water
County Boundary

Data provided by the 2021 C/CAG Comprehensive Bicycle and Pedestrian Plan
(2021), Caltrans State Highway Network (2021), San Mateo County GIS Open Data
(2021), and OpenStreetMap (2021).

PLANNING AND POLICY CONTEXT

There are a number of planning and policy documents that may impact the implementation and operation of a shared micromobility program in San Mateo County. Plans and policies can be important measures of program compatibility with local initiatives, such as goals for encouraging healthy and active transportation, reduced greenhouse gas emissions, or providing low-cost transportation options among transit-dependent populations.

Transportation-related state, regional, countywide and local plans—such as transportation elements of general plans and bicycle and pedestrian plans—were reviewed (**Appendix B**). Most reviewed plans include similar goals, objectives and policies. These common plan elements include recommended projects that have a countywide impact, recommendations and considerations for a shared micromobility program, and other topics that relate to shared micromobility. The most common topics include:

- **Safety**: Reduce bicycle and pedestrian-involved collisions.
- **Access to transit**: Improve bicycle and pedestrian access to transit.
- **Connectivity**: Create a connected network of bicycle and pedestrian facilities that is comfortable for all ages and abilities.
- **Equity**: Ensure everyone, especially historically underserved communities, benefit from active transportation investments and are included in the process.
- **Regional Coordination**: Coordinate with regional agencies to plan and implement the active transportation network.
- **Education & Encouragement**: Create and enhance the culture of active transportation through education and encouragement programs.
- **Support Facilities**: Promote biking and walking by providing supportive facilities such as wayfinding, bicycle parking, etc.

Many of the reviewed plans support shared micromobility either as a goal, objective, policy, or recommendation. All of the regional and County plans, with the exception of the Caltrans District 4 Bicycle Plan (2018), explicitly promote or recommend shared micromobility. The Caltrain Shared Micromobility Strategy is a document dedicated entirely to supporting shared micromobility at all Caltrain stations and along the Caltrain corridor, which includes the entire length of San Mateo County along the Bayside. The document uses an equity lens to lay out overarching strategies, recommendations, and potential scenarios for shared micromobility. The San Mateo County Comprehensive Bicycle and Pedestrian Plan and the Unincorporated San Mateo County Active Transportation Plan both recommend developing and/or supporting a shared micromobility program across the County.

While the County and regional plans recommend shared micromobility, recommendations among local municipalities in San Mateo County is more mixed, as shown in Table 1 below. Over half—12 out of 20—

of local municipalities mention support for shared micromobility in their local planning documents. Two of the three municipalities on the coastside of the County—Half Moon Bay and Pacifica—and over half (59%) of the bayside municipalities support a shared micromobility program.

In addition to support through planning documents, local jurisdictions are in different stages of project implementation. The City of San Mateo currently has a shared micromobility permit; City of Redwood City recently approved a shared micromobility ordinance; and the City of Millbrae and City of Burlingame recently procured a vendor for a joint shared micromobility program.

The San Mateo County Shared Micromobility Feasibility Study can help to address many of the common topics related to shared micromobility outlined in the reviewed planning documents. Among the supportive municipalities, some of the common topics related to micromobility across the planning documents include:

- Increasing access to transit and providing a seamless transfer experience between shared micromobility and transit
- Providing dedicated parking facilities for shared micromobility
- Enhancing bicycle facilities that support micromobility
- Identifying suitable locations for shared micromobility stations and geographic areas where a program should operate
- Coordinating with local and regional agencies and organizations
- Establishing a regulatory framework

Table 1. Recommendation for shared micromobility in existing planning documents among local municipalities in San Mateo County

Local Municipalities	Recommendation for Shared Micromobility in Local Plans
Atherton	
Belmont	X
Brisbane	
Burlingame	X
Colma	X
Daly City	
East Palo Alto	X
Foster City	
Half Moon Bay	X
Hillsborough	
Menlo Park	X
Millbrae	X
Pacifica	X
Portola Valley	
Redwood City	X
San Bruno	
San Carlos	X
San Mateo	X
South San Francisco	X
Woodside	

Appendix B includes the full list of documents reviewed and their relevance to shared micromobility in San Mateo County.

DEMAND ANALYSIS

Methodology

In order to properly understand potential micromobility demand throughout San Mateo County, demographic information, commercial information, transportation information and key points of interest were agglomerated to create composite heat maps that show demand for docked and nondocked demand (**Map 2, Map 3**). In many communities, the local context must be considered as well.

The demand estimates were based on a regression analysis using a North American bike share dataset. The regression model finds that job density, tourism destinations, transit proximity, high-density neighborhoods, the decreased prevalence of individualized car use, and other variables are significant determinants of demand. Additionally, the analysis built on literature[4] regarding the differing demand for both docked and non-docked systems. Tourist attractions and shopping, for example, have a larger impact on demand for a non-docked system. The relative demand scores in this analysis are a result of the following inputs:

- Where people live (Population Density)
- Where people work (Employment Density)
- Where people shop (Shops)
- Where people attend higher education (Student Density)
- Where people can ride transit (Availability of Transit)
- Where people visit (Tourist Destinations and Accommodation Services such as Hotels and Motels)

It should be noted that the existence of demand does not always guarantee micromobility utilization, however it can help provide insight as to where a micromobility system will operate best. Finally, these maps are based on existing conditions, and show current, not forecasted, demand.

As shown on the maps, black and dark purple areas indicate places in San Mateo County with the highest relative demand. Pink, orange and yellow areas indicate some demand for shared micromobility, however, the demand here is lower in comparison to other parts of the County. Areas with no color indicate places that did not have high enough scores in any of the demand input criteria. This analysis serves as a helpful tool in determining the most optimal locations for shared micromobility service in San Mateo County.

Results

Several large connected pockets and corridors of high demand areas emerged from the analysis. Micromobility systems work best where demand is continuous across space. The following connected areas feature high demand compared to other areas within the County:

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[4] *Modeling the Demand for Shared E-Scooter Services (10/21/2021, TRB). https://journals.sagepub.com/doi/10.1177/03611981211051620*

- **Downtown Areas:** With the prevalence of high densities in regard to population, jobs, commercial and non-commercial shops, downtown areas operate as a core center for micromobility service areas.
- **Areas in Relatively Close Distance to BART and Caltrain Stations:** As micromobility systems benefit from the presence of a more robust transit network, areas within San Mateo County which had either a Caltrain or BART station projected higher demand.

While the majority of high demand areas was found in the populous bayside of San Mateo County, there are other areas of note which should be included in the discussion. These are:

- **Coastal Destination Communities:** With the prevalence of downtown areas and destinations, coastal communities also showed up as having high demand, although lower demand overall within their communities. This points to the possibility of having docked and non-docked systems relatively contained within the high demand areas.

Demand for Docked and Non-Docked Systems

While there is demand to support both docked and non-docked systems in San Mateo County (Map 3 and Map 4 below), there are some differences between the demand for the different system types. Demand for docked systems are concentrated in downtown and high-density areas. Non-docked systems show less concentrated demand but cover more area than docked systems. This indicates that while non-docked systems can potentially serve broader areas, docked systems have the advantage in high-density and downtown areas. Each system offers different benefits that should be taken into consideration when deciding what system to implement where.

Map 3. Docked Projected Demand Map
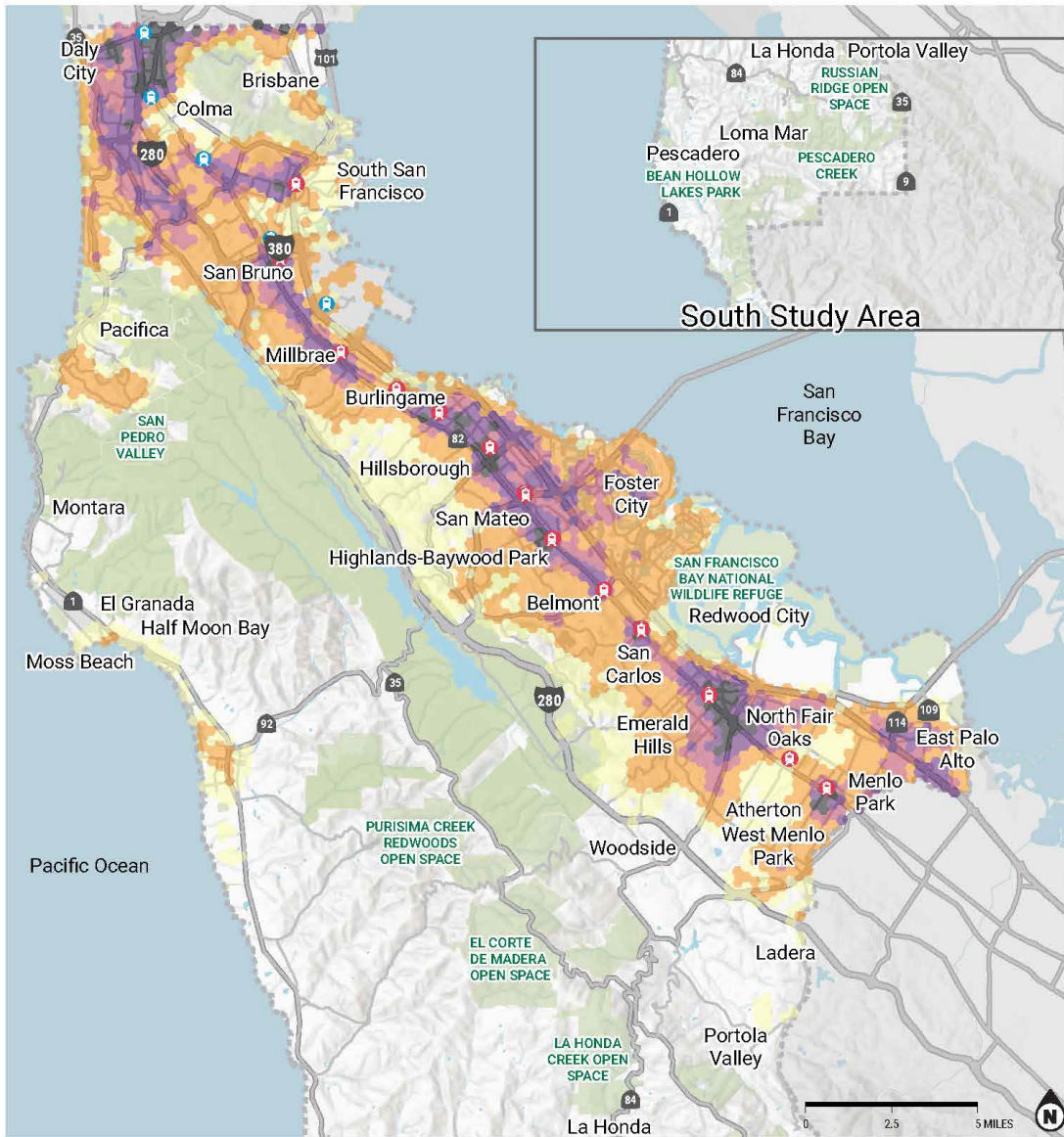
DOCKED PROJECTED DEMAND MAP

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SHARED MICROMOBILITY
FEASIBILITY STUDY

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PROJECTED DEMAND

- More Demand
-
-
-
- Less Demand

DESTINATIONS + BOUNDARIES

- Caltrain Station
- BART Station
- Park
- Water
- County Boundary

Data provided by C/CAG of San Mateo County (2021), Caltrans State Highway Network (2021), American Community Survey 5 Year Estimates (2019), Longitudinal Employer-Household Dynamics (2019), Bureau of Transportation Statistics Docked Bikeshare Ridership (2021), US Environmental Protection Agency Smart Location Database (2021), and OpenStreetMap(2021).

Map 4. Non-Docked Projected Demand Map
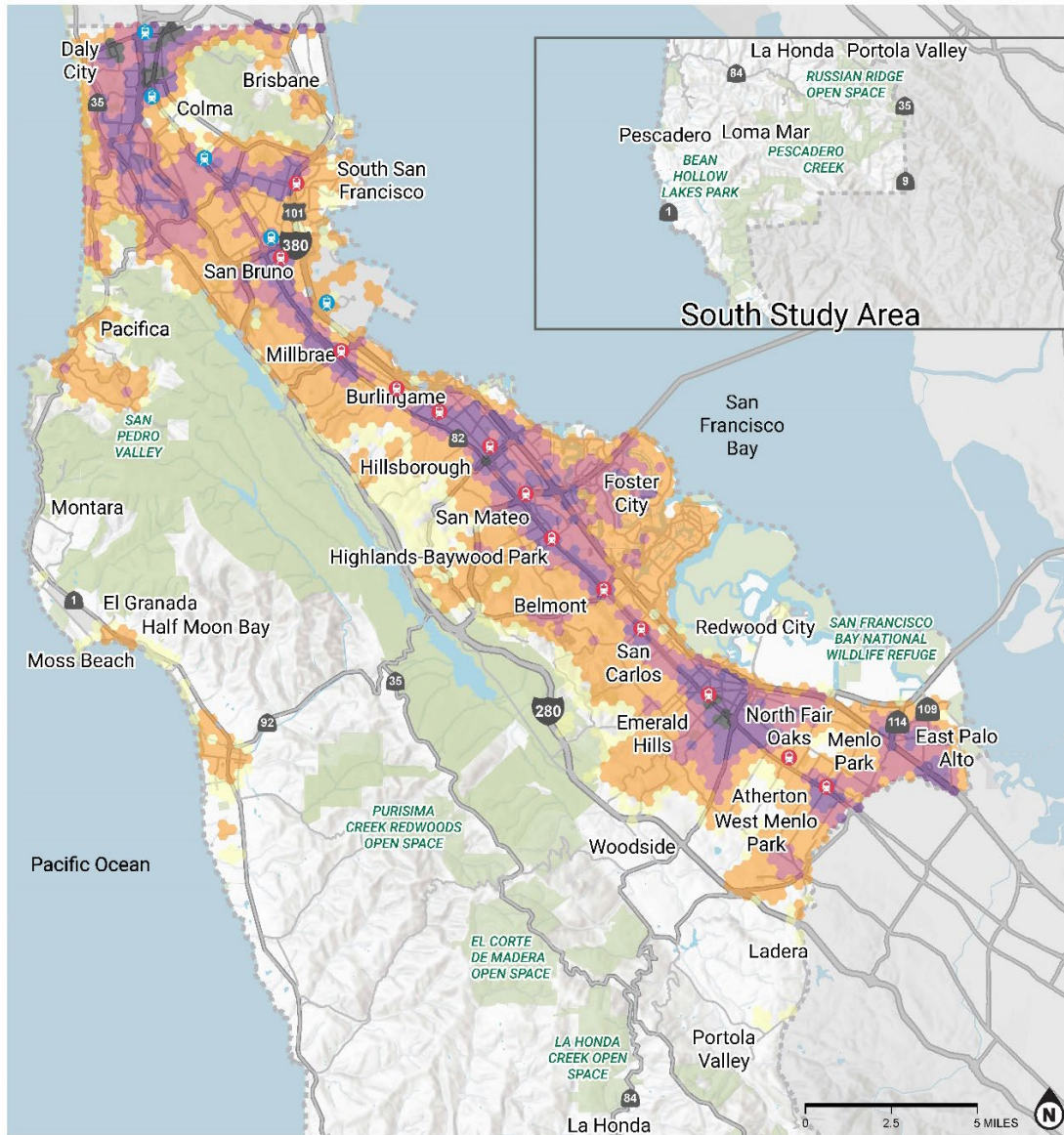
NON-DOCKED PROJECTED DEMAND MAP

SAN MATEO COUNTY
SHARED MICROMOBILITY
FEASIBILITY STUDY

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PROJECTED DEMAND

More Demand

Less Demand

DESTINATIONS + BOUNDARIES

Caltrain Station

BART Station

Park

Water

County Boundary

Data provided by C/CAG of San Mateo County (2021), Caltrans State Highway Network (2021), American Community Survey 5 Year Estimates (2019), Longitudinal Employer-Household Dynamics (2019), Bureau of Transportation Statistics Docked Bikeshare Ridership (2021), US Environmental Protection Agency Smart Location Database (2021), and OpenStreetMap(2021).

BARRIERS ANALYSIS

When planning and assessing the areas in which micromobility systems would have the most affect, it is important to understand the barriers that users of these systems would face. These data can be used to identify locations to either avoid placing micromobility <u>or</u> to place micromobility in tandem with streetscape improvements that address the identified barrier. These data can also be used to inform aspects of the micromobility system, such as the type of devices to deploy (e.g. e-vehicles can better accommodate steep slopes). The following inputs were used in the barriers analysis:

- Roadway level of traffic stress (LTS) (provided by C/CAG)
- Clusters of Automobile Focused Businesses (defined in OpenStreetMap)
- Railways
- Highways
- Slope greater than 10%

Results

The results of the analysis are seen in Map 5. Clusters of automobile focused businesses are concentrated in downtown areas, indicating a high presence of vehicular use in these specific areas. Bayside communities have many areas without steep slope, but become steeper to the west. Roadways with high LTS scores are indicated in red, and those with moderate scores are demonstrated in orange. Most communities have high-LTS roadways, highways or railways preventing low-stress travel across long distances, but have pockets where low-stress travel may occur.

Map 5. Barrier Analysis

BARRIER ANALYSIS

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BARRIERS

- ● Cluster of Automobile Focused Businesses
- ▬ Railway
- ▭ Areas of High Slope

Level of Traffic Stress Score
- ▬ Level of Traffic Stress 4
- ▬ Level of Traffic Stress 3

DESTINATION + BOUNDARIES

- ▮ Park
- ▮ Water
- ⬚ County Boundary

Data provided by C/CAG of San Mateo County (2021), Caltrans State Highway Network (2021), ESRI Living Atlas (2021), and OpenStreetMap (2021).

EQUITY ANALYSIS

In addition to demand and barriers, equity is an essential component in determining the most optimal micromobility system service area. An equitable micromobility system is accessible to underserved communities and is geographically distributed throughout neighborhoods and demographic groups. Furthermore, when planning a shared micromobility system it is important to understand where a high number of collisions have historically occurred. The equity analysis includes two parts:

- Equity Focus Areas (source: C/CAG Comprehensive Bicycle and Pedestrian Plan (CBPP))
- Collision analysis

The Equity Focus Areas were visualized if they scored above an 8 on the equity focus index, as was done in the C/CAG CBPP.

The collision analysis used collision data analyzed for the San Mateo County Safe Routes to School (SRTS) Strategic Plan, in which collisions from 2014-2020 were agglomerated to the closest roadway. While all traffic-related collisions were reviewed within San Mateo County, collisions were weighted more if they resulted in a death or severe injury, involved a person walking or biking, or involved a child. There are some differences in the visualization of these data, as the relative scores were adjusted to be shown on the County scale instead of the local scale.

A collision analysis was included as part of the larger equity analysis because traffic-related collisions disproportionately impact people walking and biking, low-income residents, and people of color, among other historically marginalized populations.[5] The high-collision corridors are also useful to compare with the equity focus areas.

Results

Map 6, Map 7, and Map 8 show the results of the analysis. As seen in the equity map, equity focus areas are found throughout the county, indicating that high equity index scores could be helpful in determining where micromobility systems should be placed to meet equity goals. In terms of collisions, high collision areas are seen in downtown areas, indicating that when selecting where to implement a shared micromobility system in a high-density area, it is crucial to assess the relative safety of the roadway and determine what improvements may be warranted. When comparing both analyses (Map 8), many high collision areas overlap with equity focus areas, indicating locations where communities could benefit the most from increased investment in bicycle infrastructure, including a possible shared micromobility system.

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[5] *https://www.saferoutespartnership.org/sites/default/files/resource_files/at-the-intersection-of-active-transportation-and-equity.pdf*

Map 6. Equity

EQUITY

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EQUITY FOCUS AREAS

Equity Focus Areas

DESTINATIONS + BOUN

Water

County Boundary

Data provided by the 2021 C/CAG Comprehensive Bicycle and Pedestrian Plan
(2021), Caltrans State Highway Network (2021), San Mateo County Open Data
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Map 7. Collision Analysis

Map 8. Equity & Collision Analysis

EQUITY X COLLISION ANALYSIS

SAN MATEO COUNTY SHARED MICROMOBILITY FEASIBILITY STUDY

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LAYERS OF INTEREST

Equity Focus Areas

Severity-Weighted Collision Density

High

Low

DESTINATIONS + BOUNDARIES

Park

Water

County Boundary

Data provided by the 2021 C/CAG Comprehensive Bicycle and Pedestrian Plan (2021), Caltrans State Highway Network (2021), San Mateo County Open Data (2021),Statewide Integrated Traffic Records System (2014-2020), and OpenStreetMap (2021).

VISION AND GOALS

3. Vision and Goals

A vision statement will help guide the implementation of a shared micromobility program by providing a clear and inspirational statement about the desired program outcome. The proposed vision statement was developed in coordination with C/CAG and members of the ad hoc advisory group.

Vision:

A shared micromobility program in San Mateo County will provide residents and visitors— including low-income individuals, communities of color, persons with disabilities, and other historically marginalized communities—with an affordable, convenient, and sustainable transportation option that reduces vehicle miles travelled, connects communities to destinations across the County, and seamlessly integrates with transit.

PROPOSED MICROMOBILITY PROGRAM GOALS AND OBJECTIVES

In addition to the vision, the goals and objectives are fundamental to the success of the micromobility program in San Mateo County. The goals and objectives were developed based on stated County priorities and shared micromobility system best practices. They were then refined based on advisory group input and further analysis of existing conditions. These goals and objectives will help guide and shape the planning of a micromobility program.

Proposed Overall Program Goals:

- Replace Motor Vehicle Trips
- Integrate with Transit
- Ensure the Program Benefits Everyone
- Enhance Mobility Options for Local Residents
- Create a Cost-Effective and Self-Sustaining Program
- Support Economic Development
- Generate Positive Public Perception about the Program
- Support Tourism Opportunities

PERFORMANCE MEASURES

The following indicators, shown in Table 2 below, can be used to monitor and evaluate how the system is performing in relation to the program's goals. The evaluation will help to identify where improvements may be made to support program goals and improve the system.

The indicators monitored for overall use will be tracked to establish a baseline for San Mateo County.

Table 2. Proposed Overall Program Goals, Objectives, and Performance Measures

Goal	Objectives	Indicators	Data Collection
Replace Motor Vehicle Trips A micromobility program can help the County address climate change and reduce greenhouse gas emissions by providing a cleaner alternative transportation mode to single occupancy vehicles.	• Implement a program that connects to existing or planned active transportation facilities. • Ensure that the program pricing structure and coverage area is competitive with other transportation modes. • Relieve congestion by promoting a mode shift for short trips (1-2 miles). • Provide easy access to micromobility for people who may be interested in riding but do not have access to a bicycle. • Develop a bike share system near connections to transit that can serve as a replacement for motor vehicle trips for longer distance trips.	Percent of car trips replaced	Annual Survey
		*Number of Trips per vehicle per day	Provided by operator
		Trip Duration – Daily	Provided by operator
		Number of trips to/from each station – Daily/Monthly	Provided by operator
		Miles Traveled – Monthly	Provided by operator
		Total trips taken – Annual	Provided by operator
Integrate with Transit Micromobility programs should support public transit by providing locations near bus and rail stations where riders can expect to find bike share stations or devices with a degree or reliability and predictability.	• Increase connectivity to and from regional transit including BART, WETA Ferry, Caltrain, and SamTrans. • Improve the viability of transit by providing access to shared bicycles as a first and last-mile option for transit riders. • Develop shared payment options for seamless transactions between bike share and transit trips.	Trips to Transit – Number of trips in proximity to Caltrain stations, BART stations, and SamTrans stops	Provided by operator
		If technology allows: Transfers between shared micromobility and transit using Clipper cards.	Provided by operator

Goal	Objectives	Indicators	Data Collection
Ensure the Program Benefits Everyone Micromobility programs should serve residents of all socioeconomic, disabilities, ages, racial, and ethnic backgrounds.	• Develop a robust equity program that ensures residents from all backgrounds can easily access the system without any financial, accessibility, technological, or language barriers to entry. • Create a system that is affordable across income levels. • Improve transportation access to jobs, schools, and recreation. • Ensure the program improves access to underserved communities by focusing on geographic and economic equity.	Trip starts/ends in equity focus area	Provided by operator
		Percentage of fleet rebalanced to equity focus areas	Provided by operator
		Ridership by age, gender, race, ethnicity, disability, and income status	Annual Survey
		Number of reduced income memberships, if/when available.	Provided by operator
		Number of trips per accessible vehicle per day	Provided by operator
		Number of occurrences as reported by the operator for riding on sidewalk and in prohibited areas	Provided by operator
		Cash Payment Locations — Monthly — A list of locations currently accepting cash payment for membership	Provided by operator

Goal	Objectives	Indicators	Data Collection
		Cash Payment Members – Monthly – Weekly – Three Day – New and cumulative members	Provided by operator
		Sign-Up Events — Monthly — Details of in-person sign-up events, including location, duration, number of people spoken to, number of people signed up, sign-ups by membership type	Provided by managing entity and/or operator
Enhance Mobility Options for Local Residents Micromobility programs can provide a reliable mobility option for residents and commuters by serving as a first-and last-mile alternative.	• Provide increased mobility between origins and destinations in San Mateo County by providing access to jobs, employment centers, and other community destinations. • Partner with large employers to provide their employees convenient access to the program. • Ensure that devices are always available near transit and employment centers at peak hours.	User trip purpose (recreation/for fun, utilitarian/transportation focus, weekend/weekday)	Annual Survey
		San Mateo County resident or visitor	Annual Survey
		*Members by Membership Type (e.g. Annual Members – Monthly – Weekly – Three Day) – New and cumulative members	Provided by operator

Goal	Objectives	Indicators	Data Collection
		*Station Performance – Weekly – Rentals and returns by station	Provided by operator
Create a Cost-Effective and Sustainable Program Micromobility programs should be cost-effective regarding both capital and operations costs. The success of the system will allow the program to be sustainable in the long-term.	• Develop a successful program that will attract attention and interest from businesses interested in sponsorships. • Procure vendor/s that have successfully deployed several programs in diverse geographic, economic, and political regions. • Strategically phase the program and deploy devices in high demand destinations that can serve large number of riders before expanding to include other locations. • Ensure allocation of public funds and securing grant funding that is dedicated to supporting equitable access to the program.	*Station Performance – Weekly – Rentals and returns by station	Provided by operator
		Monthly system revenue and monthly system expenses	Provided by operator
		*Number of Trips per vehicle per day	Provided by operator
		*Members by Membership Type (e.g. Annual Members – Monthly – Weekly – Three Day) – New and cumulative members	Provided by operator
		*Casual Users – Daily – New and cumulative members	Provided by operator
		Amount of staff time (from the managing entity) and costs required to oversee pilot	Provided by managing entity

Goal	Objectives	Indicators	Data Collection
Support Economic Development Micromobility programs should support economic development through improving convenience and the user experience in accessing recreational destinations (such as business districts).	• Ensure that the micromobility program focuses on connecting destinations, neighborhoods, business districts. • Promote bike share as an amenity that can help communities increase number of visitors/and support tourism	Number of trips that start/end within a commercial area.	Provided by operator
		Number of business partnerships	Provided by operator
		Number of agreements with businesses/employers for stations on private property.	Provided by operator
		Station Performance near businesses – Weekly – Rentals and returns by station	Provided by operator
Generate Positive Public Perception about the Program Positive public perception is important for the overall success of a micromobility program. Over time, widespread usage of a micromobility program will generate positive public perception through usage and minimize negative feedback about the system.	• Ensure that the micromobility program is sensitive to the local community context by forming new and maintaining existing touch points with the surrounding local community. • Promote the program by highlighting the safety, recreational, and health benefits of micromobility trips. • Ensure the program is a reflection of the community's interests in the program and responsive to the community's feedback as the program as it's implemented.	Value of service to community	Annual Survey
		Perceived safety of system	Annual Survey
		User satisfaction with service	Annual Survey
		Public feedback on system – Number of emails and calls received	Provided by managing entity or operator

Goal	Objectives	Indicators	Data Collection
Support Tourism Opportunities Micromobility programs should support tourism through improving convenience and the user experience in accessing visitor destinations (such as the beach, hotels, and restaurants).	• Ensure that the program is easy to use for first time riders. • Provide a connected program by strategically placing devices in high demand visitor destinations. • Partner with visitor destinations including hotels and restaurants to offer their customers a reliable and convenient way to get to and from their establishments.	Trip volumes along corridors with tourist destinations	Provided by operator
		*Casual Users – Daily – New and cumulative members	Provided by operator
		Number of stations at tourist destinations and/or number of station agreements with tourist-related businesses	Provided by operator
		Station Performance near visitor destinations – Weekly – Rentals and returns by station	Provided by operator

Indicator repeats for more than one goal.

Section 4

BEST PRACTICES
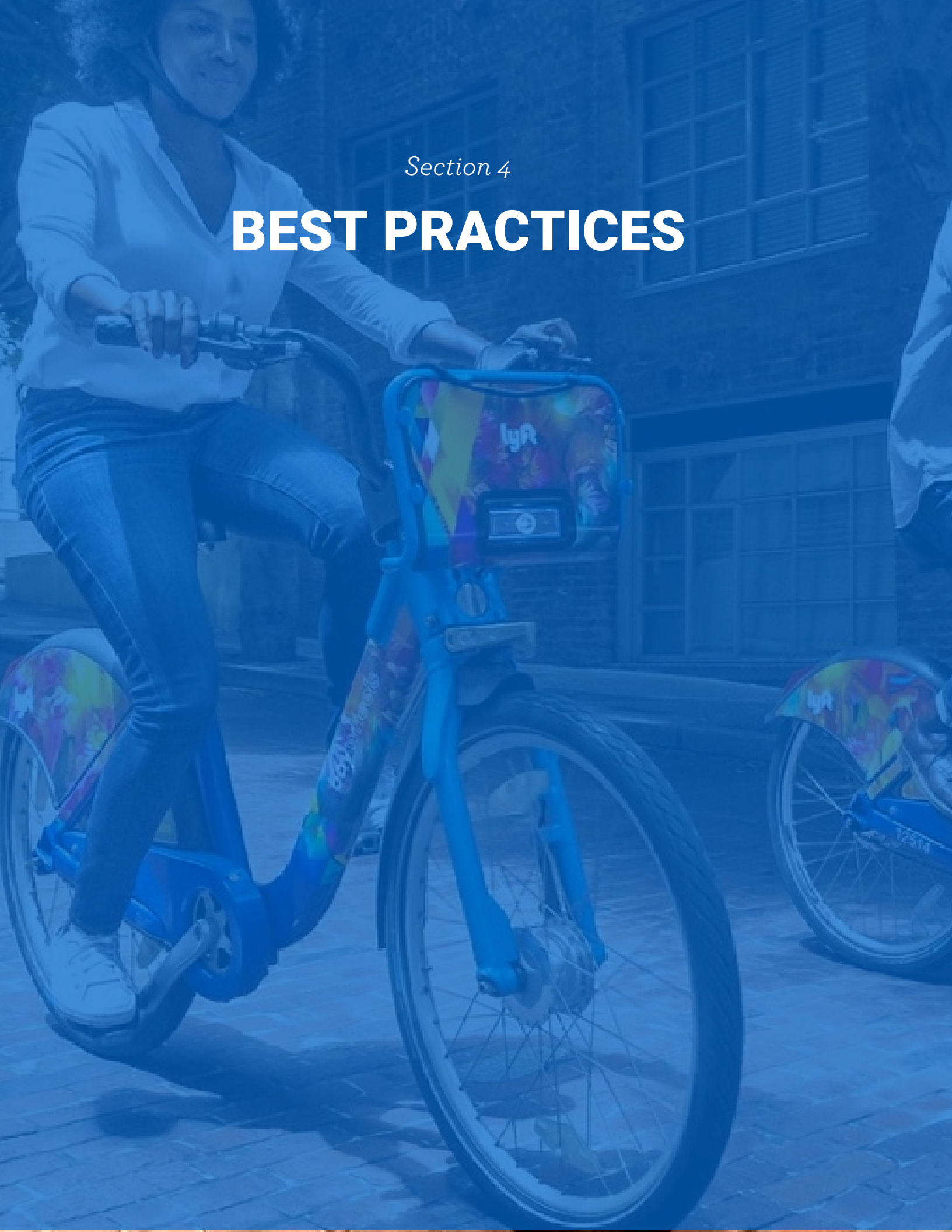
4. Best Practices

INTRODUCTION

The following section summarizes best practices for a shared micromobility system in San Mateo County based on a review of relevant case studies. The section focuses on key considerations requested by C/CAG and the members of the Ad Hoc Advisory Group, and based upon Alta's expertise.

The project team identified three peer systems for review, with a focus on regional or countywide systems that operate in or across multiple jurisdictions, which are the most applicable to a future system in San Mateo County. The three systems are: Bay Wheels in the San Francisco Bay Area, ValleyBike Share in the Pioneer Valley region in Massachusetts, and Sacramento Regional Bike Share.

PEER SYSTEM COMPARISON

CASE STUDY #1: BAY WHEELS

Table 3. MTC Bay Wheels Overview

Location	SF Bay Area, CA
	• San Francisco
	• San José
	• Oakland
	• Berkeley
	• Emeryville
Population[6]	• San Francisco: 874,784
	• San José: 1,029,409
	• Oakland: 422,575
	• Berkeley: 123,065
	• Emeryville: 11,679
Owner/Operator	Lyft (exclusive contract for bike share)
Start of Service	2015
System Type	Hybrid
Number of Stations/Hubs	550 stations
Number of Bikes	7,000+ bikes

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[6] American Community Survey (ACS) 2020 5-year estimates

Riders using the Bay Wheels regional bike share system. Source: mtc.ca.gov

About the System

Bay Wheels is a regional bike share system, launched in 2015, serving the San Francisco Bay Area, including the Cities of San Francisco, San José, Oakland, Berkeley and Emeryville. The initial pilot, launched in 2013, included three jurisdictions along the Peninsula (Redwood City, Palo Alto and Mountain View) but these jurisdictions were not brought into the final coordinated system.

The system is a partnership between the Metropolitan Transportation Commission (MTC), the five municipalities, and Lyft. The program offers discounted memberships for eligible low-income individuals through its "Bike Share For All" program. In this program, eligible individuals can sign up for a one-year pass for $5, and can pay $5/month after the initial one year. Lyft also allows cash payment and payment with a prepaid debit card. Lyft is responsible for verifying eligibility for the equity program.

The system is integrated with the regional transit card, Clipper, allowing registered members to unlock bikes using their card.

System Governance

The system is owned and operated by Motivate (a subsidiary of Lyft, acquired in 2018). MTC, the Bay Area's Metropolitan Planning Organization (MPO) has a Program Agreement with Lyft that outlines the broad requirements of the bike share program. The Program Agreement outlines requirements for the scope of services, key performance indicators (KPIs), liquidated damages, program area, program size, program expansion, maintenance, operations, advertising, sponsorship, revenue sharing, price schedules for memberships, marketing, website, security fund, indemnity, insurance, termination, default, employment, disputes, etc.

MTC, Lyft and the five participating member jurisdictions have a Coordination Agreement that outlines the detailed requirements of member jurisdictions' coordination with Lyft. The Coordination Agreement

outlines the details of a steering committee and member communities' responsibilities regarding permitting, CEQA compliance, summary of local activities, and notifications to MTC.

San Francisco and San José also have their own agreements with Lyft regarding hybrid e-bikes. The agreements are between each city and Lyft. The agreements outline clear requirements for Lyft to comply in order to deploy e-bikes. Details such as bicycle component requirements, fees, number of bikes, e-bike-specific KPIs, etc are specified.

All entities are responsible for their own costs. This means that MTC and the local jurisdictions do not pay Lyft, and Lyft does not share revenues with the public agencies with the exceptions for fees related to e-bikes.

CASE STUDY #2: VALLEYBIKE SHARE

Table 4. Valleybike Share Overview

Location	Pioneer Valley, MA
	• Amherst
	• Easthampton
	• Holyoke
	• Northampton
	• South Hadley
	• Springfield
	• Chicopee
	• West Springfield
Population	• Amherst: 39,995
	• Easthampton: 15,930
	• Holyoke: 40,161
	• Northampton: 28,552
	• South Hadley: 17,715
	• Springfield: 153,677
	• Chicopee: 55,186
	• West Springfield: 28,527
Owner	Shared ownership between participating communities (public ownership)
Operator	Bewegen Technologies (exclusive contract)
Start of Service	2018
System Type	Docked
Number of Stations/Hubs	74 Stations (20 more planned within 18 months)
Number of Bikes	720 e-bikes (will add about 190 more within 18 months)

About the System

ValleyBike Share is a bike share system that currently serves University of Massachusetts and the communities of Amherst, Easthampton, Holyoke, Northampton, South Hadley, Springfield, West Springfield, and Chicopee, MA. The system plans to expand to Westfield later in 2022. Interest in the system began in 2008, though planning in earnest did not begin until 2014 when Pioneer Valley Planning Commission (PVPC) hired Alta to lead the Pioneer Valley Bike Share Feasibility Study. The system received $1.3 million from the federal Congestion Mitigation and Air Quality (CMAQ) Program in 2017, before launching in 2018 in five communities. In late 2018, a sixth community joined after receiving a Massachusetts Housing Choice grant. ValleyBike received a second CMAQ grant in 2019 to fund the system's 2021 expansion, which added about 21 stations, 300 bicycles, and two new communities.

ValleyBike has successfully created a bike share system that spans vastly different communities. Different populations served by the system include high-income and low-income communities, communities with large student populations, communities with large refugee populations, multilingual communities, and more. The system has worked to market the system to as many people as possible, including providing free low-income and student memberships through a grant from the Community Foundation of Western Massachusetts. ValleyBike representatives attend local events such as farmers markets to promote the free memberships and assist with enrollment for unbanked people.

The system is made entirely of electric-assist bicycles. Each of the bikes are equipped with horns, automatic front and back lights, a kickstand, a secondary lock for stops during the rental duration, seat height adjustments, and a front basket that holds up to 45 pounds.

System Governance

The bike share system consists of a contracted partnership between the University of Massachusetts, the Pioneer Valley Planning Commission (PVPC), the City of Northampton and Bewegen Technologies. The City of Northampton is the lead community and Bewegen Technologies is the vendor.

The City of Northampton acts as the lead community for the ValleyBike Share initiative, which makes them responsible for grants, contracts, and multi-community administration. Northampton estimates 0.4 Full-Time Equivalent (FTE) staff time spent working on the ValleyBike Share system.

The participating cities are responsible for their own station locations, the ownership of equipment within their communities, and assisting in identifying and soliciting local sponsors. After the system expanded in 2021, the participating cities (besides Northampton) started to pitch in fees to help fund system administration. Each participating municipality/entity pays $4,056 plus $463 per station. The participating cities are responsible for supplying power to each station within their community, which is estimated to be $110 per station that uses an existing power service and $150 per station that requires a dedicated connection to the power grid.

An estimated $2 million has been spent to date on capital costs for the system, most of which has been covered by the federal Congestion Mitigation and Air Quality (CMAQ) Improvement Program. Concrete pads and electric supply for stations have been paid for by each participating municipality, with the help of some small grants. Electric bicycles, docking stations, and wayfinding stations have mostly been funded by two CMAQ funding cycles, with a third to start in Fiscal Year 2023.

The vendor, Bewegen Technologies, develops and implements the system such as the hardware, software, operation, maintenance, marketing, sponsorship, and advertising. Bewegen keeps all user fees and sponsorship fees in return for no operating costs for the participating agencies/communities.

One financial challenge for the ValleyBike Share system is a lack of sponsors. User fee revenue is estimated to cover about 1/3 of the system costs, but more money from sponsorship fees is needed for long-term sustainability of the system.

CASE STUDY #3: SACRAMENTO REGIONAL BIKE SHARE
Table 5. Sacramento Regional Bike Share Overview

Location	Sacramento, CA West Sacramento, CA
Population	Sacramento: 503,482
	West Sacramento: 53,574
Owner/Operator	Lime and other operators (non-exclusive permit)
Start of Service	2018
System Type	Dockless
Number of Stations/Hubs	133
Number of Bikes	350

About the System

The Sacramento Regional Bike Share system currently serves the Cities of Sacramento and West Sacramento and is planning to expand to the City of Davis.

Here is a brief timeline of how the system has evolved over time:

- 2013: Sacramento Metropolitan Air Quality Management District (SMAQMD) won a grant to launch a bike share system.
- 2015: SMAQMD handed over the management of the bike share grant and system to SACOG.
- 2016: SACOG, in partnership with the Cities of Sacramento, West Sacramento, and Davis, procured Social Bicycles (Sobi) to operate in the three municipalities.
- 2018: Uber (JUMP) purchased Sobi and SACOG launched an all-electric assist bike share system.
- 2019: SACOG was JUMP's second top market globally in terms of daily trips

- 2019: The City of West Sacramento and the City of Sacramento developed local ordinances to allow scooter operators. SACOG ran the regional bike share system with JUMP bikes across the three cities, and private e-scooter companies began operating in Sacramento and West Sacramento.
- 2020: The COVID-19 pandemic halted all shared micromobility operations. Lime took over the operations from Uber.
- 2021: SACOG, West Sacramento, and Sacramento entered into a revenue sharing agreement with Lime. The City of Davis does not currently allow e-scooters and is working with SACOG and Lime to develop a system. E-scooter operators returned to West Sacramento and Sacramento.
- 2022: SACOG issued an RFP to help determine the future arrangement of the regional shared micromobility program.

System Governance

The Sacramento Regional Bike Share system consists of a program agreement between the Sacramento Area Council of Governments (SACOG), the City of West Sacramento, the City of Sacramento, and Lime to operate shared bikes and scooters. In addition to Lime, three other privately owned and operated scooter vendors are currently permitted and operating in Sacramento and West Sacramento. Because the City of Davis doesn't currently allow shared scooters, SACOG and Lime are currently working with the City of Davis to launch bike share in Davis.

SACOG leads the system administration for the agreement with Lime. The City of Sacramento and City of West Sacramento oversee the other permitted scooter vendors. Lime and the scooter vendors own and operate the system. SACOG spends staff time—an estimated 0.2 FTE—administering the system, planning for system expansion, and planning for bike parking to supplement the system. All operational tasks and costs are covered by the vendors. Under the program agreement, the vendors must meet certain service level, equity, and data sharing requirements. A Bike Share Policy Steering Committee, consisting of staff from SACOG and representatives from the city partners, makes administrative decisions regarding the shared micromobility system.

While Lime owns their equipment, SACOG has spent roughly $1 million buying and installing the public bike racks meant for shared bike parking. The Cities of Sacramento and West Sacramento reinvest per trip fees from permitted scooter vendors on bike parking.

SACOG and Lime recently entered into a multi-year revenue-sharing agreement in which Lime receives a subsidy when ridership is low, and Lime provides funding to SACOG when ridership is high. For more information about the terms of this agreement, see the **Appendix D**. The revenue-sharing agreement between SACOG and Lime is a short-term agreement. SACOG spent roughly $75,000 on the revenue-sharing agreement in 2021. SACOG is currently evaluating the system and considering options for a long-term approach to shared micromobility in the region.

A rider docks their shared bike to a station. Source: mobilemarketingmagazine.com

Section 5

RECOMMENDATIONS

5. Recommendations

The following section provides a recommended approach to developing and implementing a regional shared micromobility program in San Mateo County. The proposed approach is based on technical findings from the study, as well as stakeholder input gained through meetings and presentations and one-on-one interviews with potential partners. C/CAG also conducted a public survey to gauge community interest and preferences related to shared micromobility. The survey was available from May 12, 2022 to June 17, 2022 and was promoted through C/CAG Board Members, Committee Members, Ad Hoc Advisory Group Members, City Council Members, the C/CAG website ([link](#)), and community partners (including the nonprofit Thrive, which publishes a newsletter).

GOVERNANCE AND MANAGEMENT

Governance and management refer to the administrative and contracting structure of a future micromobility program. The recommendations outlined in this section explore topics such as who is responsible for program oversight, how are decisions being made, and what is the recommended contracting and procurement model for the program.

Recommendations:

- *Establish a multi-jurisdictional program with a single program manager responsible for procurement, contract management, and program oversight (with support from other organizations in specialized roles).*
- *The recommended program manager is C/CAG. Two other agencies in the region were identified as potential program mangers; however, because of C/CAG's experience with contract administration and managing countywide programs, C/CAG was deemed best suited to play the role of program manager.*
- *Contract out to one or more private, third-party operators.*
- *Individual jurisdictions could opt into the program with the flexibility to dictate certain operating requirements, such as no-ride areas, speed limited areas, and restricted parking areas. Jurisdictions will retain the ability to fine the operator or impound vehicles in instances of violations. Ideally any day-to-day operational issues will be handled by the vendor with oversight from the program manager.*
- *Establish a governance committee composed of participating jurisdictions, the program manager and any other key stakeholders as needed. Stakeholders may include SamTrans, Caltrain, BART, MTC, Commute.org, Community Based Organizations, Employers/Chamber of Commerce, etc. This body would be a venue to discuss program issues, share lessons learned, and resolve problems.*
- *Establish a process for escalating complaints and issues, creating a clear chain of command for any operational issues and complaints. To reduce the burden on participating communities, most operational issues would be passed on to the program manager, who would work with the operator to resolve them. Participating jurisdictions would still reserve the opportunity to escalate issues directly to the vendor if warranted.*

Developing an effective governance/management model is essential to implementing a micromobility program in San Mateo County. The governance structure plays a large role in shaping a micromobility

program, from determining how responsibilities are distributed among partners, to establishing a process for decision-making and oversight.

There are a number of different ways that micromobility programs are organized, with several options for the governance of a program to be tailored to local circumstances. To help have a clearer sense of the region's governance needs and capacities, the study team conducted one-on-one interviews with a wide array of regional partners including transit operators, cities, non-profit organizations, regional agencies, and San Mateo County. Input from those meetings, along with the body of existing work conducted in this study, allowed the team to refine and better define governance options for San Mateo County.

Based on discussions with stakeholders across the region as well as research on best practices in regional micromobility programs, **this study envisions a multi-jurisdictional micromobility program in San Mateo County where operations would be contracted out to one or more private, third-party operators. Management and oversight responsibilities would be of a program manager, and individual jurisdictions could opt into the program and retain certain responsibilities and control over the program within their local jurisdictions**. **The recommended program manager is C/CAG.** This study team recommended this model based on the factors discussed below.

Key Considerations Shaping Governance Approach

In our conversations with regional stakeholders and market research, three key issues were identified that ultimately shaped the study team's recommended governance approach. These three issues highlight the benefit of collective management of micromobility while also accommodating the needs of individual jurisdictions:

Reduce Barriers for Jurisdictions Interested in Implementing Micromobility

As highlighted in the feedback gathered during the regional outreach process, it is important to eliminate or reduce the barriers jurisdictions face in implementing a micromobility program through its governance structure. In the absence of a county-wide approach to micromobility, responsibility for implementing micromobility falls solely on local governments, requiring them to wholly rely on their own resources, expertise, and staff capacity. The status-quo poses a barrier for county-wide program implementation for three main reasons:

- **Duplication of Effort:** Jurisdictions would be duplicating effort by developing their own micromobility regulations and procurement. A single entity could more efficiently manage a micromobility program that covers several jurisdictions.
- **Expertise Gap:** Most jurisdictions in San Mateo County have never managed or regulated a micromobility system, and each relatively small jurisdiction's micromobility program would find it challenging to hire and dedicate a staff person with the expertise needed to manage a program.

- **Economies of Scale:** Operators may be unwilling to operate a stand-alone program in San Mateo County's smaller communities. A single procurement could achieve a more lucrative deal with operators due to the greater size and scale.

A collective governance structure can help address these barriers to implementation by creating a program that communities can opt into. Shared management of a program would reduce the individual regulatory and oversight burden of each participating jurisdiction, and a multi-jurisdictional system would provide a scale that could make the program more appealing to micromobility operators and allow for a stronger negotiating position with those vendors than would be possible individually.

Balance Local Control with Regional Coordination

The study team also gathered that local jurisdictions feel that there is a need to strike a balance between collective action on micromobility and preserving local control. Some aspects of local governments are going to be at the front lines of a micromobility system regardless of the governance model. For example, the public will likely naturally reach out to local government departments and elected officials to resolve issues. Local governments have a responsibility to the public and will need to have the ability to be responsive to complaints. There also is a recognition in a place as varied as San Mateo County that one-size does not fit all. Communities might have specific concerns about where people ride or usage restrictions that need have the ability to be context-sensitive.

All these factors highlight a need for balancing issues of local control with the benefits of regional coordination. Micromobility providers are not regulated by the State of California. This puts issues like the number of vehicles, requirements for locking devices, and other elements of micromobility services in the control of local jurisdictions. Additionally, local jurisdictions control regulations such as parking regulation creation and enforcement, which are integral to micromobility operations. While micromobility would benefit from harmonized regulations and operating procedures across the cities and unincorporated areas of San Mateo County, such coordination will need to be voluntary and optional. The governance model needs to consider how to provide communities with the ability to respond to local complaints and the ability to customize regulations and operating requirements between jurisdictions, and local powers of enforcement over micromobility users and the operator. Additionally, the county-wide program would benefit from providing a consensus-developed template of local regulations that each local jurisdiction can adopt. More similar local regulations will allow a micromobility operator to incur less cost in meeting differing regulations and will allow users an easier to understand experience, which should support higher ridership.

Provide Customers a Seamless Journey

In the design of a micromobility program, best practices for a successful system include ensuring the system meets the needs of its users. A seamless customer experience that does not require multiple accounts, forms of payment, or different vehicles to complete a single trip can lead to higher ridership and wider system adoption. Trips often do not neatly fit within jurisdictional boundaries and users would

benefit from a standardized riding experience across San Mateo County. This means the ability to use the same vehicle or micromobility device across jurisdiction lines and a consistent user experience would serve users and increase the effectiveness of the program.

Governance plays a part in facilitating a seamless journey by ensuring the program functions predictably across jurisdiction boundaries. It is in the interest of all jurisdictions that riders in San Mateo County have a positive experience on micromobility; a negative experience on one micromobility system regardless of its jurisdiction will lower the likelihood of future micromobility trips that individual might take on any micromobility system.

Program Manager / Lead

Creating a multi-jurisdictional micromobility program in San Mateo County will require identifying a program lead and champion. There are two general models for managing a multi-jurisdictional system:

- **Local management with inter-jurisdictional oversight and coordination:** Participating jurisdictions opt into a regional program and have some governance decision-making structure. In this model, local jurisdictions would manage most day-to-day responsibilities for operating the system, while major programmatic and regulatory decisions fall on the collective group. A good example of a decentralized system is Capital Bikeshare in the Washington, DC region. Each jurisdiction has its own contract with Motivate, the program operator, and a committee composed of representatives from each participating jurisdiction make collective decisions that could impact the system such as adopting new user pricing, acquisition of a title sponsor, or coordinating on bicycle replacement investments. An organization with countywide responsibilities like C/CAG could help convene jurisdictions and help run coordination activities. Alternatively, the program could rely solely on the participating jurisdictions to coordinate among one another.
- **Centralized management on behalf of jurisdictions:** Centralized management of a system is where there is a designated entity that manages the program. Centralized management does not mean that individual jurisdictions do not have a voice in program management, just that one entity takes on a leadership role. For example, in the Bay Area, the multi-jurisdiction Bay Wheels program is managed by Metropolitan Transportation Commission (MTC) with input from individual jurisdictions. Jurisdictions also retain autonomy to direct system implementation elements like station placement. As part of this model, participating jurisdictions would have a say in how collective decisions are made and the manager would be responsible for convening an oversight group.

While either approach can work in a variety of contexts, the study team recommends **a centrally managed program** to best meet the needs of San Mateo County.

Benefit of a Single Program Manager

The study team recommends that San Mateo County pursue a system with a **single program manager** to contract and oversee the program. This recommendation is driven by several factors:

- **Simplicity:** A single entity in charge of overseeing and managing the contract is a simpler approach than decentralized management of a program. Third party operators would have a primary point of contact and single point of responsibility.

- **Number and Size of Participating Jurisdictions**: San Mateo County is comprised of over 20 jurisdictions ranging in size from just over 1,500 people in the Town of Colma to over 100,000 people in Daly City. A centralized management approach would reduce the burden placed on individual jurisdictions. While larger communities may have the staff capacity and expertise to play an active role in program management, smaller communities could effectively be excluded from a decentralized program in San Mateo County due to their size.
- **Local Champion:** Among the jurisdictions in San Mateo County, there is no clear local program lead ready to act as a county-wide champion. A single multi-jurisdictional program manager could act as the champion, helping coordinate among the jurisdictions and reach joint decisions.
- **Efficiencies of Scale with Centralized Management:** A multi-jurisdictional system under centralized management would enjoy greater efficiencies of scale compared to a decentralized program. Instead of dividing duplicative responsibilities across people in several jurisdictions, a single program manager could oversee the program. Centralized management could facilitate knowledge sharing and administrative efficiencies for the public members of the system, as well as provide a more economically attractive market for a private provider.
- **Greater Negotiating Power:** A collective procurement run by a single program manager has greater negotiating leverage than a system composed of several independently negotiated contracts between jurisdictions and operators. A larger system is more appealing to operators and would likely garner a greater level of interest than a procurement at the local level. As such, the public partners and program manager would likely be able to include program requirements such as equity-based membership subsidy and station placement, which may not be economically feasible in small, independent systems.
- **Fundraising Benefits:** A single program manager would likely be more effective at fundraising as compared to individual jurisdictions. The program manager could oversee multi-jurisdictional grant applications, which could be more competitive than individual jurisdictions competing with one another for micromobility funding. A single program manager could also take a lead on private fundraising, including sponsorships and on-system advertising, which would directly benefit from economies of scale.

Roles and Responsibilities

The roles and responsibilities of the program manager could vary based on the desires of participating jurisdictions and the collective needs of the system. Below is a matrix of primary and secondary responsibilities, with secondary responsibilities representing optional functions or functions that could be delegated to other organizations.

Table 6. Matrix of Program Manager Responsibilities

Primary Responsibilities	Secondary Responsibilities
• **Pre-Procurement:** Form regional micromobility collective, develop mutually agreed upon operating guidelines/principles and build out a regulatory framework for micromobility. • **Procurement:** Develop and execute the procurement of one or more program operators. • **Coordination:** Establish a forum for participating jurisdictions and help participants come to collective decisions. • **Contract Management:** Manage operator contracts and serve as a centralized point-of-contact for the vendor. • **Manage Issues:** Act as an interface between the operator and jurisdictions if any operating issues arise. Work with the operator to resolve issues. • **Public Communication:** Limited public engagement related to the core function of program such as attending public meetings at the behest of jurisdictions, drafting press releases, and managing press inquiries.	• **Program Monitoring and Data Management:** Act as a central repository for micromobility data and reply to data requests from stakeholders. Support reporting and program monitoring. Procure monitoring software for system. • **Marketing and Community Engagement:** Lead marketing and engagement or supplement work being done by program operator. Range of functions include equity-focused community engagement, integration of micromobility into existing transportation demand management (TDM) activities, and educational marketing campaigns to drivers and others who do not use micromobility. • **System Planning:** Support siting of micromobility hubs (if applicable). Work with jurisdictions on planning and implementing supporting infrastructure. • **Fundraising and Grant Management:** Prepare grant applications and manage received grants. Oversee acquisition of sponsors and advertisers.

Based on the study team's experience working with other communities, one full-time equivalent (FTE) of staff resources is needed to manage all the listed primary responsibilities. These responsibilities could be held by one individual or distributed across multiple staff members. The resources needed for the secondary responsibilities will vary. Program monitoring and data management could be handled by the same staff FTE as the primary responsibilities, with specialized staff or contract support. Similarly, that FTE could manage some number of grant applications and grant awards with additional support from other staff or contracts.

Once the pilot period concludes, the program manager, in conjunction with participating jurisdictions, should prepare a pilot evaluation that provides guidance on the future of micromobility in San Mateo County. The evaluation should include an analysis of program performance as well as specific recommendations around how governance, program management, cost sharing, and revenue sharing

can be adjusted based on lessons learned. Additional details on a pilot program evaluation are included in the **Evaluating Pilot Performance** section.

If the program elected to do additional marketing in-house (e.g., creating a micromobility ambassador program, developing a TDM micromobility program), additional staff resources could be necessary. While the system as envisioned would not need extensive infrastructure planning, if the program manager was responsible for functions like station siting and the planning of support infrastructure (e.g., bike lanes, wayfinding), that would require support beyond the one FTE.

Types of Organizations

Several organizations could serve the role of program manager, including County-wide agencies, independent authorities, or non-profits with suitable mission alignment with micromobility. The lead organization should ideally have the following characteristics and know-how:

- Countywide scope with strong existing relationships with local jurisdictions.
- Ability to navigate local sensitivities and politics.
- Consensus-building and facilitating inter-jurisdictional communication.
- Procurement expertise and capacity.
- Project and contract management expertise, including the capability to oversee a contract, manage additional subcontractors, and fulfill contract reporting requirements.
- Expertise in planning and data management, including the ability to work with micromobility datasets, or the ability to contract for that expertise.
- Ability to effectively apply for and manage grants.
- Ability to conduct field inspections and travel between participating jurisdictions easily.

San Mateo County has several possible candidates to take a leadership role such as C/CAG, SamTrans, and San Mateo County government. Commute.org is another organization that could play a supportive role in program management but may lack the capacity for procurement and contract management. MTC, which manages Bay Wheels, could serve as an advisor for the shared micromobility program in San Mateo County; however, MTC is not a likely candidate to lead the micromobility program in C/CAG. MTC's current contract to operate Bay Wheels does not allow for new jurisdictions to join the program until the contract expires in 2027, and if MTC manages the program in San Mateo County, that program could not be at all associated with Lyft, who operates Bay Wheels. Note that these organizations are identified solely based on a technical capacity and the study team has not received any commitment from an organization to lead program implementation. Any of these organizations may have valid reasons for not taking on a management role, from staff capacity constraints to a lack of suitable alignment with organizational mission and priorities.

Depending on the characteristics the selected lead organization as well as that organization's capacity, a second regional entity could provide a supporting role in program management. For example, one agency could manage the data and monitoring of the program, while another could be responsible for procurement, contract management, grant applications and management, and inter-jurisdictional

communication and consensus-building. **Based upon the characteristics noted above, C/CAG is the preferred program manager.** While other agencies in county have technical capacity, the study team concluded that given C/CAG's countywide program scope, its proven ability to build consensus with partners across jurisdictional boundaries, and general support from its board on the program's ability to reduce vehicle miles traveled, C/CAG should be the program manager. Success in shared micromobility will depend on having a program that operates on a larger scale, and C/CAG has a strong record managing multi-jurisdictional programs.

Decision-Making and Coordination

Governance Committee

The program should have a governance committee composed of staff from participating jurisdictions, the program manager and any other key stakeholders such as SamTrans, Caltrain, BART, MTC, Commute.org, Community Based Organizations, Employers/Chamber of Commerce, etc. This body would be a venue to discuss program issues, share lessons learned, and resolve problems. The governance committee will play an integral role in shaping the micromobility policy in San Mateo County and, leading up to the pilot phase of the program, the governance committee will lead the development of the program guidelines for the regional micromobility program. The governance committee is expected to serve the following functions.

- Serve as the Program's governance board, with responsibility to approve all program contracts, bylaws, procurements, and annual budget.
- Set the Program's strategic direction, including (but not limited to), adopting and amending program goals and objectives.
- Provide oversight of Program Manager, reserving the right to terminate and/or appoint a new Program Manager.
- Approve the inclusion of any additional jurisdictions to the Program.
- Appoint third-parties to provide special services as needed to fulfill the committee's role, as long as it does not conflict with the agreed-upon responsibilities of the program manager.

In developing the pilot program, the program manager and participating jurisdictions will need to establish the basic framework for the governing body. For example, how is decision making power delegated among participants? Do decisions require consensus among all members or simply a majority vote? Do all participants have an equal say or are votes reflective of jurisdiction size or share of total micromobility fleet? How do the existing programs fit into the governance committee? In addition, the governance committee, along with the program manager, should play an active role in shaping marketing and community engagement for the plan. Marketing and community engagement activities can be written into the requirements of the RFP, but the governance committee can lay the groundwork for these activities before procurement begins. The committee should rely on the numerous community-based organizations already on the ground to help build community buy-in.

Process for Escalating Complaints and Issues

Micromobility programs will inevitably generate complaints or issues from the public, such as:

- Loss of parking and other space in the public right-of-way for micromobility parking
- Improper parking of vehicles / blocking public right-of-way.
- Improper or unsafe usage of vehicles by users. While certain issues may require engaging the user, systematic solutions like revising no-ride areas, speed restrictions, and parking locations may be able to address these problems.
- Vehicle vandalism

The program manager and participating jurisdictions should **establish a clear process for communicating and resolving complaints**. Ideally the process of resolving operating issues is streamlined and efficient while reducing the burden placed on individual jurisdictions. In a micromobility program, complaints and issues may be directed to a variety of places: directly to the operator through the call center or app; to local staff; directly to the program manager; through a 3-1-1 system or similar public resource for non-emergency calls; the police; or local elected officials. To help streamline communication, all issues should be forwarded to a single entity.

The study team recommends that all issues and complaints be directed to the selected private operator. The program manager should be provided a copy of complaints on a regular basis (ideally daily, with a weekly and monthly aggregate metric made available as well). The program manager should have access to a database to see how any complaints were resolved. If complaints are not resolved within a pre-determined timeframe (e.g., 24-hours), the complaint should be sent directly the program manager for follow-up and resolution with the operator. If necessary, representatives from individual jurisdictions can be brought in to discuss problems.

The governance committee is another venue for any major issues to be discussed and resolved. Jurisdictions should have access to complaints being submitted to the system and a transparent understanding of the type, frequency, and resolution of complaints.

Local Responsibilities

While the goal of the proposed governance structure is to minimize the day-to-day administrative burden of the program on local jurisdictions, communities will likely want to retain some responsibilities and control over the system.

Jurisdictions help serve as the eyes and ears of the program manager. As mentioned in the previous section, jurisdiction officials will likely be the ones to receive any community complaints. Jurisdiction staff should have access to the same complaint and resolution information as the program manager to allow them to independently follow-up on any complaints.

Jurisdictions will likely want to retain some enforcement responsibilities, including the power to impound vehicles or charge fines and penalties to operators for breach of contract terms. Jurisdictions

may elect to do their own system field inspections to supplant any field inspections done by the program manager.

COSTS AND FUNDING

Recommendations:

- *Procure through a competitive RFP a private operator responsible for self-financing and operating the system.*
- *Public costs would be limited to the cost of procurement, oversight, and contract management and could be partially recouped through a permit fee.*
- *Opportunity to negotiate a program subsidy in return for operator guarantees such as the equity pricing program, caps on user fees, or certain geographic operating requirements.*

This section outlines the costs and potential funding sources for micromobility in San Mateo County. The public cost of a program is heavily dependent on a program's business model. For example, a community can implement a micromobility program for little cost if a private operator is willing to provide a system under a permit or RFP scheme. The only public costs of such a program are any resources needed for management and oversight. On the other extreme scale, some communities elect to fully own their micromobility program and finance capital equipment and operating costs themselves. These publicly owned programs may rely on a private vendor to run the program but will reimburse the vendor for the cost of operations. In both scenarios, the total cost of operating the program may be very similar but the net cost to the public will differ substantially. To maintain clarity, the study team has focused on the net cost to the public, in other words the operating costs borne by the public that are not otherwise covered by the operator or through program fees. This section outlines four cost scenarios to illustrate the range of program costs:

- Scenario 1: No action
- Scenario 2: Fully privately owned system with no public subsidy
- Scenario 3: Fully privately owned system with public subsidy
- Scenario 4: Publicly owned program

Costs by Micromobility Scenario

The public costs of creating a micromobility program will vary based on the program's business model. To help illustrate this variability, the study team developed costs for four scenarios: No Action, Regional Program Oversight and Contract Management, Subsidized System, and Fully Publicly Owned System. Each scenario builds on the one(s) before it such that the costs of the Fully Publicly Owned System include the costs of a subsidized system, and the cost of a regional system with program oversite and contract management. While the four scenarios presented provide context to micromobility costs and revenues, the study team recommends San Mateo County implement one of two scenarios: Regional Program Oversight and Contract Management or a Subsidized System. These two scenarios are consistent with the recommendations laid out in the Governance and Management section above. For every scenario, the costs are estimated assuming the system will have 500 bicycles and 50 parking locations/hubs for each pilot program service area. Based on data from peer systems, the average user

fee per trip (i.e., the average revenues generated per trip) is estimated to be $3.00 for Scenario 2, Scenario 3, and Scenario 4. These user revenues could be invested back into the system to support operations. The cost of no action is largely theoretical and highlights the opportunity cost of not implementing a program. A summary of the scenarios is shown in Table 7 below.

Table 7. Overview of program costs by scenario for a single pilot program location

Scenario	Key Facts	Approximate Annual Subsidy	Approximate Capital Costs
Scenario 1: No Action	• No associated capital costs • No associated operating costs • Leads to duplication of effort among jurisdiction, small impact on reducing single-occupant vehicle (SOV) trips	• Unknown (would include redundant staff efforts in local jurisdictions)	• None
Scenario 2: Regional Program Oversight and Contract Management	• Minimal capital costs (about $2,500 per parking location/docking station; $125,000 for 50 mobility hubs)[7] • One FTE of resources to manage contract and program oversite ($250,000) • Potential for modest revenues through permit fees ($20 to $100 per vehicle per year; $20,000 to $50,000, or $0.10 per trip) to offset costs • Annual program evaluation ($50,000)	• $200,000 - $230,000 for program management and oversight, net of permit revenue. • $50,000 annually per year for program evaluation	• $125,000 up front for installation /construction of hubs

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[7] The number of mobility hubs is based on best practices in peer systems. In general, for fully docked systems, stations should be between one-quarter and one-half mile apart in high ridership areas. In hybrid systems, stations can be less dense, since customers do not need to park vehicles at a hub. The study team took a conservative approach to estimating the cost of hubs; the participating communities may need fewer hubs that require little or no fixed infrastructure.

Scenario	Key Facts	Approximate Annual Subsidy	Approximate Capital Costs
Scenario 3: Subsidized System	• Minimal capital costs (about $2,500 per parking location/docking station) • One FTE of resources to manage contract and program oversite ($250,000) • Subsidies of $100,000 annually to the vendor to cover costs associated with operations and maintenance of the program[8] • Potential for modest revenues through permit fees ($20 to $100 per vehicle per year; $20,000 to $50,000, or $0.10 per trip) to offset costs • Annual program evaluation ($50,000)	• $300,000 - $330,000 for program management and operator subsidies, net of permit revenue • $50,000 annually for program evaluation	• $125,000 up front for installation /construction of hubs

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[8] Based on an assumed trip per vehicle per day of 1.0 and the operating subsidy paid by the program managing public entity to cover operating shortfalls and the added cost of contract requirements ($0.55 subsidy per vehicle * 500 vehicles * 365 days per year).

Scenario	Key Facts	Approximate Annual Subsidy	Approximate Capital Costs
Scenario 4: Fully Publicly Owned System	• Major capital investment ($2,500 per vehicle and $2,500 per parking location/docking station, 50 locations) • One FTE of resources to manage contract and program oversight plus operating fee with vendor (about $200 per vehicle per month) • 25 percent cost recovery from user fees. • Potential for additional revenue from advertising, sponsorships, and local operating support not counted. • Replacement of 20% of the fleet per year due to state-of-good repair (e.g., end of life replacement, theft, vandalism). • Annual program evaluation ($50,000)	• $650,000 annually in operating ($1,200,000 operating costs - $550,000 revenue from user fees)[9] • $50,000 annually for program evaluation •	• $250,000 in annual state-of-good repair costs • $1.6 million in start-up capital costs

While all the scenarios require some level of financial commitment, there may be opportunities to obtain funding from both public or private partners through sponsorships. Potential program sponsors include Peninsula Clean Energy (PCE), Meta, and Google.

PLAN DEVELOPMENT

Recommendations:
- *Phase 1 Pilot Program*
    - *The study team envisions that the pilot would run for one-two years, with participating jurisdictions committing to stay within that program through the duration of the pilot.*
    - *Will cover two of 5 Potential Pilot Program Service Areas*
        - *Where the service area covers multiple jurisdictions, the service area will be contiguous*
    - *500 vehicles*
    - *Approximately 3.75 square miles per service area*
    - *50 stations/hubs (if a docked or hybrid system is chosen)*
        - *1.6-2.0 designated parking spots per bike*
        - *16 hubs per square mile in high density locations*

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[9] Operating costs and revenues are estimated based on revenues for peer systems. This figure assumes one trip per vehicle per day for a system of 500 vehicles with average user revenues of $3.00 ($3.00 * 500 vehicles * 365 days per year). The operating cost figure assumes $200 per vehicle per month ($200 per vehicle per month * 500 vehicles * 12 months per year).

- *System Expansion*
  - *The pilot is an opportunity for the county to refine its micromobility management approach. At the end of the pilot period, the study team envisions the county would make recommendations for and adopt a revised program management structure that incorporates lessons learned from the pilot.*
  - *The system should expand beyond the initial Phase 1 Pilot Program service area based upon factors such as ridership, funding, infrastructure, new indicators of demand, and political will/agency capacity.*
  - *Following the pilot program, with the multijurisdictional contract in place, the program manager should work with the operator(s) to develop satellite programs at coastal communities, with consideration for alternate service models, such as reduced user fees and/or longer-term lending.*

A shared micromobility system can be implemented in multiple phases, with an initial service area for system launch and subsequent system expansion. The service area is a designated boundary within which a shared micromobility system operates. The first phase of a shared micromobility system provides the opportunity for residents and visitors to get comfortable with small-scale shared micromobility. This can help build support for bike and/or scooter share and bike infrastructure before the system expands to other neighborhoods and/or jurisdictions.

Based upon prior results and analysis—the Feasibility Analysis, Best Practices review, coordination with the Ad Hoc Advisory Group, and the program vision, goals, and objectives—the study team recommends **two phases for the shared micromobility system in San Mateo County: the initial Pilot Phase and the expanded Countywide System**.

Phase 1 Pilot Program Recommendations
Methodology for Identifying the Potential Pilot Program Service Areas
This analysis aims to find potential areas in San Mateo County that are best suited for an initial shared micromobility pilot program. This analysis, consistent with the Feasibility Analysis, took into account characteristics that aim to address the program vision and goals and includes: equity focus areas, proximity to transit, proximity to barriers, and estimated micromobility demand. For more information about each of these factors see the **Appendix A**.

In addition to the characteristics used in the analysis, political support should be taken into consideration when choosing an area for the initial pilot program. (For a list of supportive jurisdictions–those that have a plan that supports shared micromobility either as a goal, objective, policy, or recommendation–see the Existing Conditions section in this report.)

A 30 acres hexagon grid, covering the whole county was associated to the characteristics in Table 8. Each hexagon approximates the typical walkshed of a micromobility station or hub. As previously mentioned, system type has not been chosen, however, the hexagon represents the distance one can

reasonably expect a shared micromobility user to walk between a shared micromobility vehicle and their destination.[10]

Table 8. Pilot Study Characteristics and Scoring

Characteristic	Method + Scoring of Association of Hexagon	Weight
Equity Focus Areas (EFA)[11]	• Hexagon in EFA = 1 • Hexagon not in EFA = 0	25%
Proximity to Transit[12]	• Within ½ mile of commuter rail = 1 • Within ¼ mile of high frequency transit = 0.5	15%
Proximity to Barriers	• Within 500ft of barrier = 0 • Within ¼ mile of barrier = 0.5 • More than ¼ mile away =1	10%
Demand	• Percentile Rank	50%

Once the hexagons were associated with each characteristic, an overall score was calculated for each hexagon using the weights shown in Table 8. These results are visualized in Map 9, which demonstrates the relative score of each hexagon. The potential pilot program services areas show the highest concentrations of high scoring hexagons.

Potential Pilot Program Service Areas

Map 9 shows the five top scoring locations, in no particular order, for San Mateo County's shared micromobility pilot program. This study **recommends two of the five locations** be selected for the pilot. The five potential service area locations are meant to guide decision-making for an appropriate pilot program. Each location contains multiple jurisdictions, so the pilot can test out the proposed governance structure across jurisdiction boundaries. The chosen pilot program service area should have jurisdictional support from all jurisdictions within the pilot area. The potential pilot program service areas include:

- **Redwood City & North Fair Oaks:** This potential pilot location covers areas of both Redwood City and North Fair Oaks. Within the areas are a number of restaurants and stores, a downtown district and medical facilities. Additionally, the area contains a Caltrain station, scored high in the demand analysis, and includes equity focus areas in both jurisdictions. See the approximate pilot service area below.

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[10] *The goal of these hexagon grids is to score all general locations and enable average scores to show prioritization results by different geographies. The benefit of this unit of analysis is each area under study is equal in size, and has a uniform shape that is known to work well for spatial sampling.*

[11] *Equity Focus Areas are consistent with the methodology used in the 2021 C/CAG San Mateo County Comprehensive Bicycle and Pedestrian Plan.*

[12] *Commuter rail includes Caltrain and BART. High frequency transit includes buses with 15 minute headways.*

- **Daly City, Pacifica, South San Francisco, & San Bruno:** This pilot area includes sections of four jurisdictions: Daly City, Pacifica, South San Francisco and San Bruno. This area contains equity focus areas, multiple commercial areas, Skyline College, and scored relatively high in the demand analysis.
- **Daly City, Broadmoor, & Colma:** This pilot project area serves both Daly City, Broadmoor, and Colma. This area includes the Daly City BART station, Colma BART station, many businesses along Mission Street, and scored high in the demand analysis. The majority of the area is an equity focus area. See the approximate pilot service area below.
- **South San Francisco & Unincorporated San Mateo County:** Although this recommendation would only serve South San Francisco and a small portion of unincorporated San Mateo County, the number of businesses and relative scores of the hexagons in the area make it an appealing potential location. This area has a Caltrain station, the many businesses in downtown South San Francisco, scored well in the demand analysis, and is an equity focus area.
- **Millbrae & Burlingame:** This pilot area includes Millbrae and the northern border of Burlingame. This area has a Caltrain station, includes an Equity Focus area, many businesses along Broadway in Millbrae, and a medical center and businesses along Camino Real in Burlingame. The City of Millbrae and City of Burlingame recently procured a vendor for a joint shared micromobility program, with Burlingame as the lead.

While Coastal communities in San Mateo County were not included as one of the five potential pilot program service areas, they should be considered as part of the program service area expansion. The results (Map 9 below) show areas along the coast that scored well—such as Half Moon Bay and Pacifica—but they are smaller areas that would not be well suited for a pilot program. See below for more information about recommended pilot program size, coverage, and station/hub density.

Map 9. Prospective Pilot Areas
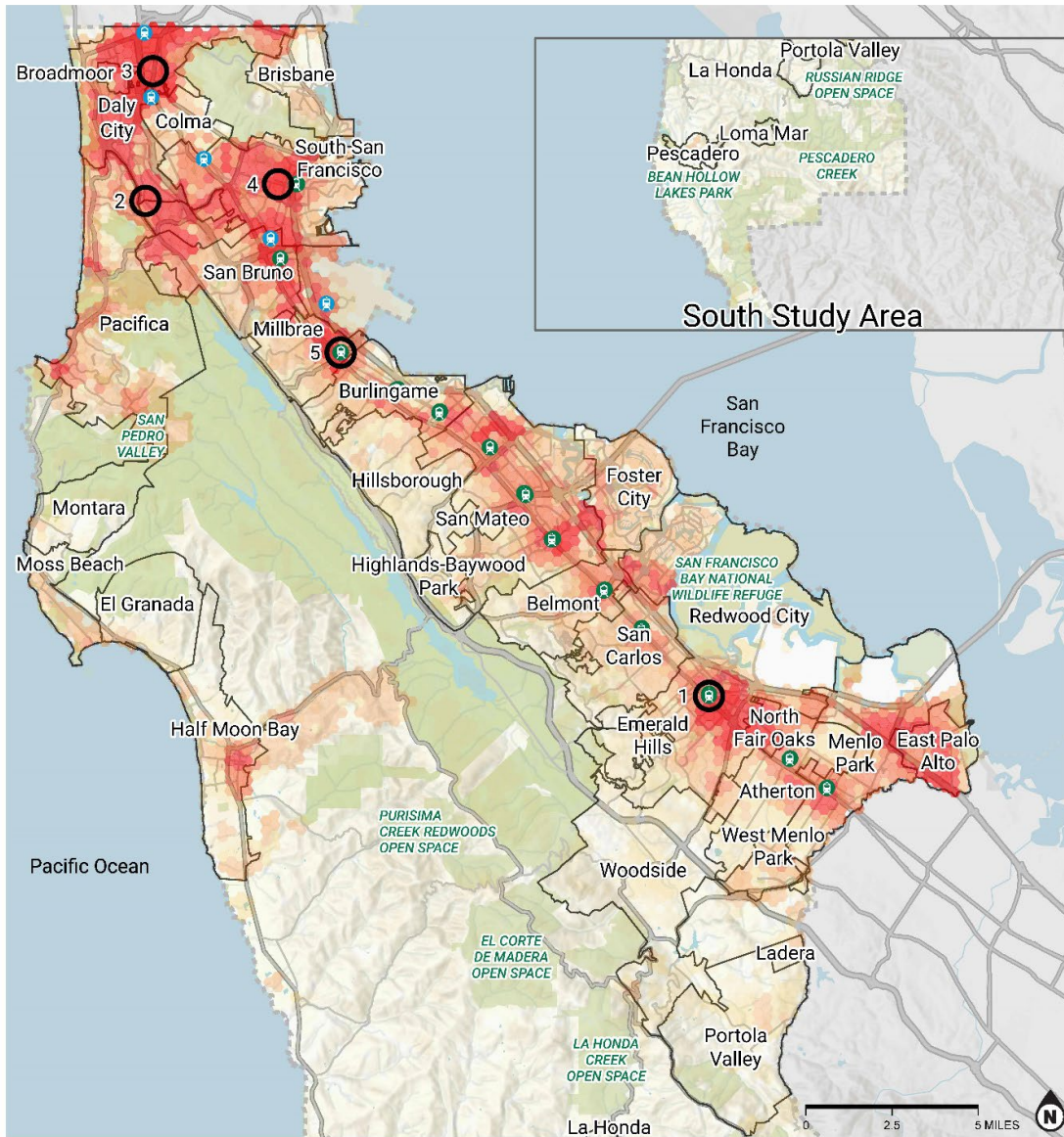
PROSPECTIVE PILOT AREAS

SAN MATEO COUNTY
SHARED MICROMOBILITY
FEASIBILITY STUDY

alta

PILOT STUDY RECOMMENDATIONS & SCORE

○ Pilot Study Recommendations

Higher Score

Lower Score

DESTINATIONS + BOUNDARIES

Ⓑ BART Station
Ⓒ Caltrain Station
County Boundary
San Mateo County City Boundaries
Water
Park

Data provided by the 2021 C/CAG Comprehensive Bicycle and Pedestrian Plan (2021), Caltrans State Highway Network (2021), San Mateo County GIS Open Data (2021), ESRI Living Atlas (2021), American Community Survey 5 Year Estimates (2019), Longitudinal Employer-Household Dynamics (2019), Bureau of Transportation Statistics Docked Bikeshare Ridership (2021), US Environmental Protection Agency Smart Location Database (2021),and OpenStreetMap (2021).

Recommended Pilot Program Service Areas

This study recommends two of the five locations be selected for the pilot: **Redwood City & North Fair Oaks and Daly City, Broadmoor, & Colma** based on their close proximity to high frequency transit locations, the ability to serve a large population in an equity priority community with limited access to vehicles and high reliance on transit. See the approximate pilot service areas in Map 10 and Map 11 below. As previously described, each hexagon approximates the typical walkshed of a micromobility station or hub. While the system type has not been chosen, the hexagon represents the distance one can reasonably expect a shared micromobility user to walk between a shared micromobility vehicle and their destination.

While vehicle deployment would be focused in the highlighted hexagon areas below, the service area would include the entire chosen jurisdictions. Users would be able to ride anywhere within the pilot program jurisdictions. The jurisdictions and governance committee could expand the vehicle deployment area based upon real-time demand.

Map 10. Recommended Pilot Service Area for Redwood City & North Fair Oaks
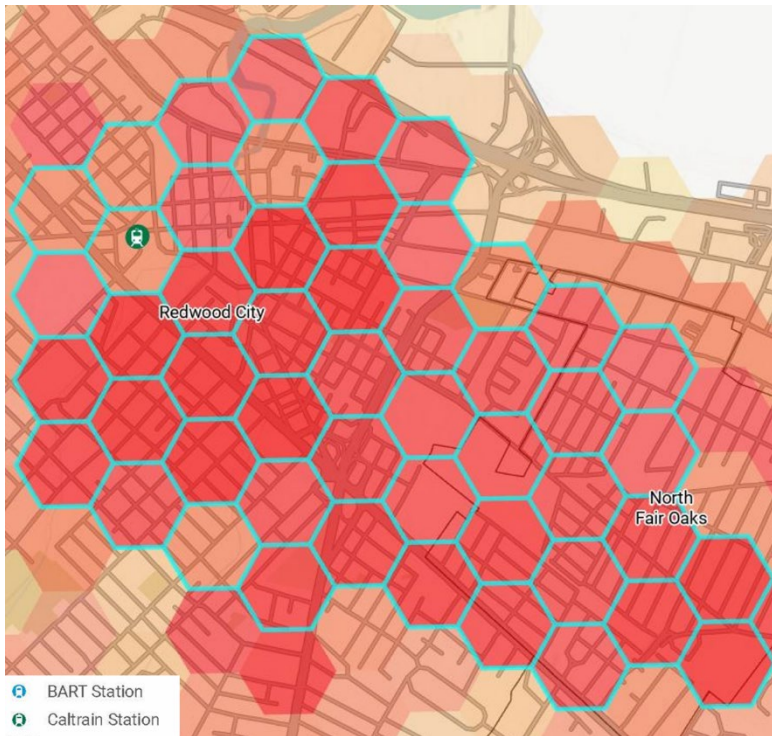
Map 11. Recommended Pilot Service Area for Daly City, Broadmoor, & Colma
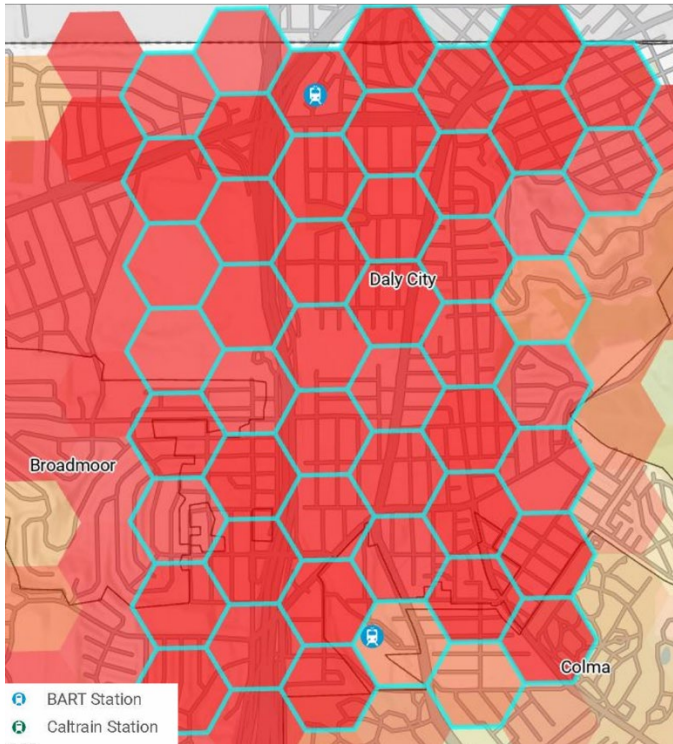
Pilot Program Size and Coverage

Regardless of system equipment type, the minimum number of recommended shared micromobility vehicles for a for each of the chosen pilot program service areas in San Mateo County is **500 vehicles**. A system with less than 500 vehicles will not be able to cover multiple jurisdictions at an adequate density of vehicles (see vehicle density standards below). Each **pilot program service area should be contiguous** when covering multiple jurisdictions. Gaps within the service area make it harder for users to navigate the systems and for operators to rebalance the system.

Stations and/or Hubs

Should the program include a docked or hybrid system type, the minimum number of recommended shared micromobility stations/hubs should be **50 stations/hubs** for each service area. The following should be considered when determining the density of stations and/or hubs:

- The industry standard for providing parking capacity for bike share ranges from 1.6-2.0 designated parking spots per bike. A higher number of racks per bike reduces the likelihood of hubs reaching full capacity, which reduces out-of-hub parking and makes for a better and more reliable user experience.
- Within higher demand areas–such as downtowns–industry best practices suggest that bikes or bike hubs should be placed within a 3 to 5-minute walking distance of one another, corresponding to approximately a quarter mile. This represents a hub density of roughly 16

hubs per square mile. For lower demand locations, the inclusion of the hybrid system with vehicles that can lock to a bike rack anywhere in the service area allows for hubs to be farther apart, as users will have the option to park at a rack near their destination. The project team recommends hubs in areas of higher demand have more vehicles and more racks, while hubs in areas of lower demand have fewer vehicles and fewer racks.

Service Area Expansion

Shared micromobility service expansion can be accomplished either as a single large-scale system expansion or incremental installation of hubs as funds become available.

Conditions for system expansion

It is not necessary to expand all at once. The timing and size of the expansion should consider the following factors:

- **Ridership:** High system ridership—over 1 trip per vehicle per day—may indicate the system is ready to expand.
- **Funding:** Identifying additional funding from sponsorships, grants, or operational funding will be necessary to determine the timing and size of system expansions.
- **Infrastructure:** As new bike infrastructure is implemented, system expansions could be coordinated with the arrival of new facilities that provide safe connections for people riding micromobility devices. Space for shared micromobility can be included in the design of new infrastructure. For example, a bike share station could serve as a separation device in a protected bike lane, or a shared-use path could include additional bike racks for parking micromobility vehicles. Additionally, planning for higher usage of bikeways may result in different engineering to accommodate more and a wider variety of users than if micromobility is not planned.
- **New Indicators of Demand:** Shared micromobility system expansion could be implemented to respond to new development, changes in land use, or expansion of transit service.
- **Political will/agency capacity:** Above all, shared micromobility system expansion will depend upon the political will and the capacity of the managing agency and its public partners.

Following the pilot program, with the multijurisdictional contract in place, the program manager should work with the operator(s) to develop satellite programs at coastal communities, with consideration for alternate service models, such as reduced user fees and/or longer-term lending. The program manager will work with the operator, local jurisdictions as well as stakeholders such as Commute.org and Midpeninsula Regional Open Space District to address coastside satellite programs.

Areas for expansion should consider the following:

- The other 3 potential pilot program service areas described above (Daly City, Pacifica, South San Francisco, & San Bruno; South San Francisco & Unincorporated San Mateo County; Millbrae & Burlingame).
- Expansion to jurisdictions adjacent to the initial Phase 1 Pilot Program
- Expansion to the coastside, including:
  - The City of Half Moon Bay
  - The City of Half Moon Bay and Unincorporated San Mateo County to provide access beyond the coastside's populated areas to Midpeninsula preserves including Purisima, County parks, and State Park destinations. This aligns with C/CAG's Program goal to

support tourism opportunities, and provides an opportunity to partner with visitor destinations on the coastside to provide a convenient mode to get to destinations.

- Other high-scoring areas from the pilot analysis, such as:
  - East Palo Alto / Menlo Park
  - San Mateo / Foster City
  - San Bruno / Millbrae / South San Francisco

If an existing program already exists in any of these jurisdictions—such as Millbrae and Burlingame—the jurisdictions and governance committee should negotiate an agreement to combine the programs, wait until the existing program ends and the jurisdiction(s) can relaunch shared micromobility as a participating member of the pilot program, or postpone expansion until one of those options is possible.

Section 6

PROGRAM GUIDELINES

6. Program Guidelines

The following section provides detailed program recommendations and guidelines for implementing a regional shared micromobility pilot in San Mateo County. The guidelines build off the technical findings and recommendations developed for this study as well as stakeholder input gained through meetings and presentations with potential partners. The program guidelines are divided into the following sections:

- **Existing Micromobility Regulatory Framework:** A review of state and local micromobility regulations that could impact the implementation of a program in San Mateo County
- **Recommended Program Guidelines and Requirements:** Outline of technical requirements and guidelines to be incorporated into a future request for proposals (RFP). This information is supplanted by examples of current practice across the Bay Area and elsewhere
- **Program Roll-out and Expansion:** Discussion of how a future micromobility pilot program could be expanded over time.
- **Mitigating Risk:** Discussion of strategies to mitigate program risk.

Additional details on recommended program guidelines and requirements are included in **Appendix F.**

EXISTING MICROMOBILITY REGULATORY FRAMEWORK

Today only the Cities of San Mateo and Redwood City have established micromobility ordinances in the county. The Cities of Millbrae and Burlingame have program requirements identified through an RFP; in Fall of 2022 the Cities of Millbrae and Burlingame awarded a contract to Spin to operate a shared micromobility program. After reviewing these existing documents, the only major point of conflict between these established regulations is that while all communities permit bikeshare (including e-bikes), scooters are presently only permitted in Redwood City. Other differences between regulations, such as minimum insurance requirements, could be easily reconciled through a new regional program.

Once a pilot program is established, operational challenges may arise between this new program and existing programs in Redwood City, Millbrae and Burlingame. From the customer perspective, it may be confusing that the two programs are operated separately, especially since one program will eventually be countywide and the other is jurisdiction specific. Once existing permits and contracts expire, jurisdictions can choose to not renew said permits and contracts, which would mitigate potential issues.

RECOMMENDED PROGRAM GUIDELINES AND REQUIREMENTS

The wider study envisions that **a regional micromobility program be established as a pilot, implemented through an RFP to select a vendor who would own and run a local program**. This section outlines an inventory of recommended program guidelines and performance standard, which is summarized in Table 9. Discussion around each topic includes an overview of options, their pros and cons, examples from other jurisdictions, and specific recommendations for the pilot micromobility program in San Mateo County. For the full program guideline recommendations, see **Appendix F**.

Table 9. Summary of Program Guidelines

Topic	Description
Types of Vehicles Permitted	Recommended minimum technical requirements for micromobility vehicles, including for pedal-assist e-bikes, e-scooters, and adaptive vehicles.
Rider Regulations	Outlines rules for where micromobility vehicles are permitted to be operated based on existing state and local regulations.
Vehicle Parking Regulations	Parking regulations with which vendor and riders must comply. Modeled closely on existing standards outlined in area micromobility ordinances
Speed Limits	Sets maximum electrically-assisted speed for devices to 15 mph for scooters and 20 mph for bicycles
Age Restrictions	Outlines state age restrictions for scooters and e-bicycles. California vehicle code requires a driver's license or permit to operate an e-scooter; e-bikes do not face the same restriction, but operators typically set a minimum age due to liability concerns.
Fleet Size	Recommends initial fleet size of 500 vehicles, with specific minimum limits set systemwide and per operating jurisdiction.
Insurance and Indemnification Requirements	Sample insurance and indemnification requirements taken from other local micromobility programs.
Data Sharing and Frequency	Describes when and how data is to be shared with the program manager, participating jurisdictions and the public. Includes language requiring adoption of existing data standards.
Contract Length	Recommends a one- to two-year pilot contract with renewal options.
Vehicle Maintenance and Inspection Requirements	List of maintenance and inspection requirements to ensure system is in proper working order.
Rebalancing Requirements	Defines rebalancing for the purpose of the RFP and outlines the types of information on rebalancing a respondent should provide in their proposal.
Geographic Coverage	Proposes vehicle distribution requirements based on jurisdiction boundaries and MTC Equity Priority Communities.
Customer Service and Complaint Resolution Standards	Defines standards for customer service, including issue response time and complaint resolution.
Equity Programming	User-equity focused RFP requirements aimed at reducing barriers to use, including options for low-income and unbanked individuals and those who require the use of an adaptive vehicle.

Topic	Description
Enforcement Requirements	Defines enforcement mechanism, including recommended operator security deposit, hourly impound fee, and mechanism to suspend operations.
Program Fees	Outlines recommended vendor fee structure and pricing.
User Fees	Information on area micromobility prices and how an RFP can consider proposed pricing in the total contract value proposition
Subsidy and Revenue Sharing	Information on how operating subsidies and revenue sharing could be incorporated into the program.

EQUITY PROGRAMMING

Establishing a robust equity program as part of the shared micromobility program in San Mateo County is vital for ensuring micromobility serves all of San Mateo County's residents and visitors. Without actively investing in equity, programs can neglect to serve disadvantaged populations that may benefit the most from an affordable and flexible alternative to driving. To increase disadvantaged communities' access to and participation in micromobility systems, many systems have implemented equity programs that target the various barriers, including: physical barriers, cost barriers, payment barriers, knowledge barriers, and accessibility barriers. As such, the selected vendor should do the following.

- Provide an adaptive vehicle solution
- Propose an alternative means to paying by credit card or smart phone for unbanked populations
- Distribute a minimum percentage of vehicles be available in Equity Priority Corridors, as defined by MTC
- Propose a low-income discount program for individuals at or below 200% of the federal poverty level
- Conduct equity-focused community engagement and marketing, including, but not limited to, developing ambassador programs, rider education trainings, and partnerships with local community organizations
- Create workforce development programs.

Additional details and examples of successful equity programming and pricing is included in **Appendix F**.

PROGRAM ROLLOUT AND EXPANSION

This section discusses the impact of a jurisdiction entering or leaving the program during the duration of the pilot and how that may affect the overall pilot system. **The study team envisions that the pilot would run for one- to two years, with participating jurisdictions committing to stay within that program through the duration of the pilot**. To provide the greatest flexibility, the program manager could enter into a one year contract with a private operator that includes an additional optional year. There is flexibility for the micromobility program to expand during the initial contract period. Expansion includes introducing

micromobility into new jurisdictions and/or increasing the number of vehicles available within a pilot location. Expansion should only be considered if there is demand to warrant such expansion, and should not be undertaken if there are existing issues with operator performance. In addition, expansion may be impractical at the end of a contract period (e.g., in month 21 of a 24 month contract), as contract negotiation is a time and resource intensive process.

The pilot is an opportunity for the county to refine its micromobility management approach. At the end of the pilot period, the study team envisions the county would make recommendations for and adopt a revised program management structure that incorporates lessons learned from the pilot.

Program Rollout and Expansion

The study team envisions that San Mateo County would implement a multi-jurisdictional micromobility program initially as a pilot. The benefit of this approach is that a pilot allows the program manager and participating jurisdictions to tweak their procurement, program management, and governance structure in the face of changing real-work circumstances. The pilot could also serve as a proof of concept for any jurisdictions that are interested yet hesitant to participate. Developing the program as a pilot does raise a few questions that this section seeks to answer:

1. How can jurisdictions join the program the program once it is established?
2. How can a jurisdiction exit the program? What implications does an exit have on the viability of the rest of the system?
3. How does San Mateo County evaluate the pilot program?

Adding or Eliminating Jurisdictions from the Program

The study team envisions that **the pilot program would last a minimum of one-year, with the option to extend the agreement in 12-month intervals. All participating jurisdictions should commit to remaining within the program for the entire one-year period. At the end of the one-year period, each participating jurisdiction can choose to remain within the program or exit the partnership**. In the case that a jurisdiction leaves the program, it will be up to the remaining jurisdiction and operator to decide whether to execute a modified option year, initiate a new procurement, or halt the program.

While participating jurisdictions are expected to participate in the pilot for at least its one-year minimum duration, they do reserve the right to suspend micromobility operations if the vendor fails to meet the contract terms and conditions.

Jurisdictions are invited to join the regional program as well. Similar to the scenario of a jurisdiction departing form the program, the program manager and operator will have to come to a joint agreement on whether the existing contract can be expanded to include a new jurisdiction. An operator may balk at operating in a new community based on its relative geographic isolation from the rest of the program, overall ridership potential, and financial performance of the existing pilot.

In the case of a jurisdiction joining or leaving the program, the following factors need to be considered:

- **Fleet Size and Distribution Requirements**: Changing the geographic bounds of the system will impact the fleet size and distribution requirements. The program manager, governance committee, and operator will have to come to an agreement on updated fleet minimums, maximums, equity distribution requirements, and jurisdiction distribution requirements.
- **Local Operating Agreement:** The study team envisions that each participating jurisdiction would have a local operating agreement that identifies no-ride zones, no-parking zones, slow-zones, enforcement body with the right to impound vehicles, and local points of contact. Any new jurisdictions would need to prepare their own operating agreement with the support of the program manager. In the case of a jurisdiction leaving the program, the departure may trigger revisions to other local operating agreements (e.g., banning trips from certain routes linking to the adjoining community).
- **Cost and Revenue Sharing:** The change in the number of participating jurisdictions could impact how costs and revenue are allocated. Unless funded through an external source, participating jurisdictions would be required to cover any administrative costs or operating subsidy that remains after accounting for operator fees and revenue sharing. This could result in the cost per jurisdiction increasing as certain costs, notably administrative cost, do not grow or contract proportional to system size.

Once a pilot is established, the program manager and governance committee may not be able to accommodate any requested changes to the regulatory or management structure of the program made by additional jurisdictions looking to join. The best opportunity to revise regulations, requirements, and the program government structure are at the conclusion of the pilot. Upon mutual agreement of partners and the operator, the program could introduce new jurisdictions or expand its service area during the pilot.

Contractual Relationships Between Participants

There are a wide array of ways that a system can be organized contractually in San Mateo County. The study team finds that in other communities, the contractual model is often driven by local policy and legal concerns that emerge during the program development phase of the project. **The study team recommends that San Mateo County try to pursue as simple of a contractual model as possible to reduce contracting and legal complexity.** One solution is the following:

- The vendor contract is between the operator and the program manager
- The program manager shall be responsible to a governance body composed of all participating jurisdictions. Each jurisdiction will have an agreement with the program manager outlining their program responsibilities and how decisions are to be made within the governance committee. (see **Appendix F** for more.)
- The contract with the vendor will deputize jurisdictions with certain powers and responsibilities without requiring them to be party to the contract.

Evaluating Pilot Performance

Micromobility pilots are intended to be temporary and eventually San Mateo County will have to decide whether to transition its pilot to a more permanent program. Other communities have used their pilot program to refine their contracting and management strategies, incorporating lessons from pilot programs into future ordinances and procurements. Before concluding its pilot program, the program

manager or partner organization should **prepare a pilot evaluation** that provides guidance on the future of micromobility in the county. Elements to consider in such an evaluation include:

1. How well did the micromobility program meet initial goals and objectives?
2. How did people utilize the service? Did the program help fill a mobility need in the community?
3. What were common complaints, shortcomings, or issues with the system? How could future procurements or regulations address these issues?
4. How well did the governance structure function? Did the pilot raise any concerns around the sustainability of the governance model, especially if the program were to expand to more jurisdictions?
5. Did program administrative needs and costs differ from expectations? What additional resources would need to be identified to effectively staff a larger multi-jurisdictional system?
6. Did any issues arise from relying on a single operator in the pilot program? Is there a need to shift to a multi-operator permit program?
7. Did the pilot raise any concerns around market or operator viability? Were any regulations or requirements found to be burdensome on the operator and threaten overall program viability? Did the market produce sufficient demand for the operator or would a future program require a subsidy to sustain operations?
8. How effective was the user fee structure at attracting and retaining ridership? Should a future contract take a more, less, or similarly proactive role in setting user fees/pricing?
9. How effective was the operator fee structure? Should a future program adjust the fees, including operating fees and security deposits.
10. How should enforcement policies be adjusted?

The pilot evaluation report should establish specific recommendations around how governance, program management, cost sharing, and revenue sharing can be adjusted based on lessons learned. San Mateo County could elect to replace the pilot with a second pilot to continue to refine management policies or establish a permanent program. For example, the City of Alexandria, Virginia established a Phase II pilot in 2020 that introduced several program revisions based on lessons learned from their Phase I micromobility pilot, which operated during 2019. At the end of 2021, the city adopted a permanent micromobility program.

Risk Mitigation

Any micromobility program faces risks. While it is impossible to eliminate all risk, there are strategies to help mitigate or lesson risk exposure for the program manager, participating jurisdictions, and the public. Some of the most common types of risk the program manager and participating jurisdictions are exposed to are:

- Liability risk, which is addressed through insurance requirements that indemnify participating jurisdictions, their staff, and elected officials from legal liability.
- Operator exit, or the abrupt departure of a private operator from the market. Strategies to mitigate operate exit include conducting due diligence in the RFP process, charging damages or fines to operators for exiting before a contract ends, and contracting with multiple operators.
- Funding risk, including the loss of funding to support program administrative and (if applicable) subsidies. Strategies to mitigate this risk include minimizing reliance on annual fund appropriations, diversifying the program's funding sources, minimizing program costs, and establishing a program endowment.

Additional details on mitigating the risk of developing and administering a micromobility program are included in **Appendix F.**

PROGRAM GUIDELINES: CONCLUSION

The study team envisions that the pilot will be established through a competitive procurement process that will select one vendor to own and operate a micromobility program for a one to two years term, with additional optional years. The benefit of an RFP is that participating jurisdictions can evaluate bids from several vendors and select one that represents the best value proposition for the county. At the conclusion of the pilot, the study team envisions that San Mateo County will incorporate lessons learned from the pilot into a more permanent program.

The RFP would also be the vehicle to establish operating requirements. The recommended program guidelines represent a minimum scope of services that any RFP respondent would be required to meet. While the final operating requirements will be determined by the program's governance committee, San Mateo County is fortunate to have a wide established body of practice to borrow from. Jurisdictions across the country, including Bay Area neighbors and even San Mateo County communities like Redwood City, have already established program requirements. The study team sought to recommend program requirements that conform with established practice elsewhere.

Even the best designed micromobility program faces unknowns and risks, from jurisdictions departing from the program, to funding shortfalls or vendor bankruptcy. To help address these concerns, the study team has provided a range of mitigation strategies for consideration.

The final recommendation of the study team is that any future micromobility program in San Mateo County should strive for simplicity where possible in its final program requirements. Even among Bay Area jurisdictions, the length and complexity of micromobility ordinances and regulations vary widely. Even the most complex regulations do not guarantee against negative program outcomes. A successful micromobility program is a partnership between the community and operator. As such, effective program regulations should be matched with a productive relationship between the program manager and operator. To ensure such a relationship, the program should seek out operators with a positive track record of performance. The program requirements should provide the operator predictability and the opportunity to generate sufficient revenue.

CONCLUSION AND NEXT STEPS

7. Conclusion and Next Steps

While San Mateo County could elect to move forward with a structure other than the proposed, there are several less desirable governance outcomes of continuing with the current micromobility status quo:

- The inability to manage or address inter-jurisdictional micromobility issues.
- All procurement, management, and oversight responsibilities falling to individual jurisdictions, resulting in an increased and redundant workload burden on jurisdiction staff.
- Lack of coordination in planning, procurement, and negotiations between jurisdictions and vendors.
- Creation of a fragmented micromobility market where users may be restricted to making trips within a specific town or city. Users may have to switch between operators based on where they are travelling.
- Less predictability regarding user pricing and riding rules.
- No established regulatory or procurement standards from which jurisdictions can build their micromobility program. Individual jurisdictions may struggle to attract the same number and quality of vendors as a multi-jurisdictional program could.

The project team believes, based upon the outcomes of this plan, the proposed shared micromobility program will benefit the residents, visitors, and employees of San Mateo County and can meet the vision and goals of the program.

NEXT STEPS

Immediate next steps for program implementation include the following:

- Identify Program Manager: determine which organization has the interest, capacity, and capabilities of managing the regional micromobility program.
- Define pilot program geography and establish the Governance Committee: select one (or more) locations to pilot the program and take the steps needed to formally establish the governance committee with the program manager, representatives from the pilot jurisdiction(s), and other key stakeholders.
- Establish Governance Committee bylaws, Intergovernmental agreements (IGAs), and management processes: formalize the governance committee by developing bylaws, establishing IGA's, and laying out the management process.
- Identify seed funding for program: coordinate with local organizations, potential sponsors, and participating jurisdictions to identify and secure funding for the pilot program.
- Finalize program requirements and procure vendor: develop program guidelines, draft an RFP, and procure a vendor for operating the pilot program.

Table 10 below identifies the estimated timeline for the steps mentioned above.

Table 10. Governance Committee and Procurement Process Timeline

Timeline	Description
Spring 2023	Recruitment of new shared micromobility staff
	Establish governance committee
Summer 2023	Adopt committee bylaws
	Enter into a joint agreement between all participants
Summer / Fall 2023	Secure funding to launch pilot program
	Release procurement documents to select operator
Winter 2023	Execute contract with operator
2024 – 2026 (2 Year Pilot)	Launching shared micromobility services
	Meet regularly to discuss program management issues
	Provide ongoing reporting

To: Kim Wever, C/CAG

From: Libby Nachman, Alta Planning + Design

Date: April 12, 2022

Re: Appendix A Feasibility Memo

Executive Summary

The following memo incorporates multiple analyses to evaluate the feasibility of a micromobility program in San Mateo County. The feasibility factors below include qualitative analyses to better understand how a program might achieve its goals and to identify fatal flaws and/or significant barriers to implementing a shared micromobility program in San Mateo County. For each feasibility factor, we note whether the analysis leads to high, medium, or low feasibility (outcomes are explained in further detail on p. 35).

Micromobility Feasibility Factor	Feasibility Outcome
Planning and Policy Review	**High**
Demand Analysis	**High**
Barriers Analysis	**Medium**
Equity Analysis	**High**
Program Opportunity and Resource Analysis: Management Capability	**Medium**
Program Opportunity and Resource Analysis: Vendor Availability	**High**
Program Opportunity and Resource Analysis: Funding Capacity	**Medium**

Based on the frequency of **high** (4) and **medium** (3) feasibility outcomes, this memo concludes that a shared micromobility program **is feasible** in San Mateo County. These outcomes are meant to guide decision-making and are not meant to serve as specific program recommendations. Future steps of the study process will help answer open questions and provide recommendations to C/CAG on program details for a program that will be most likely to be successful in San Mateo County.

Existing Conditions

The study area for the project is San Mateo County. Founded in 1856, the County includes 455 square miles, 20 cities, 764,442 people[1], and 57.7 miles of coastline[2] (**Map 1**). The County is part of the larger Bay Area region, bordering the City of San Francisco to the north and Santa Clara County to the south. As the County covers most of the San Francisco Peninsula, it includes a variety of diverse regions, including coastline, natural areas, and built-up areas, among others. There are numerous parks and open space reserves along the north-south mountain ridge, including San Pedro Valley Park, Purisima Creek Redwoods Open Space Preserve, and the El Corte de Madera Open Space Preserve.

The County has substantial transportation features, including multiple freeways, the San Francisco International Airport, and two commuter rail systems: Bay Area Rapid Transit (BART) and Caltrain. The County also has bus service provided by the San Mateo County Transit District (SamTrans) and a notable number of existing bikeways.

Demographics

According to the most recent census data (ACS 2020 5-year estimates), the median age in San Mateo County is 39.7 years, which is about 10 percent higher than the average age in California. As the County is largely suburban in nature, the population is fairly spread out (**Map 2**). The highest concentration of residents is in Daly City, South San Francisco, San Mateo, and Redwood City. The County's proportion of residents of working age (18-64) is 69 percent. Thirty-nine percent of San Mateo County residents are non-Hispanic White, which is just above the statewide rate of 36.5 percent. The second largest racial or ethnic group is Asian (30 percent) which is about double the statewide rate (15 percent).

The County has a median household income of $122,641, and 5.5 percent of its residents live in poverty. The main centers for employment are found along the bayside, due to the presence of large corporate offices and the airport (**Map 3**). The highest concentration of jobs is found in the Menlo Park, South San Francisco and San Bruno areas. Towards the coast, the census tract including downtown Half Moon Bay also has a high concentration of jobs.

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[1] *https://www.census.gov/quickfacts/fact/table/sanmateocountycalifornia/POP010220#POP010220*
[2] *https://www.smcgov.org/fast-facts*
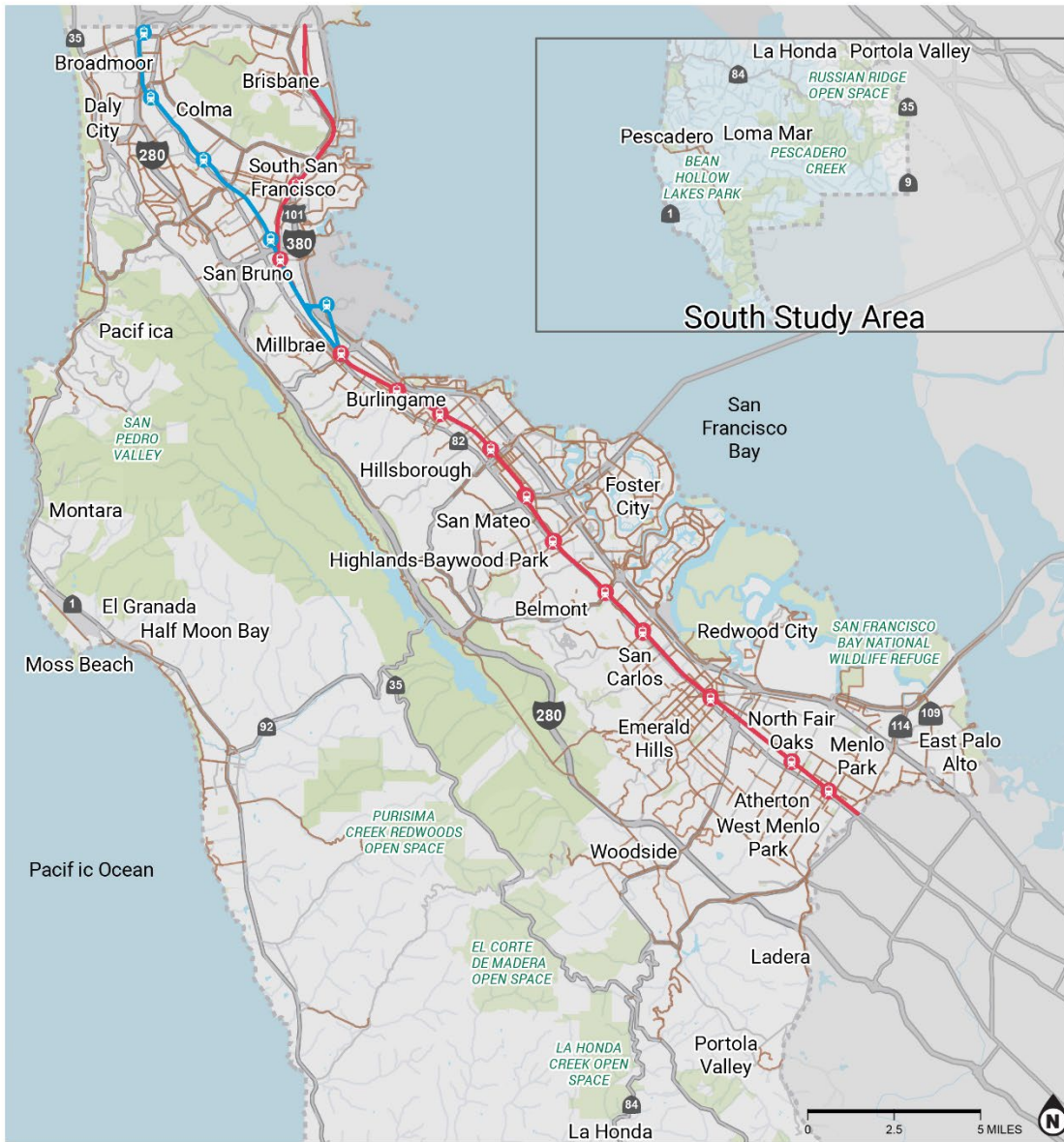
STUDY AREA

SAN MATEO COUNTY
SHARED MICROMOBILITY
FEASIBILITY STUDY

TRANSPORTATION FEATURES

— Existing Bikeway
🅑 BART Station
— BART
🅡 Caltrain Station
— Caltrain
— Road
— Freeway

DESTINATIONS + BOUNDARIES

Park
Water
County Boundary

MAP 1

Data provided by the C/CAG Comprehensive Bicycle and Pedestrian Plan (2021), Caltrans State Highway Network (2021), San Mateo County GIS Open Data (2021), and OpenStreetMap (2021).

POPULATION

SAN MATEO COUNTY
SHARED MICROMOBILITY
FEASIBILITY STUDY

POPULATION DENSITY (PEOPLE/ACRE)

- >50
- 31 - 50
- 16 - 30
- 11 - 15
- <10

DESTINATIONS + BOUNDARIES

- Water
- County Boundary

MAP 2

Data provided by the C/CAG Comprehensive Bicycle and Pedestrian Plan (2021), Caltrans State Highway Network (2021), and the US Environmental Protection Agency Smart Location Database (2021).

EMPLOYMENT

SAN MATEO COUNTY
SHARED MICROMOBILITY
FEASIBILITY STUDY

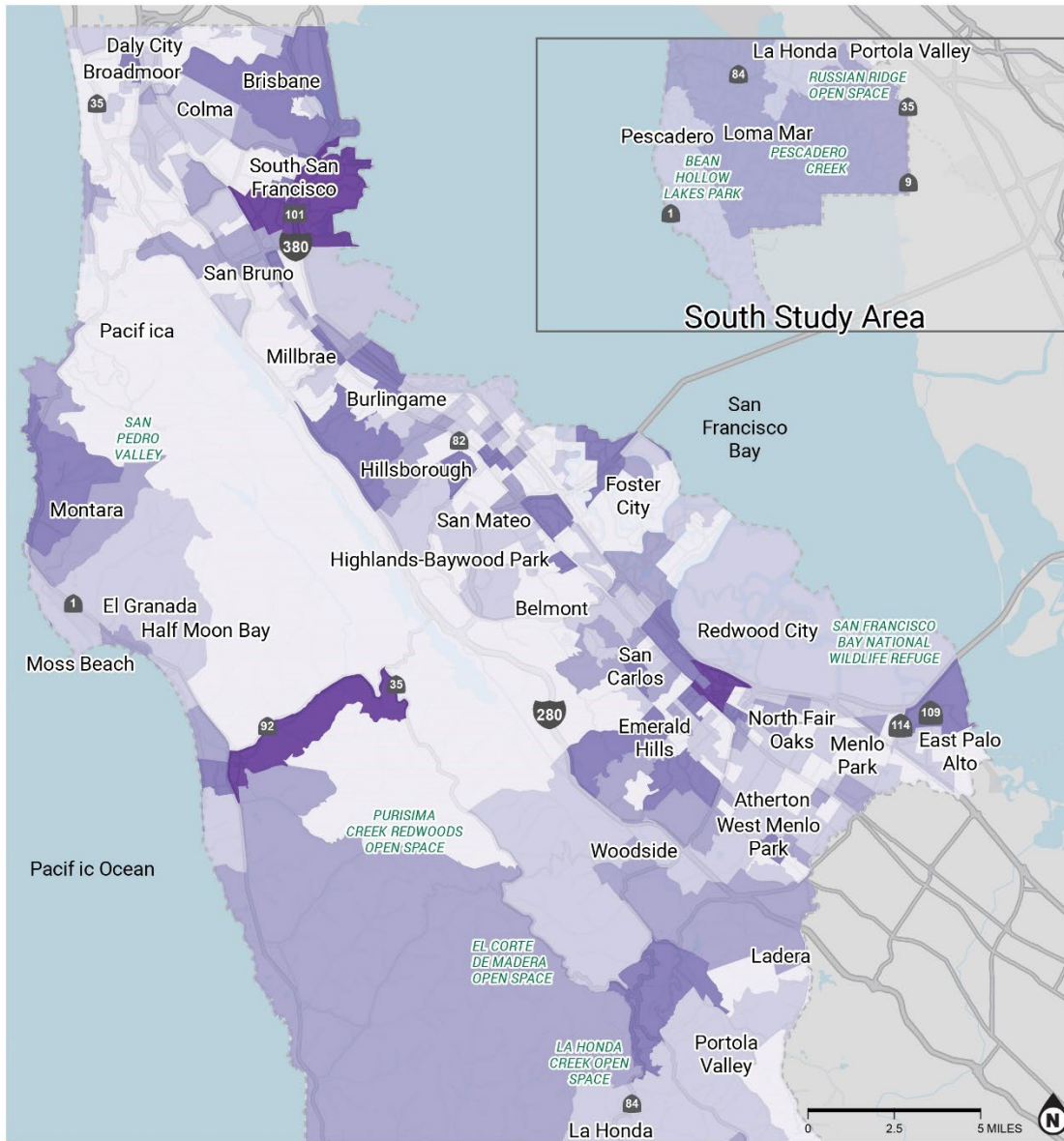**JOB DENSITY (JOBS/ACRE)**

- >35
- 21 - 35
- 16 - 20
- 11 - 15
- <10

DESTINATIONS + BOUNDARIES

- Park
- Water
- County Boundary

MAP 3

Data provided by the C/CAG Comprehensive Bicycle and Pedestrian Plan (2021), Caltrans State Highway Network (2021), US Environmental Protection Agency Smart Location Database (2021), Longitudinal Household-Employer Dynamics (2019), and OpenStreetMap (2021).

Planning and Policy Context

There are a number of planning and policy documents that may impact the implementation and operation of a micromobility program in San Mateo County. Plans and policies can be important measures of program compatibility with local initiatives, such as goals for encouraging healthy and active transportation, reduced greenhouse gas emissions, or providing low-cost transportation options among transit-dependent populations.

Transportation-related state, regional, countywide and local plans—such as transportation elements of general plans and bicycle and pedestrian plans—were reviewed (**Appendix A**). Most reviewed plans include similar goals, objectives and policies. These key goals and other plan elements include recommended projects that have a countywide impact, recommendations and considerations for a shared micromobility system or program, and other topics that relate to shared micromobility such as access to transit, equity considerations, safety, and enhanced mobility options. The most common topics include:

- **Safety**: Reduce bicycle and pedestrian-involved collisions.
- **Access to transit**: Improve bicycle and pedestrian access to transit.
- **Connectivity**: Create a connected network of bicycle and pedestrian facilities that is comfortable for all ages and abilities.
- **Equity**: Ensure everyone, especially historically underserved communities, benefit from active transportation investments and are included in the process.
- **Regional Coordination**: Coordinate with regional agencies to plan and implement the active transportation network.
- **Education & Encouragement**: Create and enhance the culture of active transportation through education and encouragement programs.
- **Support Facilities**: Promote biking and walking by providing supportive facilities such as wayfinding, bicycle parking, etc.

Many of the reviewed plans support shared micromobility either as a goal, objective, policy, or recommendation. All of the regional and County plans, with the exception of the *Caltrans District 4 Bicycle Plan*, explicitly promote or recommend shared micromobility. The *Caltrain Shared Micromobility Strategy* is a document dedicated entirely to supporting shared micromobility at all Caltrain stations and along the Caltrain corridor, which includes the entire length of San Mateo County along the Bayside. The document uses an equity lens to lay out overarching strategies, recommendations, and potential scenarios for shared micromobility. The *San Mateo County Comprehensive Bicycle and Pedestrian Plan* and the *Unincorporated San Mateo County Active Transportation Plan* both recommend developing and/or supporting a shared micromobility program across the County.

While the County and regional plans recommend shared micromobility, recommendations among local municipalities in San Mateo County is more mixed, as shown in *Table 1* below. Over half—12 out of 20—of local municipalities mention support for shared micromobility in their local planning documents. Two of the three municipalities on the coastside of the County—Half Moon Bay and Pacifica—and over half (59%) of the bayside municipalities support a shared micromobility program. In addition to support through planning documents, the City of San Mateo currently has a shared micromobility permit, Redwood City recently approved a shared micromobility ordinance, and Burlingame is currently considering a citywide shared micromobility program.

The San Mateo County Shared Micromobility Feasibility Study can help to address many of the common topics related to shared micromobility outlined in the reviewed planning documents. Among the supportive municipalities, some of the common topics related to micromobility across the planning documents include:

- Increasing access to transit and providing a seamless transfer experience between shared micromobility and transit
- Providing dedicated parking facilities for shared micromobility
- Enhancing bicycle facilities that support micromobility

- Identifying suitable locations for shared micromobility stations and geographic areas where a program should operate
- Coordinating with local and regional agencies and organizations
- Establishing a regulatory framework

Table 1: Recommendation for shared micromobility in existing planning documents among local municipalities in San Mateo County

Local Municipalities	Recommendation for Shared Micromobility in Local Plans
Atherton	
Belmont	X
Brisbane	
Burlingame	X
Colma	X
Daly City	
East Palo	X
Foster City	
Half Moon Bay	X
Hillsborough	
Menlo Park	X
Millbrae	X
Pacifica	X
Portola Valley	
Redwood City	X
San Bruno	
San Carlos	X
San Mateo	X
South San Francisco	X
Woodside	

Appendix A includes the full list of documents reviewed and their relevance to shared micromobility in San Mateo County.

Goals and Objectives

Several goals and objectives were identified for the shared micromobility system through coordination with C/CAG and the Ad Hoc Advisory Group (Table 2). These goals and objectives are used to understand the feasibility of shared micromobility in San Mateo County, because success of the system is incumbent on achieving the stated goals and objectives.

Table 2. Proposed Program Goals and Objectives.

Goal	Objectives
Replace Motor Vehicle Trips A micromobility program can help address climate change and reduce greenhouse gas emissions by providing a cleaner alternative transportation mode compared to single occupancy vehicles.	• Implement a program that connects to existing or planned active transportation facilities. • Ensure that the program pricing structure and coverage area is competitive with other transportation modes. • Relieve congestion by promoting a mode shift for short trips (1-2 miles). • Provide easy access to micromobility for people who may be interested in riding but do not have access to a bicycle. • Implement a program that connects to transit so the program can serve as a replacement for motor vehicles for longer distance trips.
Integrate with Transit Micromobility programs should support public transit by providing locations near bus and rail stations where riders can expect to find bike share stations or devices with a degree of reliability and predictability.	• Increase connectivity to and from regional transit including BART, WETA Ferry, Caltrain, SamTrans, and Commute.org shuttles. • Improve the viability of transit by providing access to shared bicycles as a first and last-mile option for transit riders. • Develop shared payment options for seamless transactions between bike share and transit trips.
Ensure the Program Benefits Everyone Micromobility programs should serve residents of all socioeconomic, disabilities, ages, racial, and ethnic backgrounds.	• Develop a robust equity program that ensures residents from all backgrounds can easily access the system without any financial, accessibility, technological, or language barriers to entry. • Create a system that is affordable across income levels. • Improve transportation access to jobs, schools, and recreation. • Ensure the program improves access to underserved communities by focusing on geographic and economic equity.

Enhance Mobility Options for Local Residents

Micromobility programs can provide a reliable mobility option for residents and commuters by serving as a first- and last-mile alternative.

- Provide increased mobility between origins and destinations in San Mateo County by providing access to jobs, employment centers, and other community destinations.
- Partner with large employers to provide their employees convenient access to the program.
- Ensure that devices are always available near transit and employment centers at peak hours.

Create a Cost-Effective and Sustainable Program

Micromobility programs should be cost-effective regarding both capital and operations costs. The success of the system will allow the program to be sustainable in the long-term.

- Develop a successful program that will attract attention and interest from businesses interested in sponsoring the program.
- Procure vendor/s that have successfully deployed several programs in diverse geographic, economic, and political regions.
- Procure a vendor/s that has proven success in operating the program in a cost effective manner
- Strategically phase the program and deploy devices in high demand destinations that can serve large number of riders before expanding to include other locations.
- Ensure allocation of public funds and securing grant funding that is dedicated to supporting equitable access to the program.

Support Economic Development

Micromobility programs should support economic development through improving convenience and the user experience in accessing downtowns, business districts, and recreational destinations.

- Ensure that the micromobility program focuses on connecting destinations, neighborhoods, downtowns, and business districts.
- Promote bike share as an amenity that can help downtowns and communities increase visitorship/tourism

Generate Positive Public Perception about the Program

Positive public perception is important for the overall success of a micromobility program. Over time, widespread usage of a micromobility program will generate positive public perception through usage and minimize negative feedback about the system.

- Ensure that the micromobility program is sensitive to the local community context by forming new and maintaining existing relationships with the surrounding local community.
- Promote the program by highlighting increased transportation access and the safety, recreational, and health benefits of micromobility trips.

- Ensure users understand safe ridership practices such as parking in designated locations, maintaining access to and not riding on sidewalks, crossing perpendicular to train tracks, etc.
- Ensure the program is a reflection of the community's interests in the program and responsive to the community's feedback as the program is implemented.

Support Tourism Opportunities

Micromobility programs should support tourism through improving convenience and the user experience in accessing visitor destinations (such as the beach, hotels, and restaurants).

- Ensure that the program is easy to use for first time riders.
- Provide a connected program by strategically placing devices in high demand visitor destinations.
- Partner with visitor destinations including hotels and restaurants to offer their customers a reliable and convenient way to get to and from their establishments.

Demand Analysis

In order to properly understand potential micromobility demand throughout San Mateo County, demographic information, commercial information, transportation information and key points of interest were agglomerated to create composite heat maps (**Map 4, Map 5**). In many communities, the local context must be considered as well.

The demand estimates were based on a regression analysis using a North American bike share dataset. The regression model finds that job density, tourism destinations, transit proximity, high-density neighborhoods, the decreased prevalence of individualized car use, and other variables are significant determinants of demand. Additionally, the analysis built on literature[3] regarding the differing demand for both docked and non-docked systems. Tourist attractions and shopping, for example, have a larger impact on demand for a non-docked system. The relative demand scores in this analysis are a result of the following inputs:

- Where people live (Population Density)
- Where people work (Employment Density)
- Where people shop (Shops)
- Where people attend higher education (Student Density)
- Where people can ride transit (Availability of Transit)
- Where people visit (Tourist Destinations and Accommodation Services such as Hotels and Motels)

It should be noted that the existence of demand does not always guarantee micromobility utilization, however it can help provide insight as to where a micromobility system will operate best. Finally, these maps are based on existing conditions, and show current, not forecasted, demand.

As shown on the maps, black and dark purple areas indicate places in San Mateo County with the highest relative demand. Pink, orange and yellow areas indicate some demand for shared micromobility, however, the demand here is lower in comparison to other parts of the County. Areas with no color indicate places that did not have high enough scores in any of the demand input criteria. This analysis serves as a helpful tool in determining the most optimal locations for shared micromobility service in San Mateo County.

Results

Several large connected pockets and corridors of high demand areas emerged from the analysis. Micromobility systems work best where demand is continuous across space. The following connected areas feature high demand compared to other areas within the County:

- **Downtown Areas:** With the prevalence of high densities in regards to population, jobs, commercial and non-commercial shops, downtown areas operate as a core center for micromobility service areas.
- **Areas in Relatively Close Distance to BART and Caltrain Stations:** As micromobility systems benefit from the presence of a more robust transit network, areas within San Mateo County which had either a Caltrain or BART station projected higher demand. This includes smaller communities, such as Brisbane.

While the majority of high demand areas was found in the populous bayside of San Mateo County, there are other areas of note which should be included in the discussion. These are:

- **Coastal Destination Communities:** With the prevalence of downtown areas and destinations, coastal communities also showed up as having high demand, although lower demand overall within their communities. This points to the possibility of having relatively contained docked and non-docked systems.

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[3] *Modeling the Demand for Shared E-Scooter Services (10/21/2021, TRB). https://journals.sagepub.com/doi/10.1177/03611981211051620*

Demand for Docked and Non-Docked Systems

While there is demand to support both docked and non-docked systems in San Mateo County, there are some differences between the demand for the different system types. Docked systems have higher concentrations of areas of high demand in downtown and high-density areas. Non-docked systems show less concentrated demand but cover more area than docked systems. This indicates that while non-docked systems can potentially serve broader areas, docked systems have the advantage in high-density and downtown areas. Each system offers different benefits that should be taken into consideration when deciding what system to implement where.

DOCKED PROJECTED DEMAND MAP

SAN MATEO COUNTY
SHARED MICROMOBILITY
FEASIBILITY STUDY

PROJECTED DEMAND
- More Demand
- Less Demand

DESTINATIONS + BOUNDARIES
- Park
- Water
- County Boundary

MAP 4

Data provided by the C/CAG Comprehensive Bicycle and Pedestrian Plan (2021), Caltrans State Highway Network (2021), American Community Survey 5 Year Estimates (2019), US Environmental Protection Agency Smart Location Database (2021), Longitudinal Household-Employer Dynamics (2019), and OpenStreetMap (2021), and Bureau of Transportation Statistics Docked Bikeshare Ridership (2021).

NON-DOCKED
PROJECTED
DEMAND MAP

SAN MATEO COUNTY
SHARED MICROMOBILITY
FEASIBILITY STUDY

PROJECTED DEMAND

More Demand

Less Demand

DESTINATIONS + BOUNDARIES

Park

Water

County Boundary

MAP 5

Data provided by the C/CAG Comprehensive Bicycle and Pedestrian Plan (2021), Caltrans State Highway Network (2021), American Community Survey 5 Year Estimates (2019), US Environmental Protection Agency Smart Location Database (2021), Longitudinal Household-Employer Dynamics (2019), and OpenStreetMap (2021), and Bureau of Transportation Statistics Docked Bikeshare Ridership (2021).

Barriers Analysis

When planning and assessing the areas in which micromobility systems would have the most affect, it is important to understand the barriers that users of these systems would face. These data can be used to identify locations to either avoid placing micromobility or to place micromobility in tandem with streetscape improvements that address the identified barrier. These data can also be used to inform aspects of the micromobility system, such as the type of devices to deploy (e.g. e-vehicles can better accommodate steep slopes). The following inputs were used in the barriers analysis:

- Roadway level of traffic stress (LTS) (provided by C/CAG)
- Clusters of Automobile Focused Businesses (defined in OpenStreetMap)
- Railways
- Highways
- Slope greater than 10%

Results

The results of the analysis are seen in **Map 6**. Clusters of automobile focused businesses are concentrated in downtown areas, indicating a high presence of vehicular use in these specific areas. Bayside communities have many areas without steep slope, but become steeper to the west. Roadways with high LTS scores are indicated in red, and those with moderate scores are demonstrated in orange. Most communities have high-LTS roadways, highways or railways preventing low-stress travel across long distances, but have pockets where low-stress travel may occur.

BARRIER ANALYSIS

SAN MATEO COUNTY
SHARED MICROMOBILITY
FEASIBILITY STUDY

BARRIERS
- Cluster of Automobile Focused Businesses
- Railway
- Areas of High Slope

Level of Traffic Stress Score
- Level of Traffic Stress 4
- Level of Traffic Stress 3
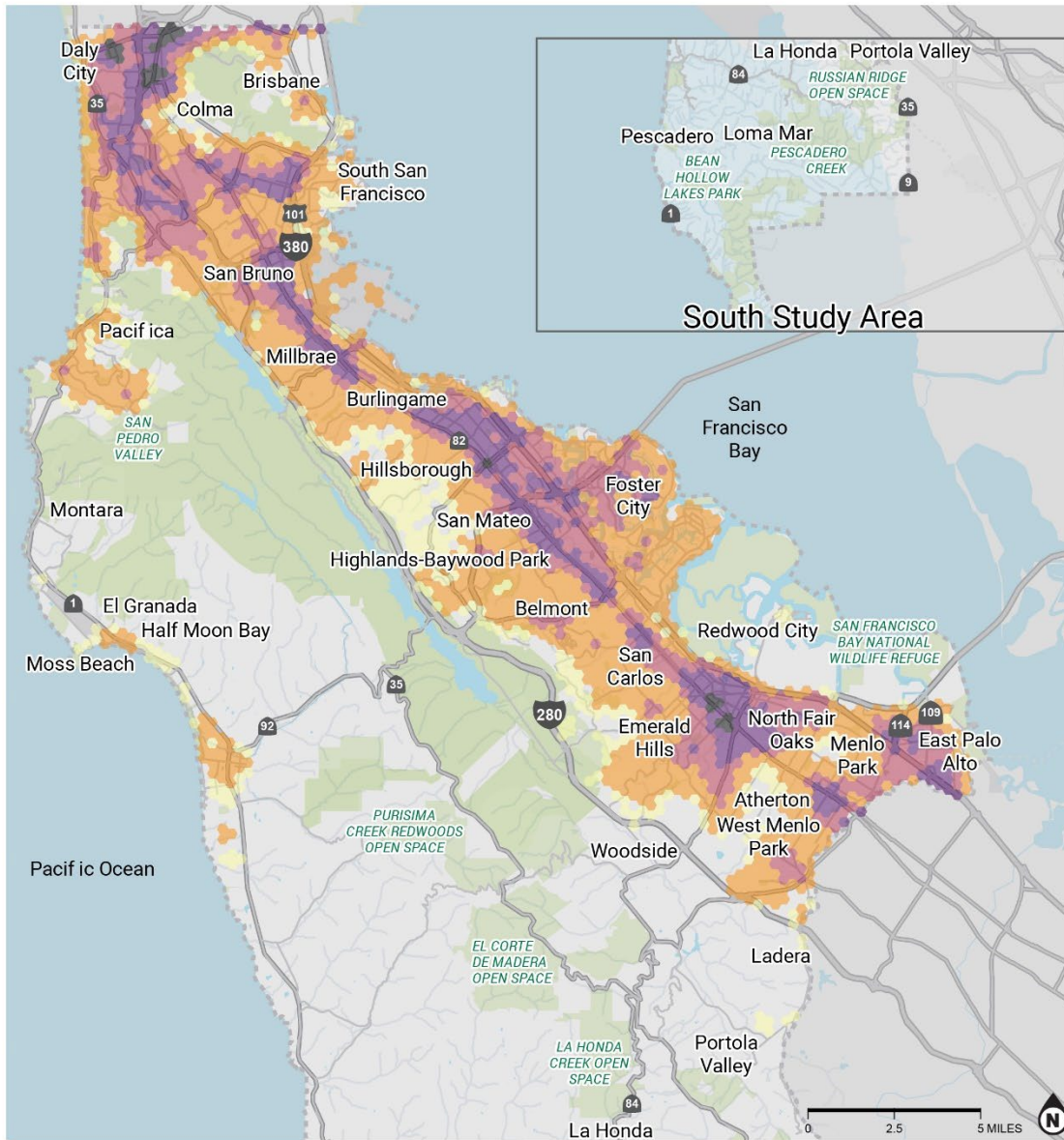
DESTINATION + BOUNDARIES
- Park
- Water
- County Boundary

MAP 6

Data provided by the C/CAG Comprehensive Bicycle and Pedestrian Plan (2021),
Caltrans State Highway Network (2021), and OpenStreetMap (2021).

Equity Analysis

In addition to demand and barriers, equity is an essential component in determining the most optimal micromobility system service area. An equitable micromobility system is accessible to underserved communities and is geographically distributed throughout neighborhoods and demographic groups. Furthermore, when planning a shared micromobility system it is important to understand where a high number of collisions have historically occurred. The equity analysis includes two parts:

- Equity Focus Areas (source: C/CAG Comprehensive Bicycle and Pedestrian Plan (CBPP))
- Collision analysis

The Equity Focus Areas were visualized if they scored above an 8 on the equity focus index, as was done in the C/CAG CBPP.

The collision analysis used collision data analyzed for the San Mateo County Safe Routes to School (SRTS) Strategic Plan, in which collisions from 2014-2020 were agglomerated to the closest roadway. While all traffic-related collisions were reviewed within San Mateo County, collisions were weighted more if they resulted in a death or severe injury, involved a person walking or biking, or involved a child. There are some differences in the visualization of these data, as the relative scores were adjusted to be shown on the County scale instead of the local scale.

A collision analysis was included as part of the larger equity analysis because traffic-related collisions disproportionately impact people walking and biking, low-income residents, and people of color, among other historically marginalized populations.[4] The high-collision corridors are also useful to compare with the equity focus areas.

Results

Maps 7 and 8 show the results of the analysis. As seen in the equity map, equity focus areas are found throughout the county, indicating that high equity index scores could be helpful in determining where micromobility systems should be placed to meet equity goals. In terms of collisions, high collision areas are seen in downtown areas, indicating that when selecting where to implement a shared micromobility system in a high-density area, it is crucial to assess the relative safety of the roadway and determine what improvements may be warranted. When comparing both analyses, many high collision areas overlap with equity focus areas, indicating locations where communities could benefit the most from increased investment in bicycle infrastructure, including a possible shared micromobility system.

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[4] *https://www.saferoutespartnership.org/sites/default/files/resource_files/at-the-intersection-of-active-transportation-and-equity.pdf*
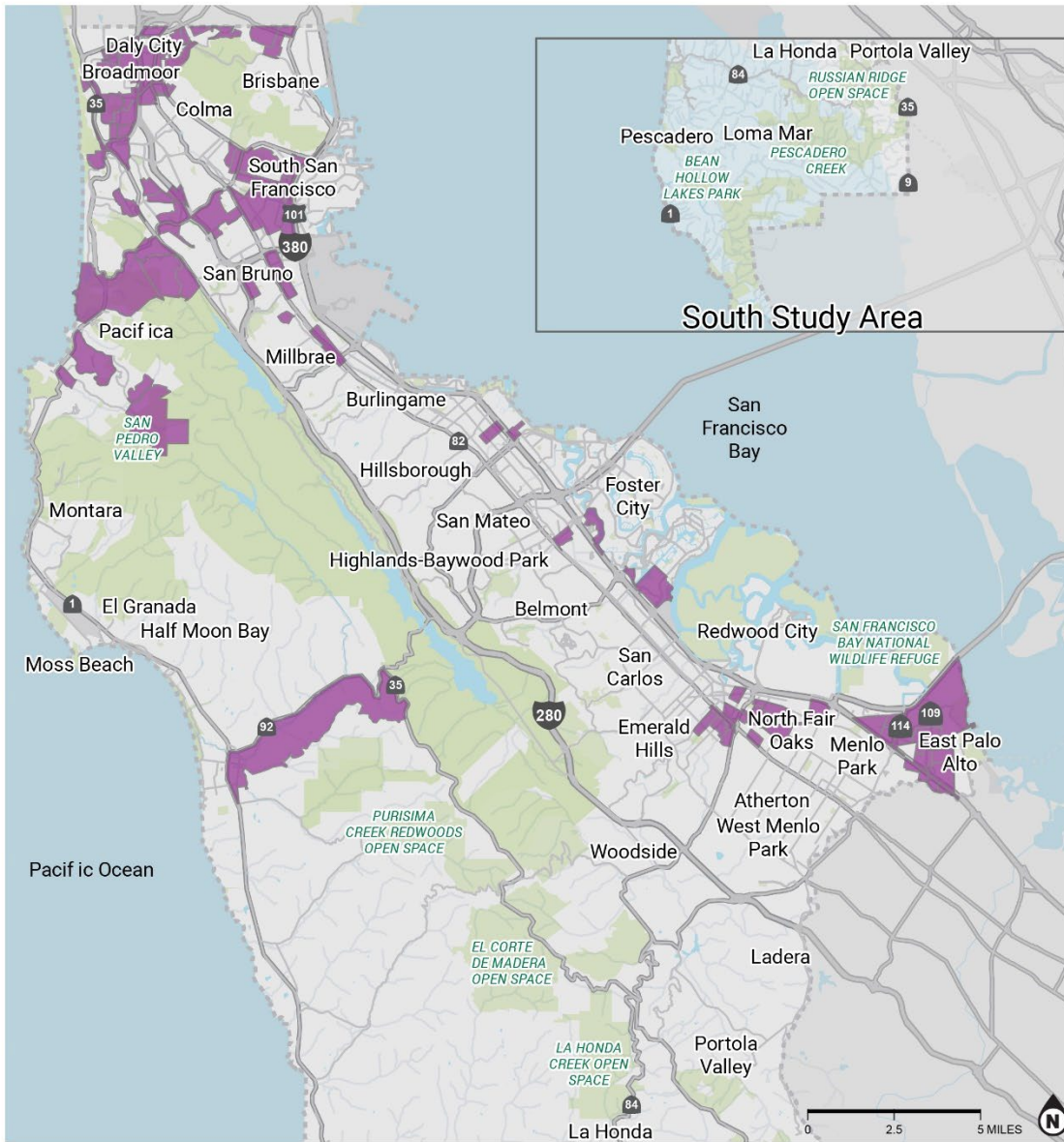
EQUITY

SAN MATEO COUNTY
SHARED MICROMOBILITY
FEASIBILITY STUDY

EQUITY FOCUS AREAS

▮ Equity Focus Areas

DESTINATIONS + BOUNDARIES

▮ Water

⬚ County Boundary

MAP 7

Data provided by the 2021 C/CAG Comprehensive Bicycle and Pedestrian Plan (2021), Caltrans State Highway Network (2021), San Mateo County Open Data (2021), and OpenStreetMap (2021).
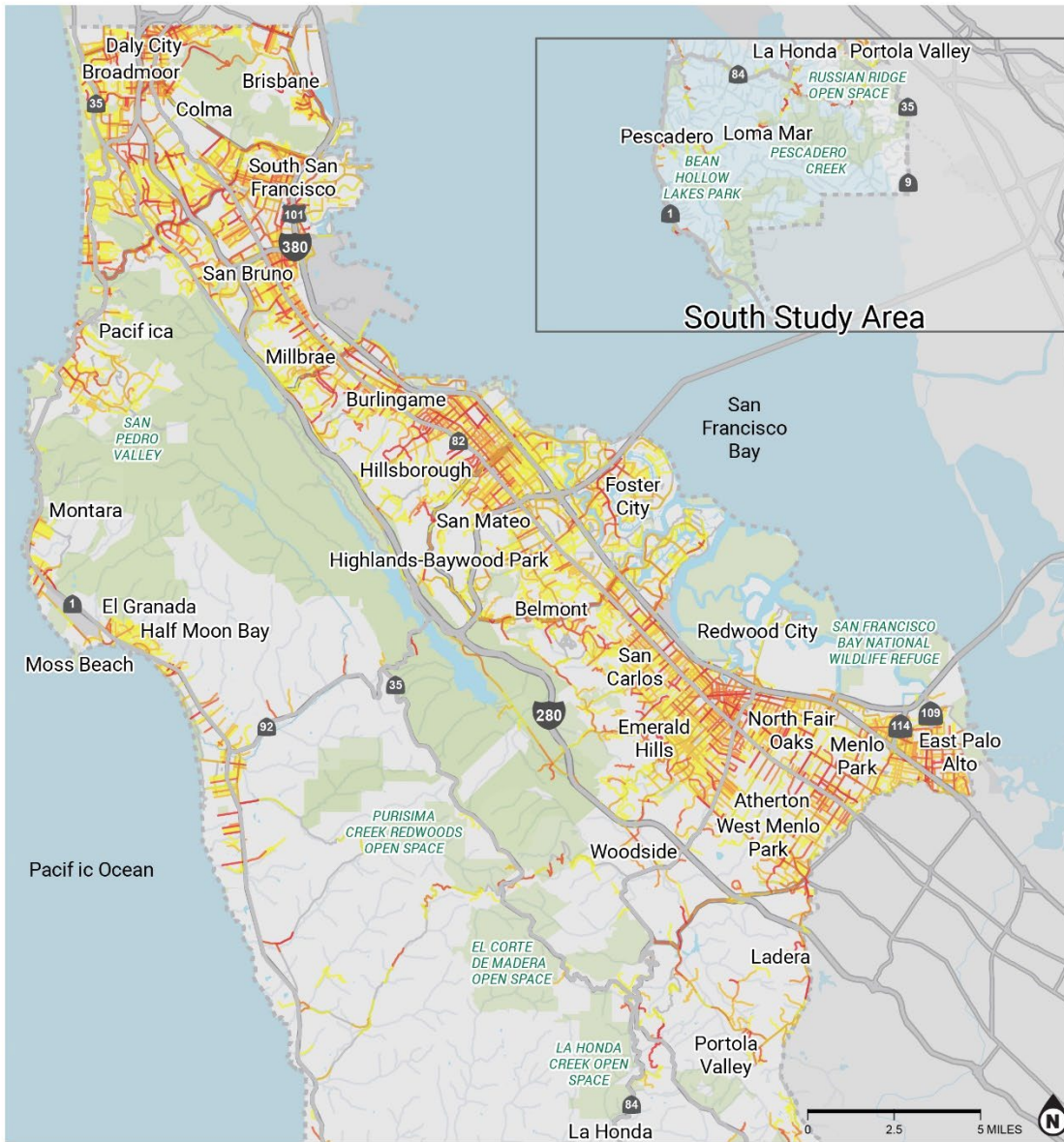
COLLISION ANALYSIS

SAN MATEO COUNTY
SHARED MICROMOBILITY
FEASIBILITY STUDY

SEVERITY WEIGHTED COLLISION INTENSITY

— High

— Low

DESTINATIONS + BOUNDARIES

Park

Water

County Boundary

MAP 8

Data provided by the C/CAG Comprehensive Bicycle and Pedestrian Plan (2021), Caltrans State Highway Network (2021), Statewide Integrated Traffic Records System (2014-2020) and OpenStreetMap (2021).

Potential User Groups

Shared micromobility systems are most successful where there is a mix of land uses, medium- to high-density of homes and jobs, and where trip-making occurs throughout the day and night as well as on weekends. While the exact user groups may vary by residential location, age, gender, race/ethnicity and car ownership[5], potential user groups that align with the identified goals for a shared micromobility program in San Mateo County are described below.

Local residents taking utilitarian trips

Local residents who live, study, work and recreate in the bike share service area seeking another mobility option to get to work or school, or go out to a restaurant are a key user group; research into bike share shows that the majority of bike share trips, across bike share programs, happen during morning and afternoon commute hour. These trips are most often taken by bike share members (users who have purchased a monthly or annual bike share pass.)[6] This transportation need can be especially critical for those who do not have access to a personal automobile; the program should identify ways to provide equitable access to the bikes in order to reach this user group.

In San Mateo County, first- and last-mile connections to transit represent an important opportunity for connecting commuters. A specific user group of interest are those who currently commute using BART, Caltrain and/or local bus service, and those who may commute using the ferry in the future.

Visitors and local residents taking recreational trips

Short-term bike share users, or non-members, may purchase either a one-time ride on bike share or a day pass. These casual users are most likely to be using bike share for leisure or sightseeing[7] and are likely visitors to San Mateo County or local residents who are not otherwise active bike share members. This group may use bike share to access parks, entertainment, hotels, and cultural attractions. These trips might include rides along the California Coastal Trail or the Bay Trail.

Non-local employees commuting and taking utilitarian trips during the day

Employees who live outside of San Mateo County and/or the designated service area but work within the County may use shared micromobility as a first- and last-mile connection to transit or to take short trips during the work day. Short trips may include going to lunch, running errands, and/or traveling to meetings or for other work-related reasons.

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[5] *Elliot Fishman (2016) Bikeshare: A Review of Recent Literature, Transport Reviews, 36:1, 92-113, DOI: 10.1080/01441647.2015.1033036*
[6] *Ibid.*
[7] *Fishman 2016.*

Program Opportunity & Resource Analysis

The following Program Opportunity and Resources Analysis discusses the major considerations for shared micromobility program resources and evaluates multiple scenarios for program structure and scale.

The analysis considers whether the following resources are aligned with the requirements of a future program in San Mateo County:

- **Management Capability:** Evaluates whether options exist in San Mateo County for system management. This can include staff capacity for contract management and administration, agency partnerships, and project leadership, among other factors.
- **Vendor Availability:** Evaluates vendor availability for a system in San Mateo County. This analysis includes a description of sample vendors who work in communities similar to San Mateo County and provide systems of similar size to the recommended program size.
- **Funding Capacity:** Evaluates funding potential for bike and scooter share in the San Mateo County area. This analysis will include a description of typical public and private sector funding sources and their appropriateness and potential level of impact in San Mateo County.

The following three scenarios are considered for the overarching program structure and scale:

- **Local Program:** Individual jurisdictions implement their own shared micromobility program. Support, guidance, and/or resources may be provided from the County/regional entity, but they are not responsible for administering the program.
- **Multijurisdictional Program:** Multiple jurisdictions agree to operate a shared micromobility program. Support, guidance, and/or resources may be provided from the County/regional entity, but they are not responsible for administering the program.
- **Countywide/Regionwide Program:** A countywide or regional agency administers/operates a shared micromobility program.

Management Capability

Shared micromobility programs in the United States are managed differently depending on the local political and funding environment as well as stakeholder interest and capacity. An organization that is ready to champion the program and move it forward to implementation is key to all successful programs.

In general terms, the tasks involved in launching and managing a shared micromobility program will be different for a contracted system and a permitted system (Table 3). In a contracted system, an agency establishes a shared agreement with a vendor(s) to operate and may take on a bigger role in managing, procuring a vendor and operator, and sometimes funding the system. In a permitted system, an agency sets up a permit or license that allows vendors to operate under certain conditions usually for a set amount of time; the agency is usually not responsible for funding, managing, or operating the system.

Table 3: General tasks for launching and managing a shared micromobility program for a contracted system and a permitted system

Tasks for Launching & Managing a Program	Contracted System	Permitted System
Obtaining political, public, and other support.	X	X
Securing funding for initial capital and operating costs.	X	
Procuring an equipment vendor and system operator.	X	
Administering the contract with the operator.	X	

Tasks for Launching & Managing a Program	Contracted System	Permitted System
Managing operations of the system.	X	
Evaluating and expanding the system.	X	
Negotiating and overseeing system sponsorships or an advertising vendor.	X	
Developing program regulations.		X
Reviewing and approving vendor permit applications.		X
Collecting and utilizing permit fees.		X
Overseeing and evaluating vendor compliance with permit regulations.		X

Potential agencies and/or organizations that can manage the shared micromobility program include C/CAG, interested San Mateo County jurisdictions, County or regional transit agencies (San Mateo County Transit District (SamTrans) or Caltrain), a non-profit organization such as Commute.org, or some combination of these organizations and more. The larger role that an agency plays in managing the system, the more control it would have in making sure the system is meeting the agency's goals. A larger role, however, results in the need for more staff capacity. The program goals and staff capacity will determine how the various jurisdictions and agencies work together.

Staff involvement, regardless of the organization that manages the program, will depend on the program details. Staff involvement, however, varies based upon the chosen shared micromobility program structure and scale as well as the program ownership model. The estimated level of staff resources required for each ownership model—with additional consideration of program structure and scale—is described in more detail below.

Shared Micromobility Ownership Models

There are four basic shared micromobility ownership models in the United States:

1. Privately owned and operated (permitted or contracted)
2. Publicly owned and privately operated
3. Publicly owned and nonprofit operated
4. Nonprofit owned and operated

Privately owned and operated (permitted or contracted)

An experienced private company brings a set of established skills and credentials when it comes to operating bike share programs. The company takes on the risk of funding and operating the program in return for generated revenues. This model is most attractive in markets that support strong returns from advertising, such as larger communities or areas with large, well-known employers. Privately owned and operated systems can either be awarded permits to operate within a community (the company pays the jurisdiction to operate) or it can be awarded a contract to operate within the community (the jurisdiction pays the company to operate.) This is largely dependent on the local market and the goals of the governing jurisdiction. This model exists for both bike and scooter share and is the current, prevailing model for scooter share systems. Examples of this type of business model include Bay Wheels in the San Francisco Bay Area (described in Table 1 below) and Lime's partnership with the City of Sacramento, which have operated since 2015 and 2019, respectively.

Summary of Staff Resources Required

This type of business model likely requires a **low to medium level of agency staff involvement**. Staff time may include:

- Significant involvement in administering and managing a permit program or a contract that enables operations;
- Varying levels of involvement in performance monitoring, depending on the number of vendors operating and/or the robustness of the permit or contract stipulations;
- Limited involvement in outreach/engagement;
- Little to no involvement in seeking sponsor or grant funds.

Private ownership and operation removes financial responsibility and risk from the agency and other local partners. Private operators are also strongly incentivized to ensure program success (e.g. high ridership and profitability) and typically have established skills and experience. This type of business model, however, is correlated to market demand and highly dependent on private sector interest. Agency control and program transparency is also limited to what is defined in regulation and permitting. Lastly, funding options may be limited to what private operator can support and equity may not be a priority for the private operator.

Case Study Example

Table 1. Case Study of a Privately Owned and Operated Shared Micromobility Program

System Name	Bay Wheels
Location(s)	Berkeley, Emeryville, Oakland, San Jose and San Francisco, CA
Owner	Lyft (Motivate)
Operator	Lyft (Motivate)
Administrator	Metropolitan Transportation Commission (MTC)
Program Structure / Scale / Size	Regionwide; 7,000 bikes
Management Capability Considerations	MTC has a dedicated Bike Share Coordinator position to administer the program. The local municipalities that have partnered with MTC also have staff support to help MTC administer the program. The City of Oakland Department of Transportation (OakDOT), for example, has a Shared Mobility team. The system is overseen by a Steering Committee with representation from MTC and the participating jurisdictions to ensure Lyft is meeting the terms of the Program Agreement and Coordination Agreement. MTC set the terms of a Program Agreement (between Lyft and MTC) and the Coordination Agreement (between Lyft, MTC, and the participating jurisdictions) which lay the framework and terms for program operation and installation.

Publicly owned and privately or non-profit operated

Ownership and financial responsibility for the system is managed by a government agency (e.g. a jurisdiction, regional, or transit agency). The agency contracts operations out to a third party (or parties), which manages equipment, sponsorship, and advertising, marketing, promotions, etc. This model exists for bike share but there are no known examples for scooter share. Examples of this type of business model include ValleyBike in Massachusetts (described in Table 2 below) and BikeTown in the Portland, OR, which have operated since 2018 and 2015, respectively.

Summary of Staff Resources Required

This type of business model likely requires a **medium to high level of agency staff involvement**. Staff time may include:

- Significant involvement in contract administration and management;
- Significant involvement in performance monitoring;
- Significant involvement in shared decision-making;
- Varying levels of involvement in outreach/engagement;
- Varying levels of involvement in soliciting sponsorships or grant funds.

With public ownership, the agency has full program control, including the brand, look, and operating standards. While public ownership requires a higher level of staff involvement, the agency can directly apply for funding, the public can hold the agency accountable to a transparent system, and the agency can ensure the program achieves its goals, such as geographic and social equity. Public ownership and more staff involvement, however, requires the agency to have interest and capacity to manage the program, take on risk and ongoing financial responsibility, and meet the public's competing priorities beyond financial and operating performance.

Case Study Example

Table 2. Case Study of a Publicly Owned and Privately or Non-Profit Operated Shared Micromobility Program

System Name	ValleyBike
Location(s)	Amherst, Chicopee, Easthampton, Holyoke, Northampton, South Hadley, Springfield and West Springfield, MA; University of Massachusetts at Amherst
Owner(s)	The Massachusetts communities of Amherst, Chicopee, Easthampton, Holyoke, Northampton, South Hadley, Springfield and West Springfield; University of Massachusetts at Amherst
Operator	Bewegen
Administrator	City of Northampton (lead administrator)
Program Structure / Scale / Size	Multijurisdictional; 1160 bikes
Management Capability Considerations	The City of Northampton is the lead administrator in charge of grants, contracts, and multi-community administration. Each individual municipality pays an administration fee to Northampton and owns the bike share equipment within their municipality and chooses station locations. A bike share committee, with representation from each municipality, meets regularly help administer the program.[8]

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[8] *https://www.northamptonma.gov/1599/ValleyBike*

Nonprofit owned and operated

An existing or newly formed nonprofit organization (NPO) takes on ownership and financial responsibility for the program. The NPO can manage any combination of responsibilities, including day-to-day system operations, and can also contract out some services, such as marketing and promotions, sponsorship and advertising, etc., to a third party or parties. This model exists for bike share but there are no known examples for scooter share. Examples of this type of business model include PikeRide in Colorado (described in Table 3 below) and BCycle in the Spartanburg, SC, which have operated since 2018 and 2011, respectively.

Summary of Staff Resources Required

This type of business model likely requires a **low to medium level of agency staff involvement**. Staff time may include:

- Moderate involvement in contract administration and management;
- Varying levels of shared decision-making, depending on contract stipulations;
- Varying levels of performance monitoring, depending on contract stipulations and/or the public agency's role as a funder;
- Limited involvement in outreach/engagement;
- Limited involvement in solicitation of sponsorships;
- Moderate involvement in soliciting grant funds.

Non-profit ownership and operation provides the most flexibility in funding, including local, state, and federal funds, sponsorships, advertising, and philanthropic contributions. The community-oriented missions of non-profit organizations (NPO) are well-received by the public, and a NPO's Board of Directors can be made up of a broad range of community stakeholders that effectively engages public, private, and community organizations in the system. If the NPO is newly formed, however, building capacity and establishing organization can take time and they may lack the skills and experience at system launch. Without adequate support and resources, NPOs may also struggle with fundraising and staff capacity, which can impact the long-term program sustainability. Lastly, the NPO's performance standards may not meet public and agency expectations for transit service.

Case Study Example

Table 3. Case Study of a Nonprofit Owned and Operated Shared Micromobility Program

System Name	PikeRide
Location(s)	Colorado Springs & Manitou Springs, CO
Owner(s)	PikeRide
Operator	PikeRide
Administrator	PikeRide
Program Structure / Scale/ Size	Multijurisdictional; 250 bikes
Management Capability Considerations	The system is owned and operated by PikeRide, a nonprofit that grew out of a program of Downtown Ventures, a charitable non-profit that administers and funds public art and benefit programs in Downtown Colorado Springs. Ten months after launching, the program spun off to create a 501c3. PikeRide applies for permits from the local jurisdiction prior to installing a bike share hub or station.

Vendor Availability

The shared micromobility market, and the available vendors, has continued to rapidly change. Changes include companies acquiring each other (Lyft acquired Motivate in 2018; Tier Mobility acquired Spin in 2022), vendors going out of business (Zagster ended all of their operations in 2020), and new vendors continue to enter the market (Razor Share launched in 2018). Many vendors are also supported by venture capital. This rapidly changing market and the reliance on venture capital can limit a vendor's dependability. It is important for the implementing agency to take this volatile market into consideration when selecting vendors.

A variety of potential shared micromobility vendors have operated or currently operate in the San Francisco Bay Area and in communities of similar size to those in San Mateo County. San Mateo County has a suburban and semi-rural character with many mid-sized and small communities along the coast and the San Francisco Bay.

The following list of micromobility vendors have worked in communities that reflect many of San Mateo County's characteristics:

- BCycle
- Bewegen
- Bird
- Bolt
- Drop Mobility
- Lime
- PBSC/Shift Transit
- Pedal Movement LLC
- Razor
- Spin (now Tier)
- Superpedestrian
- Veo

Lyft (formerly Motivate) is the exclusive vendor for the Bay Wheels bike share program operating in multiple jurisdictions across the San Francisco Bay Area, making it an attractive vendor for San Mateo County. Lyft, however, doesn't match the characteristics of an operator we would expect to see in San Mateo County for some of the following reasons:

- Lyft is typically concentrated in major urban areas;
- Historical involvement of San Mateo County in the San Francisco Bay Area regional system ended after the Bay Area Bike Share pilot program when Motivate (later acquired by Lyft) pulled out of San Mateo County and concentrated in San Francisco, San Jose, Oakland, Emeryville, and Berkeley; and
- The City and County of San Francisco is considering purchasing the Bay Wheels system from Lyft. This may affect how and where Lyft, and therefore Bay Wheels, operates in the Bay Area. Additionally, it may be difficult for jurisdictions in San Mateo County to join the Bay Wheels program under the current contract agreement.

Vendor Considerations

The following considerations should be examined when determining program size and structure:

- **One Vendor vs. Multiple Vendors:** Exclusivity can be attractive to a potential vendor as it is more likely to be profitable for the vendor. Exclusivity can also allow more agency control in achieving its goals. An exclusive vendor allows for more consistency for users, such as one platform for payments and finding micromobility vehicles. A single vendor can also aid in establishing and using a system across multiple jurisdictions. Exclusive vendor rights, however, can abruptly end a shared micromobility program if the vendor decides to opt out of the system. As described above, Lyft is the exclusive vendor for Bay Wheels.

- **Contract Program vs. Permit Program:** A contract between the vendor and the agency allows the agency more control in setting goals and performance standards. Contracts can also be more likely to require the vendor to pay or share revenue with the agency. A system that requires a vendor to obtain a permit can make it easier for the agency to charge fees to support the program. Typical permits may include vehicle requirements, operating regulations and restrictions, communications and data requirements. Contracts with too many requirements or unrealistic terms, or permits with high application fees may discourage a vendor from applying.

Funding Capacity

Funding for shared micromobility programs typically comes from user fees, sponsorship and advertising, and grants. It is not likely that the full cost of shared micromobility will be covered by a single source. All types of funding, in addition to securing local funds, should be leveraged to implement and sustain the system.

User Fees

User fees include the fees shared micromobility patrons pay for annual, monthly or daily memberships, along with any additional fees (i.e., use of a bicycle or scooter beyond the prescribed use period) and pay-per-trip options that are not classified as a membership. Higher user fees can allow the operating costs of a shared micromobility system to be covered as long as the increased costs don't suppress demand. Higher user fees, however, can result in a segment of users being priced out of the system. If a program relies on high prices, it should consider a subsidy program for low-income users. The Bay Wheels system, for example, has relatively high prices, but also has a subsidized *Bike Share for All* program that offers qualified members lower prices for membership.

Sponsorship and Advertising

Shared micromobility sponsorship typically involves a long-term relationship between the sponsor and vendor, where stickers are placed on the infrastructure (bikes, hubs, and/or websites) with a logo and/or public statement that the company supports the shared micromobility system. Experience has shown that companies are generally interested in sponsorship for its positive impression and "good corporate citizen" benefits as much for its media exposure.

Sponsorships are a critical component to raising money to launch and operate shared micromobility systems, but there is no standard structure for the allocation of sponsorship funds. For example, Boston's Hubway is able to supplement public funding with private sponsorships to pay for capital and operating expenses. New York's Citi Bike initially forwent public funds and relied solely on sponsorships to fund all system costs that were not covered by user-generated revenue. The lack of standard structure for sponsorships can provide the managing agency with flexibility depending on the program's needed revenue.

There are three main approaches to sponsorship, with additional options available:

- **Title Sponsor:** This can be a single sponsor that pays for full branding of system infrastructure (e.g., London or New York) or multiple sponsors that split the cost (e.g., Boston or Toronto). Commitment is typically a 3-5-year period.
- **Presenting Sponsor:** Sponsor(s) pays for branding of certain parts of the infrastructure e.g., Hubway (Presented by New Balance), Nice Ride (Presented by Blue Cross Blue Shield of Minnesota), Pronto Emerald City Bike Share (Presented by Alaska Airlines.) Commitment is typically a 3-5-year period.
- **Station/Hub Sponsors:** This model sells sponsorship opportunities on system infrastructure, e.g., PikeRide, the bike share program for Colorado Springs, sells logo placement on stations, station kiosks, and bikes. A station sponsorship costs $10,000. Commitment is typically a 3-year period.
- **Marketing Sponsors:** Numerous options available, such as one-time sponsors (e.g., Volkswagen paid for day passes in Chattanooga for a weekend), product partners, media sponsors, and other ideas. Commitment is typically a 1-3-year period.

In San Mateo County, there are numerous civic institutions, major employers, and other companies who may be appropriate to approach with sponsorship opportunities. Possible companies include Commute.org, Kaiser, Meta (Facebook), Genentech, College of San Mateo, San Mateo County Chamber of Commerce, etc.

Grants & Public Funding

Numerous public funding options are available for shared micromobility in the United States, but the most common are federal grants issued by agencies such as the Federal Highway Administration (FHWA), Federal Transit Administration (FTA), or Center for Disease Control (CDC), state grants, and local transportation funds. The FHWA provides a summary of public funding sources in its guide to Bike Sharing in the United States.[9] Some of those sources are listed in Table 4.

Table 4. Potential Shared Micromobility Funding Sources

Funding Opportunity	Eligible Project Types	Funding Source Detail
Surface Transportation Block Grant Program (STBGP)	Bicycle and Pedestrian improvements, among others.	With the passage of the 2016 Federal Transportation Bill, Fixing America's Surface Transportation Act (FAST Act), the former Surface Transportation Program (STP) has become the Surface Transportation Block Grant Program (STBGP), which now includes Transportation Alternatives Program funding. The State is required to allocate Transportation Alternative funds through a competitive process which allows eligible applicants an opportunity to submit projects for funding.
Rebuilding American Infrastructure with Sustainability and Equity Discretionary Grant Program (RAISE)	Bicycle and Pedestrian improvements, among others, that promote national infrastructure objectives and have a significant local or regional impact.	RAISE grants, formerly known as Better Utilizing Investments to Leverage Development (BUILD) and Transportation Investment Generating Economic Recovery (TIGER) Discretionary Grants, is a federal competitive program that awards capital funding directly to public entities.
Congestion Mitigation and Air Quality Improvement Program (CMAQ)	Funds may be used for a transportation project or program that is likely to contribute to the attainment or maintenance of a national ambient air quality standard	CMAQ funding is apportioned by the federal government to state governments, which can then fund projects either in an MPO's current transportation plan and transportation improvement program (TIP) or the current state transportation improvement program (STIP). Allocating CMAQ funds to bike/scooter share would ensure bike/scooter share is included in the TIP/STIP.

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[9] *https://www.bikesharing.ch/fileadmin/minisites/redaktion/bikesharing/Dokumente/Bikesharing_in_the_United_States.pdf*

Funding Opportunity	Eligible Project Types	Funding Source Detail
Transportation Alternatives Program (TAP)	Bicycle and pedestrian improvements only	The FAST Act combines the former TAP (which included the former Recreational Trails and the Safe Routes to School programs) into the STBGP (above). Though program requirements will stay roughly the same, total funding has been slightly increased. Most projects have an 80/20 federal/local match split, and can include sidewalks, paths, trails (including Rails-to-trails), bicycle facilities, signals, traffic calming, lighting and safety infrastructure, and ADA improvements. Unless a state opts out, it must use a specified portion of its TA funds for recreational trails projects.
National Highway Performance Program (NHPP)	Bicycle transportation associated with a National Highway System (NHS) facility	NHPP funds support goals such as improving infrastructure condition, safety, congestion reduction, system reliability, or freight movement on the NHS. Projects must be identified in the STIP/TIP and be consistent with the Long-Range Statewide Transportation Plan and the Metropolitan Transportation Plan(s). Bike share or bike facilities may be eligible for funds in association with a project on an eligible roadway in Berkshire County.
FTA Funding	Bicycle and Pedestrian infrastructure. Project must enhance or be related to public transportation facilities	Multiple FTA funding sources exist. Most FTA funding can be used to fund bike sharing stations and bicycle infrastructure "that enhance or are related to public transportation facilities" (defined as within a three-mile radius of a transit station or bus stop). However, the purchase of bikes for a bike sharing network is not an eligible expense.
State and Regional Funding		
Transportation Fund for Clean Air (TFCA)	First- and Last-Mile Connections (existing and pilot), trip reduction projects, bicycle parking, bikeways, bike share	In 1991, the California State Legislature authorized the Bay Area Air Quality Management District to impose a $4 surcharge on motor vehicles registered within the Bay Area to fund projects that reduce vehicle emissions. The Air District allocates this revenue through its Transportation Fund for Clean Air (TFCA) program to fund eligible projects and programs. The County Program Manager funds ongoing projects such as Commute.org and BART shuttles as well as local quick build projects. Projects must demonstrate cost effectiveness.

Funding Opportunity	Eligible Project Types	Funding Source Detail
Bike Share Capital Program	Grants support local government to conduct community planning, site selection, and contract with private vendors for a bike share system.	Administered by MTC and provides grants to help launch bike share in Bay Area Counties. The grants are part of the larger One Bay Area Grant (OBAG) program.
Clean Mobility Options for Disadvantaged Communities Program	Grant funding for bike share or scooter share can go towards project planning and design, outreach and marketing, capital costs, operations and maintenance, and implementation costs.	Administered by the California Air Resources Board to fund zero-emission mobility services—including bike share or scooter share—in underserved communities.
Transit and Intercity Rail Capital Program (TIRCP)	First mile/last mile projects, bicycle and pedestrian infrastructure near transit, and bike share programs.	Administered by CalSTA and Caltrans Division of Rail and Mass Transportation to fund capital projects that benefit California rail, bus, and ferry transit systems.
Transformative Climate Communities (TCC)	Bike share program, as part of a larger place-based strategy, and bicycle and pedestrian infrastructure	Administered by the Strategic Growth Council and Department of Conservation to fund community-led projects that achieve environmental benefits in underserved communities across California.

As noted earlier, local funds will likely be required to sustain the shared micromobility system. In addition to this funding sources, the following are additional strategies for securing local funds:

- **Local matches for federal grants** (e.g. CMAQ)
- **One-time or ongoing allocation from capital budgets funds** (ex: Columbus, OH committed $2.3M of local funds from the Capital budget to purchase the equipment and Boulder, CO commits $50k annually to operations of the bike share program).
- **Local steady stream sources** (e.g. parking revenues, bus bike rack advertising, special taxes, or a portion of the fees imposed for new license plates).
- **Developer transportation demand management (TDM) strategy** (ex: Cambridge, MA used part of a developer's TDM strategy to fund six new bike share stations).
- **Solicit grant funding from other public agencies**

Funding Considerations

A high amount of local investment can further ensure the longevity of the shared micromobility program. With a higher amount of local investment, money can go towards establishing an equity program that reliance on private funding may not provide. With more local funding, a program would have more flexibility in terms of program structure and scale as well as management capacity and vendor availability, and wouldn't need to rely as much on grants. Local jurisdictions, for example, could pay a fee to fund the staff who could operate/manage the program.

With minimal investment, a shared micromobility program may need to rely more on unreliable funding sources and agency partnerships. Low agency investment may also make it challenging to launch a shared micromobility program due to high start-up costs—primarily from sourcing capital equipment. Low initial agency investment may also result in more uncertainty for long-term viability before the program knows how much revenue to expect from user fees.

Matrix Summary

The following matrices provide an overview of the different shared micromobility program scenarios and how they may meet the goals of the program. The different program scenarios are qualitatively provided a score between 1 (lightest shade) and 4 (darkest shade)—1 (lightest shade) meaning the scenario is the least likely to meet the program goal and 4 (darkest shade) meaning the scenario is most likely to meet the program goal.

The program's ability to meet its goals will depend, to various degrees, upon the program structure (local program, multijurisdictional program, or countywide program) and the program's level of resources (management capacity, vendor availability, and funding capacity). As shown in the matrices below, a regional/countywide agency would be more likely to meet its program goals under a Countywide program with one or multiple vendors and significant funding. These scenarios, however, may not be feasible or as cost-effective. The following matrices are not meant to serve as program recommendations but aim to provide a structure to guide program decision-making.

Management Capacity

Goal	Local Program		Multijurisdictional Program		Countywide Program	
	High Staff Capacity	*Low Staff Capacity*	*High Staff Capacity*	*Low Staff Capacity*	*High Staff Capacity*	*Low Staff Capacity*
Replace Motor Vehicle Trips						
Integrate with Transit						
Ensure the Program Benefits Everyone						
Enhance Mobility Options for Local Residents						
Create a Cost-Effective and Self-Sustaining Program						
Support Economic Development						
Generate Positive Public Perception about the Program						
Support Tourism Opportunities						

Vendor Availability

Goal	Local Program		Multijurisdictional Program		Countywide Program	
	Single Vendor	*Multiple Vendors*	*Single Vendor*	*Multiple Vendors*	*Single Vendor*	*Multiple Vendors*
Replace Motor Vehicle Trips						
Integrate with Transit						
Ensure the Program Benefits Everyone						
Enhance Mobility Options for Local Residents						
Create a Cost-Effective and Self-Sustaining Program						
Support Economic Development						
Generate Positive Public Perception about the Program						
Support Tourism Opportunities						

Funding Capacity

Goal	Local Program		Multijurisdictional Program		Countywide Program	
	High Funding Capacity	*Low Funding Capacity*	*High Funding Capacity*	*Low Funding Capacity*	*High Funding Capacity*	*Low Funding Capacity*
Replace Motor Vehicle Trips						
Integrate with Transit						
Ensure the Program Benefits Everyone						
Enhance Mobility Options for Local Residents						
Create a Cost-Effective and Self-Sustaining Program						
Support Economic Development						
Generate Positive Public Perception about the Program						
Support Tourism Opportunities						

Feasibility Conclusions

The feasibility analysis conducted in this memo examined multiple feasibility factors that would affect a shared micromobility system in San Mateo County. For each factor, we note whether the analysis leads to high, medium, or low feasibility, open questions, and in which output of the study process these questions will be answered.

Micromobility Feasibility Factor	Feasibility Outcome	Open Questions	Study Output
Planning and Policy Review	**High**; multiple jurisdictions are interested in shared micromobility, suggesting political and public support.	What additional policy language is necessary? How will success be measured?	**Task 3.2** Vision Statement and Performance Metrics **Task 6** Program Guidelines and Regulatory Framework
Demand Analysis	**High**; the demand analysis identified multiple areas of high demand along both the bayside and coastside for multiple vehicle types.	Where should shared micromobility be located? How should it be phased? What is the appropriate scale and size of the program?	**Task 5.1** System Types and Recommendation **Task 5.2** Plan Development
Barriers Analysis	**Medium**; a number of physical barriers were identified that decrease connectivity for shared micromobility vehicles and will require mitigation.	How can identified barriers be mitigated?	**Task 4** Best Practices **Task 5.1** System Types and Recommendation **Task 5.2** Plan Development
Equity Analysis	**High**; the analysis identified areas where investment in transportation opportunities can support equity populations. The analysis also identified areas of collisions.	How can the program be structured to make it accessible to populations living in equity areas? How can identified areas of collision be addressed to increase safety?	**Task 4** Best Practices **Task 5.1** System Types and Recommendation **Task 5.2** Plan Development **Task 6** Program Guidelines and Regulatory Framework
Program Opportunity and Resource Analysis: Management Capability	**Medium**; although there is currently no agreed-upon management option, multiple options for management were identified that meet stated program goals.	What is the most appropriate management structure for the program? What are potential governance models for both program implementation and program operation?	**Task 5.3** Business Plan and Financial Analysis **Task 6** Program Guidelines and Regulatory Framework
Program Opportunity and Resource Analysis: Vendor Availability	**High**; multiple vendors were identified that would likely be interested in providing shared micromobility services in the County, including scenarios that meet stated program goals.	How should vendors be engaged to provide services?	**Task 5.4** Example RFPs for Micromobility Vendors **Task 6** Program Guidelines and Regulatory Framework

Micromobility Feasibility Factor	Feasibility Outcome	Open Questions	Study Output
Program Opportunity and Resource Analysis: Funding Capacity	**Medium**; while multiple funding options exist, it will likely be necessary to compile multiple funding sources to fund the program. Scenarios exist that meet stated program goals.	How much funding will be needed for start-up costs? How much funding will be needed for ongoing operations costs?	**Task 5.3** Business Plan and Financial Analysis **Task 6** Program Guidelines and Regulatory Framework

Based on the frequency of **high** (4) and **medium** (3) feasibility outcomes, this memo concludes that a shared micromobility program **is feasible** in San Mateo County. Future steps of the study process will help answer open questions and provide recommendations to C/CAG on program details for a program that will be most likely to be successful in San Mateo County.

To: Kim Wever, San Mateo County

From: Libby Nachman, Alta Planning + Design

Date: February 25, 2022

Re: Appendix B Plan and Policy Review

The plan review summary outlined in this document is a key component in the Shared Micromobility Feasibility Study. This memo consists of a review of existing planning documents from San Mateo County, local towns and cities in the County, and regional plans that are related to shared micromobility. The following plan and policy review seeks to highlight key goals from existing documents and policies as well as previously proposed projects and programs that may impact planning for shared micromobility in San Mateo County. The full table is attached in the Appendix.

The table shown in the Appendix is organized to highlight elements of existing plans and planning documents that are relevant to shared micromobility. The following plans are included in the review:

State

- Caltrans District 4 Bike Plan, 2018

Region

- Caltrain Shared Micromobility Strategy, 2021
- MTC Plan Bay Area 2050, 2021

County

- C/CAG San Mateo County Comprehensive Bicycle and Pedestrian Plan, 2021
- Unincorporated San Mateo County Active Transportation Plan (Office of Sustainability), 2021

Local

- City of Millbrae ATP, 2022
- Colma General Plan Update, 2021
- Colma El Camino Pedestrian & Bicycle Improvement Plan, 2021
- City of Pacifica Bicycle & Pedestrian Master Plan, 2020

- City of San Carlos Bicycle and Pedestrian Master Plan, 2020
- City of Burlingame General Plan Update, 2019
- City of Half Moon Bay Bicycle and Pedestrian Master Plan, 2019
- RWC Moves Transportation Plan, 2018
- City of East Palo Alto General Plan, 2017
- Belmont Comprehensive Pedestrian and Bicycle Plan, 2016
- City of Menlo Park General Plan, 2016
- Atherton Bicycle and Pedestrian Master Plan, 2014
- City of Daly City 2030 General Plan, 2013
- City of Half Moon Bay General Plan, 2013

Plan Review Summary

The reviewed plans share many similar and overlapping goals, objectives, and policies. These key goals and other plan elements include recommended projects that have a countywide impact, recommendations and considerations for a shared micromobility system or program, and other topics that relate to shared micromobility such as access to transit, equity considerations, safety, and enhanced mobility options. The most common topics include:

- Safety: Reduce bicycle and pedestrian-involved collisions.
- Access to transit: Improve bicycle and pedestrian access to transit.
- Connectivity: Create a connected network of bicycle and pedestrian facilities that is comfortable for all ages and abilities.
- Equity: Ensure everyone, especially historically underserved communities, benefit from active transportation investments and are included in the process.
- Regional Coordination: Coordinate with regional agencies to plan and implement the active transportation network.
- Education & Encouragement: Create and enhance the culture of active transportation through education and encouragement programs.
- Support Facilities: Promote biking and walking by providing supportive facilities such as wayfinding, bicycle parking, etc.

Many of the reviewed plans support shared micromobility either as a goal, objective, policy, or recommendation. All of the regional and County plans, with the exception of the *Caltrans District 4 Bicycle Plan*, explicitly promote or recommend shared micromobility. The *Caltrain Shared Micromobility Strategy* is a document dedicated entirely to supporting shared micromobility at all Caltrain stations and along the Caltrain corridor, which includes the entire length of San Mateo County along the Bayside. The document uses an equity lens to lay out overarching strategies, recommendations, and potential scenarios for shared micromobility. The *San Mateo County Comprehensive Bicycle and Pedestrian Plan* and the *Unincorporated San Mateo County Active Transportation Plan* both recommend developing and/or supporting a shared micromobility program across the County.

While the County and regional plans recommend shared micromobility, recommendations among local municipalities in San Mateo County is more mixed, as shown in *Table 1* below. Just over half—11 out of 20—of local municipalities mention support for shared micromobility in their local planning documents. Two of the three municipalities on the coastside of the County—Half Moon Bay and Pacifica—and over half (53%) of the bayside municipalities support a shared micromobility program. In addition to support through planning documents, the City of San Mateo currently has a shared micromobility permit and Redwood City recently approved a shared micromobility ordinance.

The San Mateo County Shared Micromobility Feasibility Study can help to address many of the common topics related to shared micromobility outlined in the reviewed planning documents. Among the supportive municipalities, some of the common topics related to micromobility across the planning documents include:

- increasing access to transit and providing a seamless transfer experience between shared micromobility and transit
- providing dedicated parking facilities for shared micromobility
- enhancing bicycle facilities that support micromobility
- identifying suitable locations for shared micromobility stations and geographic areas where a program should operate
- coordinating with local and regional agencies and organizations
- establishing a regulatory framework

Table 1: Recommendation for shared micromobility in existing planning documents among local municipalities in San Mateo County

Local Municipalities	Recommendation for Shared Micromobility in Local Plans
Atherton	
Belmont	X
Brisbane	
Burlingame	X
Colma	X
Daly City	
East Palo	X
Foster City	
Half Moon Bay	X
Hillsborough	

Local Municipalities	Recommendation for Shared Micromobility in Local Plans
Menlo Park	X
Millbrae	X
Pacifica	X
Portola Valley	
Redwood City	X
San Bruno	
San Carlos	X
San Mateo	X
South San Francisco	
Woodside	

Appendix

Table 2: Reviewed Planning Documents and Key Components Related to Shared Micromobility

Document Name	Relevance to Shared Micromobility
State	
Caltrans District 4 Bike Plan, 2018	• Goal: "Social Equity: Invest resources in communities that are most dependent on active transportation and transit." • Goal: "Mobility: Increase walking and bicycling in California." • San Mateo County improvements to state highways (pg. 44-46)
Region	
Caltrain Shared Micromobility Strategy, 2021	Key Outcomes for Shared Micromobility: • Alleviate sidewalk, station, and in-train conflicts by organizing device parking, alleviating on-board bike capacity, increasing wayside accommodations, and building access partnerships. • Offer customers more choices, especially for riders who prefer to bike, scoot, or use other forms of micromobility that cannot always be brought on-board the train. • Provide a seamless experience between Caltrain and shared micromobility services that is supportive of multimodal access to stations at either end of a customer's trip and minimizes the differences across providers, rules, and fares. • Develop a collaborative environment where corridor cities coordinate mobility policy, investment, and ideas. Overarching Strategies to Guide Shared Micromobility: • Strategy 1: Access and Partnerships Access policies, partnerships, and programs to facilitate safe, seamless, and affordable shared micromobility access to Caltrain stations. • Strategy 2: Micromobility Parking and Operations Shared micromobility parking design, regulation, and operational considerations for Caltrain and providers. • Strategy 3: Data Sharing and Management Accessing micromobility data and tracking performance to understand trends and better meet customer mobility needs.

Document Name	Relevance to Shared Micromobility

	• Strategy 4: Integrated Mobility Strategies to reduce user friction between Caltrain and shared micromobility systems.
	
	Shared Micromobility Scenarios:
	
	• 1. Permitted Micromobility Systems Across the Corridor
	   o Multiple cities launch their own micromobility permit programs where regulations may vary city-to-city
	
	• 2. Bay Wheels Expansion Across the Corridor
	   o MTC, Caltrain, and Lyft collaborate to expand Bay Wheels to better serve Caltrain stations
	
	• 3. Micromobility Partnership(s)
	   o Transit access partnerships with major event centers, universities, and major employers that may include incentives, marketing, infrastructure support, and targeted rebalancing
	
	Equity Framework:
	
	• 1. Enhance equity in the system and addressing historical inequities that have cause the rail service to be disproportionately underutilized by lower income riders and people of color
	
	• 2. Improve connectivity to other transit systems
	
	• 3. Proceed on a path of recovery and growth.
	
	Recommendations
	
	Access Partnerships & Programs
	
	• Recommendation 1: Engage corridor cities to ensure coordination and knowledge exchange across cities.
	
	• Recommendation 2: Identify avenues to increase the affordability of shared micromobility
	
	• Recommendation 3: Develop safety and education campaigns
	
	• Recommendation 4: Work with major employers and campuses to incentivize micromobility access to/from Caltrain stations.

Document Name	Relevance to Shared Micromobility
	• Recommendation 5: Coordinate with cities to establish safe, connected bike infrastructure to/from Caltrain stations.
	Micromobility Parking & Operations
	• Recommendation 1: Identify visible and flexible micromobility parking space at each station.
	• Recommendation 2: Partner with bike parking vendors to support shared micromobility parking needs
	• Recommendation 3: Establish digital policies that support operational safety and access objectives.
	• Recommendation 4: Establish protocols and practices for provider operations at Caltrain facilities.
	• Recommendation 5: Consider testing protocols and agreements for collaborative operations.
	• Recommendation 6: Reflect parking policy and ideal behaviors into the in-app experience
	• Recommendation 7: Partner with micromobility charging infrastructure providers
	Data Sharing & Management
	• Recommendation 1: Establish transit access metrics for shared micromobility
	• Recommendation 2: Collaborate with corridor stakeholders to align Caltrain metrics and data sharing requirements.
	• Recommendation 3: Provide Caltrain trip and survey data to providers to collaborate on shared micromobility system planning
	• Recommendation 4: Consider investing in a data platform that manages and visualizes metrics.
	Integrated Mobility
	• Recommendation 1: Build shared micromobility into station wayfinding
	• Recommendation 2: Identify opportunities to integrate multimodal payments.
MTC Plan Bay Area 2050, 2021	• Goal: Reduce Climate Emissions; Strategy: "EN9. Expand transportation demand management initiatives. Expand investments in programs like vanpools, bikeshare, carshare and parking fees to discourage solo driving."
	• Goal: Reduce Climate Emissions; Strategy: "EN7. Expand commute trip reduction programs at major employers. Set a sustainable commute target for major employers as part of an expanded Bay Area Commuter Benefits Program,

	with employers responsible for funding incentives and disincentives to shift auto commuters to any combination of telecommuting, transit, walking and/or bicycling."
	• Goal: Create Healthy & Safe Streets; Strategy: "T8. Build a Complete Streets network. Enhance streets to promote walking, biking and other micro-mobility through sidewalk improvements, car-free slow streets, and 10,000 miles of bike lanes or multi-use paths."
	• Goal: Maintain & Optimize the Existing Transportation System; Strategy: "T2. Support community-led transportation enhancements in Equity Priority Communities. Provide direct funding to historically marginalized communities for locally identified transportation needs."
	• Goal: Expand Access to Parks and Open Space; Strategy: "EN6. Modernize and expand parks, trails and recreation facilities. Invest in quality parks, trails and open spaces that provide inclusive recreation opportunities for people of all backgrounds, abilities and ages to enjoy."
County	
C/CAG San Mateo County Comprehensive Bicycle and Pedestrian Plan, 2021	• Goal: "Mode Shift: Promote more people bicycling and walking for transportation and recreation."
	• Goal: "Equity: Develop, prioritize, and fund projects to advance equity."
	• Visionary Regional Planning Priorities (pg. 73-74): Peninsula Bikeway; Dunbarton Corridor Trail; Bay to Sea Trail; Grand Boulevard Initiative; Midcoast Multimodal Parallel Trail; California Coastal Trail
	• SMC Proposed Bikeways pg. 41-57
	• "Policy 1.8: Encourage local and regional agencies, including Caltrans, Caltrain, and SamTrans to work together to provide and maintain comfortable walking and bicycling connections to regional transit stations and close first-/last-mile gaps."
	• "Policy 2.5: Explore feasibility of micromobility programs (e.g., bikeshare) to increase access and convenience of walking, bicycling, and riding transit.
	• High Priority Program: First- and Last-Mile Transit Connections: "Transit stations should provide secure, long-term bike parking for personal bicycles and designated parking areas for micromobility devices such as bikeshare and e-scooters."

Document Name	Relevance to Shared Micromobility

	• High Priority Program: Micromobility Strategy: "C/CAG should provide micromobility policy and implementation guidance, and develop a policy framework that local jurisdictions can easily adopt. This guidance should include actions such as:
	
	    ○ Encouraging local programs to include requirements for vehicle type, distribution, cash payment options, and accessible/adaptive vehicles to ensure that micromobility programs are equitable distributed and inclusive.
	
	    ○ Designating micromobility vehicle parking areas and increasing bicycle parking to reduce occurrences of parked vehicles blocking walkways.
	
	    ○ Encouraging communities to clearly communicate where e-scooters, and other new mobility devices can be operated to reduce conflicts and increase safety.
	
	    ○ Coordinating cross-jurisdictional policies that clearly outline authority, data standards, and small vehicle standards. C/CAG can facilitate discussions between local jurisdictions and the County to promote interjurisdictional learning opportunities on the topic. C/CAG can also develop a micromobility feasibility study to identify which jurisdictions are best suited to first- and last-mile transportation solutions like micromobility, what form it could take, and provide implementation tools for jurisdictions that are interested in the program. Examples of these tools can be standardized template policies and permit applications. The feasibility study can also identify the different options available to jurisdictions to pursue (e.g., on-demand transit, feeder services, etc.)."

Unincorporated San Mateo County Active Transportation Plan (Office of Sustainability), 2021	• Visionary Regional Planning Priorities (in addition to those identified in the SMC Bike & Ped Plan above): Crystal Springs Regional Trail; SF Bay Trail; Bay Area Ridge Trail • Goal: Flexibility: "Create a resilient and flexible transportation network that supports a variety of modes of transportation and can adapt to changes in land use, infrastructure, and transportation technologies over time, including new micro- mobility solutions." ○ Objective: "Stay current on and support new mobility options (e.g., electric-assist bicycles, scooters, and other personal mobility devices) and contribute to coordination between local and regional agencies to provide seamless, equitable travel options throughout the county."

Document Name	Relevance to Shared Micromobility
	• Recommendation: Micromobility Programs: "In unincorporated areas, station-based programs that provide bikes and e-bikes may be the best option and would need to be based in more densely developed areas to mitigate the need for major fleet rebalancing efforts"; "Communicate with C/CAG and other local jurisdictions to gauge interest in and develop micromobility programs."
Local	
City of Millbrae ATP, 2022	• "Establish micromobility guidance and regulatory framework to support emerging modes of transportation. E-scooters, e-bikes, and other shared rideable systems ("micromobility") are rapidly evolving new approaches to travel in urban areas. The City should establish guidance for regulating and managing shared micromobility services to ensure the benefits of the systems to users and define expectations of micromobility operators in the City." • "Expand active transportation connections to transit. The City should provide facilities for bicyclists and pedestrians to connect to the Millbrae Intermodal Station and bus stops along El Camino Real. Bridging the first-mile/last mile gap between these transit facilities and local destinations will support transit use."
Colma General Plan Update, 2021	• "M-8-1: Parking Standards. Reevaluate minimum parking standards to account for emerging mobility trends, such as shared mobility, micromobility, autonomous vehicles, and future technology changes. Consider reducing parking requirements for mixed-use developments."
Colma El Camino Pedestrian & Bicycle Improvement Plan, 2021	• Goal: Economic Development: "Developing solutions that encourage economic growth and equitable economic opportunities for all neighborhoods and corridor users."
City of Pacifica Bicycle & Pedestrian Master Plan, 2020	• "Micromobility: Building a network of high-quality, connected, and safe bicycle facilities also benefits people on smallwheeled devices such as mobility scooters, skateboards, electric and non-electric scooters, roller skates, and tricycles. A bike network will help foster a more organized and predictable riding environment for all roadway users. Furthermore, implementing wider bicycle lanes, where feasible, provides space for users to safely and comfortably pass slower users (i.e. a bicyclist passing a skateboarder)." • "There are currently no formalized shared-mobility services, bikeshare, scooter-share, etc., within Pacifica. Should Pacifica be interested in developing a shared-mobility system, a separate study should be conducted to analyze potential users, trips, locations for dedicated stations and parking, funding/branding, and other items."

Document Name	Relevance to Shared Micromobility
City of San Carlos Bicycle and Pedestrian Master Plan, 2020	• "Policy 2.A.2: Explore opportunities for implementing a bicycle and/or scooter share program within San Carlos. Using lessons learned from other jurisdictions, develop policies to ensure safe use and accountability." Recommended Shared Micromobility Program/Policy: "The City of San Carlos would likely benefit from a responsibly deployed micromobility fleet. The City should work with one or more vendors to develop a pilot program that would allow a limited fleet of bikes and/or e-scooters within a defined geographic region for a fixed period (typically one-year or less). The pilot program would allow the city to examine and refine system characteristics including: • Licensing and Permits: Cities have largely shifted away from procurement and exclusive contracts for establishing bike and scooter share. Licensing or permitting programs are used as a way to manage micromobility providers, including establishing the rules, responsibilities, and conduct of operators. Establishing a process for the fair and thorough vetting of vendors is an important first step in regulating for or partnering to address the topics below. • Vendor Fees: Cities issuing micromobility permits have the ability to set application fees, annual renewal fees, and per unit fees to establish funding for the City's oversight of the program and/or infrastructure upgrades. • Fleet Size: Fleet size requirements allow cities to cap the number of micromobility units deployed, or develop variable fleet size policies that require vendors to remove or add units to achieve the desired average number of rides per unit per day. • Parking Policies: Cities can build dockless mobility parking requirements into micromobility permits and contracts. These requirements can include mandatory response times to customer complaints on improperly parked units and penalty fees for failure to comply. • Trail and Sidewalk Requirements: Cities that allow dockless mobility providers to operate have a diversity of policies on the legality of riding e-scooters and e-bikes on sidewalks and multiuse paths or trails. Prohibiting the use of electric micromobility devices on facilities shared with pedestrians is recommended to ensure safe and comfortable walking conditions. • Investments in Bike Infrastructure: A micromobility pilot program should also consider whether safe and comfortable bike infrastructure is available for micromobility riders to use. • Geographic Areas of Operation: Cities can control where micromobility units are concentrated through two primary methods: system rebalancing requirements and geofenced operation boundaries.

Document Name	Relevance to Shared Micromobility
	o System rebalancing requirements allow cities to identify key locations or areas where units should be located after recharging. o Geofenced operation boundaries allow cities to define zones where dockless mobility units should not be ridden. These boundaries are most often enforced by in-app warnings, accompanied by user penalty fees for riding outside of an approved area." • "During the pilot phase data collection, including trip origins and destinations, routes, vehicle use, crash reports and complaints are collected and analyzed, in addition to structured community feedback. Pilot programs allow cities to remain flexible and provide an opportunity to adjust permit terms, consider proposals from different service providers, and incorporate community input into program planning before issuing a long-term permit program."

City of San Mateo Bicycle Master Plan, 2020	• Existing Shared Mobility Permit Program: "Equity-focused shared mobility policy: The City requires Shared Mobility Permit holders to include equity programs in their applications and programs."
	
	• Goal 1: Connectivity; Objective: "Ensure that plentiful, high-quality support facilities (e.g., bicycle parking) that complement the bicycle and micromobility network are installed at key community and transit destinations as well as commercial and residential developments.
	
	• Goal 2: Safety & Comfort; Objective: Provide safe, direct bicycle and micromobility connections across barriers, including: intersections, freeways, and the Caltrain tracks.
	
	• Goal 3: Community: Foster a bicycle- and micromobility-friendly community outlook
	
	    o Objectives:
	
	    o Implement programs, initiatives, and support infrastructure that promote understanding between road users and educate all road users (i.e., pedestrians, bicyclists, users of micromobility, and drivers) about the rules of the road and how to safely travel to their destinations.
	
	    o Support community initiatives that encourage bicycling and micromobility use and help make these viable transportation options and enjoyable parts of daily life.
	
	    o Create a safe and well-connected bicycle and mobility network that fosters a community where people choose to bike or use micromobility instead of driving by default.

Document Name	Relevance to Shared Micromobility

	• Goal 4: Equity: Create a comfortable bicycle and micromobility network that connects to all neighborhoods throughout San Mateo and serves people of all ages, abilities, and socioeconomic statuses.
	
	    ○ Objectives:
	    ○ Implement inclusive bicycling and micromobility programs, initiatives, and outreach.
	    ○ Identify opportunities to increase access to bicycling and micromobility use among traditionally underserved communities, such as through bike light or helmet giveaways or low-income discount programs for micromobility programs.
	
	• Recommended Program: "Develop and implement a citywide bicycle and micromobility wayfinding strategy."
	
	• "Support micromobility: Explore opportunities for shared mobility services in San Mateo to reduce the reliance on driving for short trips. Develop a plan to support micromobility users with dedicated space, such as protected bike lanes, and dedicated parking areas onstreet or in pedestrian amenity zones for e scooters and other micromobility devices."

City of Burlingame General Plan Update, 2019	• "M-3.10: Bicycle Sharing: Implement a bicycle sharing program to provide an alternative to driving, enhance bicycle accessibility, and offer a last-mile option to transit. [SO, PA, S]"
City of Half Moon Bay Bicycle and Pedestrian Master Plan, 2019	• Recommendation: Bike Share "Several Bay Area cities currently use the Ford Go Bike system, a docking system that uses Clipper cards to unlock a bike. Clipper cards are already used on SamTrans buses and other regional transit systems."
RWC Moves Transportation Plan, 2018	• Shared Micromobility Permit in progress/Under consideration **"Guiding Principles for Emerging Transportation Services:** • Safety: Emerging transportation services must be consistent with Redwood City's goal for eliminating traffic fatalities and severe injuries for all modes by 2030. • Multimodal: Emerging transportation services must prioritize, rather than compete with, walking, biking, carpooling, and transit services. • Equitable Access: Emerging transportation services must promote equitable access to goods and services for all people, including people with disabilities, low-income, and the young and elderly.

Document Name	Relevance to Shared Micromobility
	• Efficiency: Emerging transportation services must consider person throughput and travel time reliability. • Public Health: Emerging transportation services must promote public health and help to reduce environmental impacts, including greenhouse gas (GHG) emissions and energy consumption. • Accountability: Emerging transportation service providers must share relevant data so that the City and the public can effectively evaluate impacts on the transportation system. • Collaboration: Emerging transportation service providers must collaborate effectively with the City and the community to ensure new services are planned for and regulated based on the community values."
City of East Palo Alto General Plan, 2017	• "4.7 Bikeshare: Support the expansion of the regional bike share pilot program, helping to identify appropriate locations for system expansion within East Palo Alto." • "5.5 Transit stops: Support the installation of transit stop amenities, including shelters, benches, real-time information panels, lighting, bike parking, bike sharing stations, etc."
Belmont Comprehensive Pedestrian and Bicycle Plan, 2016	• "A bike sharing station is being explored in Downtown (Belmont Village) or near the Caltrain station...The City of Belmont can potentially coordinate with neighboring peninsula cities to offer a cohesive bike share program that is long term and can offset the operating costs through a joint partnership."
City of Menlo Park General Plan, 2016	• "Policy CIRC-5.6 Bicycle Amenities and Transit. Encourage transit providers to improve bicycle amenities to enhance convenient access to transit, including bike share programs, secure storage at transit stations and on-board storage where feasible." • Goal: "GOAL CIRC-3 Increase mobility options to reduce traffic congestion, greenhouse gas emissions, and commute travel time." o Objective: "Policy CIRC-3.3 Emerging Transportation Technology. Support efforts to fund emerging technological transportation advancements, including connected and autonomous vehicles, emergency vehicle pre-emption, sharing technology, electric vehicle technology, electric bikes and scooters, and innovative transit options." • "Program CIRC-2.I Bike Sharing Program. Work with local and regional organizations to develop and implement a citywide bike sharing program."

Document Name	Relevance to Shared Micromobility
Atherton Bicycle and Pedestrian Master Plan, 2014	• A vision for a safer El Camino Real, including locations for crosswalk upgrades and the potential for a "Grand Boulevard Greenway" trail that can be implemented in phases over time • Priorities for implementing the regional bike plan, including enhancements to existing bike lanes and development of a new north/south "bike boulevard" that provides a low stress, shared bikeway into south to Menlo Park/Palo Alto and north to Redwood City" (from website)
City of Daly City 2030 General Plan, 2013	• "Task CE-13.2: Continue to the participate in the effort of the Grand Boulevard Initiative for Mission Street and, when considering the design of Mission Street pedestrian improvements, make every reasonable effort to implement the street design guidelines identified by the Grand Boulevard Multimodal Transportation Corridor Plan."
City of Half Moon Bay General Plan, 2013	• "Policy 4-12. Consult with SamTrans to provide end-of-trip facilities at high- ridership transit locations within the city. "

To: Kim Wever, C/CAG

From: Libby Nachman, Alta Planning + Design

Date: June 9, 2022

Re: **Appendix C: Vision, Goals, Objectives, and Performance Measures**

Vision Statement

A vision statement will help guide the implementation of a shared micromobility program by providing a clear and inspirational statement about the desired program outcome. The proposed vision statement was developed in coordination with C/CAG and members of the ad hoc advisory group.

Vision Statement: *A shared micromobility program in San Mateo County will provide residents and visitors—including low-income individuals, communities of color, persons with disabilities, and other historically marginalized communities—with an affordable, convenient, and sustainable transportation option that reduces vehicle miles travelled, connects communities to destinations across the County, and seamlessly integrates with transit.*

Proposed Micromobility Program Goals and Objectives

In addition to the vision, the goals and objectives are fundamental to the success of the micromobility program in San Mateo County. The goals and objectives were developed based on stated County priorities and shared micromobility system best practices and were refined based on advisory group input and further analysis of existing conditions. These goals and objectives will help guide and shape the planning of a micromobility program.

Proposed Overall Program Goals:

- Replace Motor Vehicle Trips

- Integrate with Transit

- Ensure the Program Benefits Everyone

- Enhance Mobility Options for Local Residents

- Create a Cost-Effective and Self-Sustaining Program

- Support Economic Development

- Generate Positive Public Perception about the Program

- Support Tourism Opportunities

Performance Measures

The following indicators can be used to monitor and evaluate how the system is performing in relation to the program's goals. The evaluation will help to identify where improvements may be made to support program goals and improve the system.

The indicators monitored for overall use will be tracked to establish a baseline for San Mateo County.

Proposed Overall Program Goals, Objectives, and Performance Measures

Goal	Objectives	Indicators	Data Collection
Replace Motor Vehicle Trips A micromobility program can help the County address climate change and reduce greenhouse gas emissions by providing a cleaner alternative transportation mode to single occupancy vehicles.	• Implement a program that connects to existing or planned active transportation facilities. • Ensure that the program pricing structure and coverage area is competitive with other transportation modes. • Relieve congestion by promoting a mode shift for short trips (1-2 miles). • Provide easy access to micromobility for people who may be interested in riding but do not have access to a bicycle. • Develop a bike share system near connections to transit that can serve as a replacement for motor vehicle trips for longer distance trips.	Percent of car trips replaced	Annual Survey
		*Number of Trips per vehicle per day	Provided by operator
		Trip Duration – Daily	Provided by operator
		Number of trips to/from each station – Daily/Monthly	Provided by operator
		Miles Traveled – Monthly	Provided by operator
		Total trips taken – Annual	Provided by operator
Integrate with Transit Micromobility programs should support public transit by providing locations near bus and rail stations where riders can expect to find bike share stations or devices with a degree or reliability and predictability.	• Increase connectivity to and from regional transit including BART, WETA Ferry, Caltrain, and SamTrans. • Improve the viability of transit by providing access to shared bicycles as a first and last-mile option for transit riders. • Develop shared payment options for seamless transactions between bike share and transit trips.	Trips to Transit – Number of trips in proximity to Caltrain stations, BART stations, and SamTrans stops	Provided by operator
		If technology allows: Transfers between shared micromobility and transit using Clipper cards.	Provided by operator
Ensure the Program Benefits Everyone	• Develop a robust equity program that ensures residents from all backgrounds can easily access the system without any financial, accessibility, technological, or language barriers to entry.	Trip starts/ends in equity focus area	Provided by operator
		Percentage of fleet rebalanced to equity focus areas	Provided by operator

Micromobility programs should serve residents of all socioeconomic, disabilities, ages, racial, and ethnic backgrounds.

- Create a system that is affordable across income levels.
- Improve transportation access to jobs, schools, and recreation.
- Ensure the program improves access to underserved communities by focusing on geographic and economic equity.

Ridership by age, gender, race, ethnicity, disability, and income status	Annual Survey
Number of reduced income memberships, if/when available.	Provided by operator
Number of trips per accessible vehicle per day	Provided by operator
Number of occurrences as reported by the operator for riding on sidewalk and in prohibited areas	Provided by operator
Cash Payment Locations — Monthly — A list of locations currently accepting cash payment for membership	Provided by operator
Cash Payment Members – Monthly – Weekly – Three Day – New and cumulative members	Provided by operator
Sign-Up Events — Monthly — Details of in-person sign-up events, including location, duration, number of people spoken to, number of people signed up, sign-ups by membership type	Provided by managing entity and/or operator

Enhance Mobility Options for Local Residents Micromobility programs can provide a reliable mobility option for residents and commuters by serving as a first-and last-mile alternative.	• Provide increased mobility between origins and destinations in San Mateo County by providing access to jobs, employment centers, and other community destinations. • Partner with large employers to provide their employees convenient access to the program. • Ensure that devices are always available near transit and employment centers at peak hours.	User trip purpose (recreation/for fun, utilitarian/transportation focus, weekend/weekday)	Annual Survey
		San Mateo County resident or visitor	Annual Survey
		*Members by Membership Type (e.g. Annual Members – Monthly – Weekly – Three Day) – New and cumulative members	Provided by operator
		*Station Performance – Weekly – Rentals and returns by station	Provided by operator
Create a Cost-Effective and Sustainable Program Micromobility programs should be cost-effective regarding both capital and operations costs. The success of the system will allow the program to be sustainable in the long-term.	• Develop a successful program that will attract attention and interest from businesses interested in sponsorships. • Procure vendor/s that have successfully deployed several programs in diverse geographic, economic, and political regions. • Strategically phase the program and deploy devices in high demand destinations that can serve large number of riders before expanding to include other locations. • Ensure allocation of public funds and securing grant funding that is dedicated to supporting equitable access to the program.	*Station Performance – Weekly – Rentals and returns by station	Provided by operator
		Monthly system revenue and monthly system expenses	Provided by operator
		*Number of Trips per vehicle per day	Provided by operator
		*Members by Membership Type (e.g. Annual Members – Monthly – Weekly – Three Day) – New and cumulative members	Provided by operator
		*Casual Users – Daily – New and cumulative members	Provided by operator

		Amount of staff time (from the managing entity) and costs required to oversee pilot	Provided by managing entity
Support Economic Development Micromobility programs should support economic development through improving convenience and the user experience in accessing recreational destinations (such as business districts).	• Ensure that the micromobility program focuses on connecting destinations, neighborhoods, business districts. • Promote bike share as an amenity that can help communities increase visitorship/tourism	Number of trips that start/end within a commercial area.	Provided by operator
		Number of business partnerships	Provided by operator
		Number of agreements with businesses/employers for stations on private property.	Provided by operator
		Station Performance near businesses – Weekly – Rentals and returns by station	Provided by operator
Generate Positive Public Perception about the Program Positive public perception is important for the overall success of a micromobility program. Over time, widespread usage of a micromobility program will generate positive public perception through usage and minimize negative feedback about the system.	• Ensure that the micromobility program is sensitive to the local community context by forming new and maintaining existing touch points with the surrounding local community. • Promote the program by highlighting the safety, recreational, and health benefits of micromobility trips. • Ensure the program is a reflection of the community's interests in the program and responsive to the community's feedback as the program as it's implemented.	Value of service to community	Annual Survey
		Perceived safety of system	Annual Survey
		User satisfaction with service	Annual Survey
		Public feedback on system – Number of emails and calls received	Provided by managing entity or operator
Support Tourism Opportunities	• Ensure that the program is easy to use for first time riders.	Trip volumes along corridors with tourist destinations	Provided by operator

Micromobility programs should support tourism through improving convenience and the user experience in accessing visitor destinations (such as the beach, hotels, and restaurants).	• Provide a connected program by strategically placing devices in high demand visitor destinations. • Partner with visitor destinations including hotels and restaurants to offer their customers a reliable and convenient way to get to and from their establishments.	*Casual Users – Daily – New and cumulative members	Provided by operator
		Number of stations at tourist destinations and/or number of station agreements with tourist-related businesses	Provided by operator
		Station Performance near visitor destinations – Weekly – Rentals and returns by station	Provided by operator

Indicator repeats for more than one goal.

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To: Kim Wever, C/CAG

From: Libby Nachman, Alta Planning + Design

Date: June 09, 2022

Re: **Appendix D: Best Practices Memo**

Introduction

The following memorandum summarizes best practices for a shared micromobility system in San Mateo County based on a review of relevant case studies. The memorandum focuses on key considerations requested by C/CAG and the members of the Ad Hoc Advisory Group, and based upon Alta's expertise.

The project team identified three peer systems for review, with a focus on regional or countywide systems that operate in or across multiple jurisdictions, which are the most applicable to a future system in San Mateo County. The three systems are: Bay Wheels in the San Francisco Bay Area, ValleyBike Share in the Pioneer Valley region in Massachusetts, and Sacramento Regional Bike Share.

Peer System Comparison

Case Study #1: Bay Wheels

Location	**SF Bay Area, CA**
	• San Francisco
	• San José
	• Oakland
	• Berkeley
	• Emeryville
Population[1]	• San Francisco: 874,784
	• San José: 1,029,409
	• Oakland: 422,575
	• Berkeley: 123,065
	• Emeryville: 11,679
Owner/Operator	Lyft (exclusive contract for bike share)
Start of Service	2015
System Type	Hybrid
Number of Stations/Hubs	550 stations
Number of Bikes	7,000+ bikes

[1] American Community Survey (ACS) 2020 5-year estimates

About the System

Bay Wheels is a regional bike share system, launched in 2015, serving the San Francisco Bay Area, including the Cities of San Francisco, San José, Oakland, Berkeley and Emeryville. The initial pilot, launched in 2013, included three jurisdictions along the Peninsula (Redwood City, Palo Alto and Mountain View) but these jurisdictions were not brought into the final coordinated system.

The system is a partnership between the Metropolitan Transportation Commission (MTC), the five municipalities, and Lyft. The program offers discounted memberships for eligible low-income individuals through its "Bike Share For All" program. In this program, eligible individuals can sign up for a one-year pass for $5, and can pay $5/month after the initial one year. Lyft also allows cash payment and payment with a prepaid debit card.

The system is integrated with the regional transit card, Clipper, allowing registered members to unlock bikes using their card.

System Governance

The system is owned and operated by Motivate (a subsidiary of Lyft, acquired in 2018). MTC, the Bay Area's MPO, has a Program Agreement with Lyft that outlines the broad requirements of the bike share program. The Program Agreement outlines requirements for the scope of services, key performance indicators (KPIs), liquidated damages, program area, program size, program expansion, maintenance, operations, advertising, sponsorship, revenue sharing, price schedules for memberships, marketing, website, security fund, indemnity, insurance, termination, default, employment, disputes, etc.

MTC, Lyft and the five participating member jurisdictions have a Coordination Agreement that outlines the detailed requirements of member jurisdictions' coordination with Lyft. The Coordination Agreement outlines the details of a steering committee and member communities' responsibilities regarding permitting, CEQA compliance, summary of local activities, and notifications to MTC.

San Francisco and San José also have their own agreements with Lyft regarding hybrid e-bikes. The agreements are between each city and Lyft, and make clear requirements for Lyft in order to deploy e-bikes. The agreements outline details such as bicycle component requirements, fees, number of bikes, e-bike-specific KPIs, etc.

All entities are responsible for their own costs; this means that MTC and the local jurisdictions do not pay Lyft, and Lyft does not share revenues with the public agencies with the exceptions for fees related to e-bikes.

Case Study #2: ValleyBike Share

Location	Pioneer Valley, MA
	• Amherst
	• Easthampton
	• Holyoke
	• Northampton
	• South Hadley
	• Springfield
	• Chicopee
	• West Springfield
Population	• Amherst: 39,995
	• Easthampton: 15,930
	• Holyoke: 40,161
	• Northampton: 28,552
	• South Hadley: 17,715
	• Springfield: 153,677
	• Chicopee: 55,186
	• West Springfield: 28,527
Owner	Shared ownership between participating communities (public ownership)
Operator	Bewegen Technologies (exclusive contract)
Start of Service	2018
System Type	Docked
Number of Stations/Hubs	74 Stations (20 more planned within 18 months)
Number of Bikes	720 e-bikes (will add about 190 more within 18 months)

About the System

ValleyBike Share is a bike share system that currently serves University of Massachusetts and the communities of Amherst, Easthampton, Holyoke, Northampton, South Hadley, Springfield, West Springfield, and Chicopee, MA. The system plans to expand to Westfield later in 2022. Interest in the system began in 2008, though planning in earnest did not begin until 2014 when PVPC hired Alta to lead the Pioneer Valley Bike Share Feasibility Study. The system received $1.3 million from the federal Congestion Mitigation and Air Quality (CMAQ) Program in 2017, before launching in 2018 in five communities. In late 2018, a sixth community joined after receiving a Massachusetts Housing Choice grant. ValleyBike received a second CMAQ grant in 2019 to fund the system's 2021 expansion, which added about 21 stations, 300 bicycles, and two new communities.

ValleyBike has successfully created a bike share system that spans vastly different communities. Different populations served by the system include high-income and low-income communities, communities with large student populations, communities with large refugee populations, multilingual communities, and more. The system has worked to market the system to as many people as possible, including providing free low-income and student memberships through a grant from the Community Foundation of Western Massachusetts. ValleyBike representatives attend local events such as farmers markets to promote the free memberships and assist with enrollment for unbanked people.

The system is made entirely of electric-assist bicycles. Each of the bikes are equipped with horns, automatic front and back lights, a kickstand, a secondary lock for stops during the rental duration, seat height adjustments, and a front basket that holds up to 45 pounds.

System Governance

The bike share system consists of a contracted partnership between the University of Massachusetts, the Pioneer Valley Planning Commission (PVPC), the City of Northampton and Bewegen Technologies. The City of Northampton is the lead community and Bewegen Technologies is the vendor.

The City of Northampton acts as the lead community for the ValleyBike Share initiative, which makes them responsible for grants, contracts, and multi-community administration. Northampton estimates 0.4 Full-Time Equivalent (FTE) staff time spent working on the ValleyBike Share system.

The participating cities are responsible for their own station locations, the ownership of equipment within their communities, and assisting in identifying and soliciting local sponsors. After the system expanded in 2021, the participating cities (besides Northampton) started to pitch in fees to help fund system administration. Each participating municipality/entity pays $4,056 plus $463 per station. The participating cities are responsible for supplying power to each station within their community, which is estimated to be $110 per station that uses an existing power service and $150 per station that requires a dedicated connection to the power grid.

An estimated $2 million has been spent to date on capital costs for the system, most of which has been covered by the federal Congestion Mitigation and Air Quality (CMAQ) Improvement Program. Concrete pads and electric supply for stations have been paid for by each participating municipality, with the help of some small grants. Electric bicycles, docking stations, and wayfinding stations have mostly been funded by two CMAQ funding cycles, with a third to start in Fiscal Year 2023.

The vendor, Bewegen Technologies, develops and implements the system such as the hardware, software, operation, maintenance, marketing, sponsorship, and advertising. Bewegen keeps all user fees and sponsorship fees in return for no operating costs for the participating agencies/communities.

One financial challenge for the ValleyBike Share system is a lack of sponsors. User fee revenue is estimated to cover about 1/3 of the system costs, but more money from sponsorship fees is needed for long-term sustainability of the system.

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Case Study #3: Sacramento Regional Bike Share

Location	Sacramento, CA
	West Sacramento, CA
Population	Sacramento: 503,482
	West Sacramento: 53,574
Owner/Operator	Lime and other operators (non-exclusive permit)
Start of Service	2018
System Type	Dockless
Number of Stations/Hubs	133
Number of Bikes	350

About the System

The Sacramento Regional Bike Share system currently serves the Cities of Sacramento and West Sacramento and is planning to expand to the City of Davis.

Here is a brief timeline of how the system has evolved over time:

- 2013: Sacramento Metropolitan Air Quality Management District (SMAQMD) won a grant to launch a bike share system.
- 2015: SMAQMD handed over the management of the bike share grant and system to SACOG.
- 2016: SACOG, in partnership with the Cities of Sacramento, West Sacramento, and Davis, procured Social Bicycles (Sobi) to operate in the three municipalities.
- 2018: Uber (JUMP) purchased Sobi and SACOG launched an all-electric assist bike share system.
- 2019: SACOG was JUMP's second top market globally in terms of daily trips
- 2019: The City of West Sacramento and the City of Sacramento developed local ordinances to allow scooter operators. SACOG ran the regional bike share system with JUMP bikes across the three cities, and private e-scooter companies began operating in Sacramento and West Sacramento.
- 2020: The COVID-19 pandemic halted all shared micromobility operations. Lime took over the operations from Uber.
- 2021: SACOG, West Sacramento, and Sacramento entered into a revenue sharing agreement with Lime. The City of Davis does not currently allow e-scooters and is working with SACOG and Lime to develop a system. E-scooter operators returned to West Sacramento and Sacramento.
- 2022: SACOG issued an RFP to help determine the future arrangement of the regional shared micromobility program.

System Governance

The Sacramento Regional Bike Share system consists of a program agreement between the Sacramento Area Council of Governments (SACOG), the City of West Sacramento, the City of Sacramento, and Lime to operate shared bikes and scooters. In addition to Lime, three other privately owned and operated scooter vendors are currently permitted and operating in Sacramento and West Sacramento. Because the City of Davis doesn't currently allow shared scooters, SACOG and Lime are currently working with the City of Davis to launch bike share in Davis.

SACOG leads the system administration for the agreement with Lime. The City of Sacramento and City of West Sacramento oversee the other permitted scooter vendors. Lime and the scooter vendors own and operate the system. SACOG spends staff time—an estimated 0.2 FTE—administering the system, planning for system expansion, and planning for bike parking to supplement the system. All operational tasks and costs are covered by the vendors. Under the program agreement, the vendors must meet certain service level, equity, and data sharing requirements. A Bike Share Policy Steering Committee, consisting of staff from SACOG and representatives from the city partners, makes administrative decisions regarding the shared micromobility system.

While Lime owns their equipment, SACOG has spent roughly $1 million buying and installing the public bike racks meant for shared bike parking. The Cities of Sacramento and West Sacramento reinvest per trip fees from permitted scooter vendors on bike parking.

SACOG and Lime recently entered into a multi-year revenue-sharing agreement in which Lime receives a subsidy when ridership is low and the Lime provides funding to SACOG when ridership is high. For more information about the terms of this agreement, see the *Funding Mechanisms* section below. The revenue-sharing agreement between SACOG and Lime is a short-term agreement. SACOG spent roughly $75,000 on the revenue-sharing agreement in 2021. SACOG is currently evaluating the system and considering options for a long-term approach to shared micromobility in the region.

Key Considerations

Funding Mechanisms

Discussed in more detail in the Feasibility Memo (Task 2.6), funding for shared micromobility programs can come from user fees, sponsorship and advertising, and grants. It is not likely that the full cost of shared micromobility will be covered by a single source. All types of funding, in addition to securing local funds, should be leveraged to implement and sustain the system.

From the full list of potential public funding sources from grants (listed in the Feasibility Memo), the table below identifies the highest priority public funding sources for shared.

Table 1. Highest Priority Shared Micromobility Funding Sources

Funding Opportunity	Eligible Project Types	Funding Source Detail
Congestion Mitigation and Air Quality Improvement Program (CMAQ)	Funds may be used for a transportation project or program that is likely to contribute to the attainment or maintenance of a national ambient air quality standard	CMAQ funding is apportioned by the federal government to state governments, which can then fund projects either in an MPO's current transportation plan and transportation improvement program (TIP) or the current state transportation improvement program (STIP). Allocating CMAQ funds to bike/scooter share would ensure bike/scooter share is included in the TIP/STIP.

Funding Opportunity	Eligible Project Types	Funding Source Detail
State and Regional Funding		
Transportation Fund for Clean Air (TFCA)	First- and Last-Mile Connections (existing and pilot), trip reduction projects, bicycle parking, bikeways, bike share	In 1991, the California State Legislature authorized the Bay Area Air Quality Management District to impose a $4 surcharge on motor vehicles registered within the Bay Area to fund projects that reduce vehicle emissions. The Air District allocates this revenue through its Transportation Fund for Clean Air (TFCA) program to fund eligible projects and programs. The County Program Manager funds ongoing projects such as Commute.org and BART shuttles as well as local quick build projects. Projects must demonstrate cost effectiveness.
Bike Share Capital Program	Grants support local government to conduct community planning, site selection, and contract with private vendors for a bike share system.	Administered by MTC and provides grants to help launch bike share in Bay Area Counties. The grants are part of the larger One Bay Area Grant (OBAG) program.

Revenue Sharing

In addition to the funding sources mentioned above, the managing entity and the operator/vendor can create an agreement to share revenue. This type of agreement can be structured in many ways.

The Sacramento Area Council of Governments (SACOG) and Lime recently entered into a multi-year revenue-sharing agreement in which the operator/vendor receives a subsidy when ridership is low and the operator/vendor provides funding to the managing entity when ridership is high. According to the minutes from the Regional Bike Share Policy Steering Committee meeting when the agreement took place, the goal of the agreement was to "provide an option to continue bike share in the near term and collect more information about ridership, revenues, and costs in current and post-pandemic market conditions while the region updates the bike share business plan and considers the longer-term delivery of micromobility for the region's residents."

Under the general terms of the revenue-sharing agreement, SACOG would provide a monthly subsidy to Lime when ridership is low (below 2.75 trips per bike per day) and would receive revenue from Lime when ridership is high (above 3.5 trips per bike per day).

Operational Considerations

Owner/Operator Models

Table 2 below discusses pros and cons of the most common operational models for shared micromobility programs in the U.S. The four models are:

1. Privately owned and operated (permitted or contracted)
2. Publicly owned and privately operated
3. Publicly owned and nonprofit operated

4. Nonprofit owned and operated

For more information on common shared micromobility ownership and operational models, refer to the Feasibility Memo (Task 2.6).

Table 2. Pros and Cons of Different Operational Models

MODEL	PROS	CONS
Privately Owned and Operated	• Removes financial responsibility and risk from the City and other local partners • The private operator is strongly incentivized to ensure program success (e.g. high ridership and profitability) • Higher likelihood of success due to established skills and experience from private sector operator	• Correlated to market demand and highly dependent on private sector interest • Due to private operation, agency control and program transparency is limited to what is defined in regulation and permitting • Funding options may be limited to what private operator can support • Equity goals are harder to implement
Publicly Owned and Privately or Non-Profit Operated	• The agency has full program control, including the brand, look, and operating standards • Agency can apply for federal, state, and local funding • Public can hold the agency accountable to a transparent system • Agency can include goals such as geographic and social equity in the program	• Agency must have both interest and capacity to manage the program • Agency takes on risk and ongoing financial responsibility • There are multiple competing priorities beyond financial and operating performance
Non-Profit Owned and Operated	• This option provides the most flexibility in funding, including local, state, and federal funds, sponsorships, advertising, and philanthropic contributions • Community-oriented missions of NPOs are well-received by the public • A Board of Directors made up of a broad range of community stakeholders effectively engages public, private, and community organizations in the system	• If NPO is newly-created, building capacity and establishing organization can take time • NPO often lacks skills and experience at system launch • The NPO's performance standards may not meet public and agency expectations for transit service

Major Operational Considerations

The following contains a list of the major factors to consider when planning to operate a shared micromobility system.

- **Maintenance:** Ongoing maintenance of shared micromobility vehicles and stations is required for a shared micromobility system to operate smoothly. If the managing entity pursues a private vendor and operator, maintenance protocols should be included within service level agreements between the governing agency and the shared micromobility vendor. Penalties for noncompliance should be included within the agreement to empower the governing agency to enforce maintenance procedures.
- **Re-Balancing and E-Vehicle Charging:** This is a critical aspect of any successful shared micromobility system, as it ensures that people have vehicles where and when they want them. The system operator should be able to demonstrate how they will maintain vehicle availability throughout the service area on a daily basis. Additionally, e-bikes and e-scooters necessitate battery charging, so it will be important that the operator is experienced with charging a fleet of electric vehicles, whether through on-street charging (such as through a charging dock), off-street charging (such as in a maintenance warehouse) or swapping out batteries on the street. A service level agreement can include metrics for re-balancing and e-vehicle charging.
- **Customer Service:** Operators are responsible for customer service and should have a call center, online portal, and service center to help resolve technical and mechanical issues. A service level agreement can include metrics for customer service levels.
- **Data Collection and Evaluation:** Shared micromobility data collection has the potential to improve user experience by providing information about where vehicles are available throughout the system. Data collected from users also has the potential to improve overall system delivery by allowing the governing agency or private vendors to analyze usage trends and respond to customer desires and needs. Despite these benefits, data collection should be anonymized to protect users' privacy and user data should not be shared with third parties. The data to be provided should be described within a service level agreement or other written agreement. At a minimum, raw ridership data collected and provided to the governing agency should include trip date and time, point of origin/destination, length of trip (in miles), and duration of trip (in minutes). Data aggregated on a monthly basis should, at a minimum, include average number of trips per day, origin and destination locations (presented in a mapped format), average trip distance, average trip duration (in minutes), average number of unique riders per day, average number of trips per unique rider per day, location and details of all reported crashes involving shared micromobility vehicles, location of each complaint, nature of each complaint, description of vendor response, and vendor response time for each complaint. See the section below for shared micromobility data sharing best practices.

Additional Operational Considerations

As part of developing any agreement with a shared micromobility operator, whether private or nonprofit, staff should review the *NACTO Guidelines for Regulating Shared Micromobility* document to ensure that the agreement addresses the considerations. In addition to the above considerations, some key considerations from the report include:

- Limit number of companies operating
- Require operator to remain in good standing (fees, fines, reporting and other requirements)
- Require operator to remove inoperable or unsafe vehicles
- Require operator to have at least one local staff person
- Develop management plans to address fleet removals before severe weather events, and fleet relocations for special events
- Develop reporting to inform managing entity on regular maintenance, rebalancing and other operations duties and immediately report any incidents
- Include ability to remotely lock vehicles
- Provide 24/7 customer service and report on customer service inquiries
- Include discount payment plans and a variety of payment options
- Develop and undertake outreach and promotion strategies and marketing

- Implement data privacy and security measures
- Require real-time vehicle location data to be publicly available and available in a standard format

Implementation Process

A shared micromobility system can be implemented in multiple phases, with an initial service area for system launch and subsequent system expansion. Shared micromobility service expansion can be accomplished either as a single large-scale system expansion or incremental installation of hubs as funds become available.

The first phase of a shared micromobility system provides the opportunity for residents and visitors to get comfortable with small-scale shared micromobility on city streets and build support for bike and/or scooter share and bike infrastructure before the system expands to other neighborhoods.

It is not necessary to expand all at once. The timing and size of the expansion should consider the following factors:

- **Ridership**: High system ridership may indicate the system is ready to expand.
- **Funding**: Identifying additional funding from sponsorships, grants, or operational funding will be necessary to determine the timing and size of system expansions.
- **Infrastructure**: As new bike infrastructure is implemented, system expansions could be coordinated with the arrival of new facilities that provide safe connections for people bicycling and rolling. Space for shared micromobility can be included in the design of new infrastructure; for example, a bike share station could serve as a separation device in a protected bike lane, or a shared-use path could include additional bike racks for parking micromobility vehicles.
- **New Indicators of Demand**: Shared micromobility system expansion could be implemented to respond to new development, changes in land use, or expansion of transit service.

Equity

As a shared micromobility system is developed in San Mateo County, it is critical to build a system that equitably serves all users of the transportation system. Traditionally, the community members most susceptible to experiencing the negative impacts of limited mobility options have been children, senior citizens, people of color, people with limited access to a car, people with limited formal education, lower-income households, or people with limited proficiency with speaking English. Access to transportation can help or hinder a person's ability to get to work, attend school, buy healthy food, visit a doctor, and socialize or otherwise contribute to their community.

It is important for new shared micromobility services to address these barriers in order to create a successful, sustainable system. Developing specific shared micromobility equity programs can help these historically marginalized communities gain greater access to the transportation network in San Mateo County and can help foster new opportunities for economic and social inclusion.

Removing Barriers to Users

Subsidized Memberships and Income-Based Discounts: The vast majority of shared micromobility systems that pursue equity goals, regardless of size, have plans that address the financial barriers to users. An income-based discount option is a key strategy to include low-income shared micromobility riders who may not be able to afford the transportation service at the standard fee. Subsidized memberships support equity goals by reducing barriers to access to those who might not usually consider shared micromobility to be a low-cost form of transportation. For example, Bike Share for All, the Bay Wheels equity program, features $5 first-year Annual Memberships ($5/month after the first year) for Bay Area residents who qualify for CalFresh, SFMTA Lifeline Pass, or PG&E CARE utility discount.

Cash Payment: Cash or prepaid card options are critical to allow unbanked populations to participate in shared micromobility. In recent years, many shared micromobility providers, both public and private, have implemented cash payment options where users can go to designated locations to add cash to their accounts. Reload locations are often social service providers, shared micromobility offices, and local grocery or convenience stores. Other systems are allowing prepaid debit cards to be included as a payment option. For example, Bike Share For All allows users to pay with cash and prepaid cards in addition to debit cards.

Alternate Payment Structures: Beyond income-based discounts and cash payment options, shared micromobility systems should consider other alternative payment structures in order to reduce the financial barriers to entry. For example, rather than offering either a year-long pass or weekly passes, shared micromobility providers could consider offering monthly passes which cater to regular users who can't afford the high total cost of a year-long pass or the high per-trip cost of a weekly pass. Additionally, providing longer rental times can alleviate fears of overage charges.

Reduce Liability and Eliminate Hidden Fees: Some shared micromobility systems require a deposit or have steep fees for lost or stolen bikes or scooters. Eliminating these fees across the board or just for low-income users can make people feel more comfortable using the system. This will require discussion with the operator/vendor ultimately chosen to support implementation of shared micromobility in San Mateo County.

Targeted Marketing: Targeted marketing is any content that increases awareness of shared micromobility among demographics and populations that may benefit from additional outreach. This strategy is a key way for providers to pursue equity goals. Targeted marketing should reflect the experiences of San Mateo County residents. Successful content is created for (and often with the help of) specific groups and communities the shared micromobility system hopes to engage. These strategies could include: ambassador photo shoots, press releases, social media, billboards, bus-stop displays, station panels, flyers, emails, and custom painted or sponsored bikes and/or scooters by community partners. Additionally, shared micromobility information offered in both Spanish and English will help further reduce barriers.

Electric Assist Vehicles: Electric assist bicycles and scooters provide better access to a system's service area for riders with mobility and fitness challenges. With the introduction of these devices into the shared micromobility system, users will be able to more easily move throughout the service area, as electric vehicles make longer trips more possible and help users to overcome steep terrain.

Station Location and Service Area: Shared micromobility station location and service area are critical components of an equitable system. While shared micromobility systems typically launch in high demand (and presumed higher revenue) areas, such as downtowns and near tourist destinations, geographic and social equity should be considered when deciding where to locate a system. The extent of the service area should be determined with community stakeholders to make sure that the balance between station coverage and station density aligns with community goals. Station sites should consider areas that are currently underserved by public transit, near destinations such as libraries, grocery stores and community or cultural centers. The National Association of City Transportation Officials (NACTO) guidelines recommend that stations be no more than 0.4 miles apart to have truly comprehensive, equitable networks well-integrated with common destinations and existing transit.[2]

There are strategies to ensure that system coverage and density are met. For example, in Detroit, MoGo bike share is expanding to suburban communities through the creation of satellite bike share hubs for outlying pockets of residents.[3] The purpose of this style of expansion is to cover Detroit border communities who live near other jurisdictions and face a fragmented transportation system. Ultimately, it is important for every shared micromobility provider to determine the extent of the service area with community stakeholders and effectively communicate that extent to its members.

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[2] National Association of City Transportation Officials, (2016). "Bike Share Station Siting Guide." Nacto.org.

[3] Cos, S. "Detroit Provides Adaptive Bikes, Will Expand System," Better Bike Share Partnership. Betterbikeshare.org.

Rebalancing: Shared micromobility is a transportation system that is dynamic and fluid. It is important for every shared micromobility provider to ensure the appropriate redistribution of bicycles and scooters to its full service area such that no location is over or undersupplied. Without rebalancing efforts, the system may drift away from its original service area and be rendered ineffective or exclusionary to certain communities. Shared micromobility providers can incentivize rebalancing through fee and payment structures, or prioritize certain locations over others to ensure that the system is equitable for all people. For example, Citi Bike in NYC implemented its Bike Angels program to incentivize users to take bikes from crowded stations and drop them off at empty or nearly-empty stations. Users earn points, and can win prizes such as ebike credit, free 1-week membership extensions, Lyft credit, and even cash rewards.

Partnerships with Non-Profits and Social Services: Before a shared micromobility system is implemented, it is important to build community buy-in to attract users to a system and build trust in the program. Thoughtful community engagement is essential. Portland State University research found that lack of knowledge of about the bike share system is a significant barrier for lower income people of color.[4] The same study found that more personal sources of information, such as talking to a shared micromobility outreach staff person, volunteer, or community center staff were more effective than more passive sources of information at inspiring community members to try shared micromobility.

Community engagement should be designed with a feedback loop, so that there are clear ways to incorporate recommendations from the community into the shared micromobility system design and programming. For example, community input can:

- Influence the specific location of a station,
- Help identify nonprofit partners to support program outreach,
- Change crime prevention strategies, and/or
- Guide new investments in bike infrastructure.

Shared micromobility providers should collaborate and form partnerships with local non-profits and social service providers who already work directly with historically-marginalized communities. Over 75% of bike share systems report having at least one community partner, and over half report having two.[5] Local non-profits and social service providers have deep knowledge about community needs and communication channels for additional outreach. Community partners share the trust and history of the people shared micromobility providers need to engage. Shared micromobility providers should look for ways to add capacity and support local groups, such as paying advocates for their time, creating local jobs, and being responsive to community feedback. By tapping local resources, shared micromobility providers can more effectively mitigate the lack of knowledge among community members for how to use the system or how to sign up. Key strategies that shared micromobility systems around the country employ in partnership with non-profits and social services are: facilitated enrollment, education and skills classes, prescribe-a-bike public health programs, organized rides, and ambassador programs.[6]

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[4] McNeil, Nathan, Jennifer Dill, John MacArthur, Joseph Broach, Steven Howland. Breaking Barriers to Bike Share: Insights from Residents of Traditionally Underserved Neighborhoods. NITC-RR-884b. Portland, OR: Transportation Research and Education Center (TREC), 2017.

[5] Ibid.

[6] Ibid.

Adaptive Bike Options: In the past several years, many shared micromobility systems have begun to offer adaptive bikes for people with limited mobility to expand the benefits of shared micromobility beyond the typical able-bodied user and respond to critiques from disability rights advocates. The mobility, recreation, and inclusion benefits are abundant, but challenges remain. Adaptive shared micromobility bikes require specialized maintenance, are not always intuitive to use, and create logistical challenges for commuting. For example, in 2019, the Bay Wheels in Oakland, CA piloted five different types of adaptive bicycles: upright handcycles, recumbent handcycles, recumbent leg trikes, recumbent trike tandems, and side-by-side tandems.[7] However, the bikes were only available for checkout at one location at specific times on the weekends, and only for round-trip ride.

Hiring Policies: Equity in internal operations means hiring policies that provide job opportunities for underserved residents. By training employees from disadvantaged communities, the shared micromobility system will ultimately be more responsive to servicing the needs of all its residents.[8] By integrating communities directly into the planning, implementation, and continuation of a bike share system, providers can ensure a greater degree of success of the shared micromobility system in those same communities.

Transit Integration

Among shared micromobility systems that have equity programs, half of all medium sized systems (350-750 bikes) report efforts to integrate transit with their system.[9] Generally, these efforts manifest themselves in three areas: access, pricing and payment methods. Integrated transit systems and shared micromobility systems can be mutually reinforcing in their goals to increase connectivity, awareness, and user support.

Access*:* To ensure that a shared micromobility system is accessible from public transit, station planners should consider siting stations near or at existing bus stops or transit centers. Larger scale integration efforts may include changing transit routes to better align with the local bicycle infrastructure network, in order to facilitate cross-use. For example, in Pittsburgh, PA, the Port Authority of Allegheny County allows riders a free bike trip (up to 15 minutes) if they are taking a trip to a public transportation stop.[10] Shared micromobility systems can become first and last mile solutions if those trips are made easily accessible to and from the existing transit network.

Pricing*:* Pricing models may change depending on what equity targets the shared micromobility provider focuses on. However, when integrating with a transit system, some providers create a payment system that mirrors current transit fares such that the payment is an easily understood extension of the current pricing model, as in the case of Metro in Los Angeles.[11]

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[7] Baldassari, E. (2019). "The shared bike and scooter industry often leaves out people with disabilities – but Oakland is changing that," The Mercury News. Mercurynews.com.

[8] IBID

[9] IBID

[10] IBID

[11] Corbin, A. Editor. "Bike Share or Bus? In Los Angeles, the Price Will be the Same. Better Bike Share Partnership. Betterbikeshare.org.

Payment Methods*:* Integrating payment methods will depend on the technology being used by the existing transit system. Some systems utilize a single card. Others add a special RFID bikeshare sticker to existing transit cards that sends a different frequency signal to unlock bikes, as in the case of Milwaukee County Transit System and Bublr Bikes.[12] Alternatively, Fargo's Great Rides bike share allows North Dakota State University student access to both public transportation and bike share systems with their student ID, paid for by student fees.[13] Researchers note that an integrated fare pass requires a debit or credit card on file, especially for pricing models that have a pay-as-you-go option.

Additional strategies to integrate transit systems and shared micromobility systems can be learned from the Milwaukee County Transit System's partnership with Bublr Bikes. These include having buses announce when stops are connected to bike share stations, displaying stops with bike stations via a MCTS transit app, co-branding bikes, and exploring joint station maintenance.[14]

Accessibility

Whether a shared micromobility system has stations or dockless vehicles, the system must take measures to ensure the public right-of-way (ROW) meets Americans with Disabilities Act (ADA) standards and is kept clear and accessible for all sidewalk users. To maximize ROW accessibility, system owners and operators should consider the following:

- **Discourage sidewalk riding**: People tend to ride on the sidewalk when they don't feel safe on the roadway—typically when there are no designated bicycle facilities. While laws regarding riding shared micromobility vehicles on sidewalks varies from jurisdiction to jurisdiction, it is best practice for system users to ride on the street and use designated bicycle infrastructure where available.
- **Provide adequate parking solutions**: The managing entity, the operator, and the local jurisdiction should partner to ensure shared micromobility vehicles are properly parked outside of the ROW. A variety of infrastructure and non-infrastructure related parking solutions include:
  - **Geofencing**: Typically shown through the shared micromobility vendor's app, geofencing is a virtual area defining where shared micromobility vehicles are or are not allowed to park. Some vendors are also now requiring photographs from users to ensure proper parking and/or have sound to indicate improper parking.
  - **Bike racks**: Depending on the type of shared micromobility vehicle and vendor, users can be encouraged or required to park vehicles to physical infrastructure such as bike racks. A system utilizing bike racks for parking should ensure that there are enough bike racks available to accommodate both the shared micromobility vehicles and personal owned devices.
  - **Painted parking zones**: Users can be encouraged or required to park vehicles in designated parking areas that are indicated using thermoplastic, paint, or tape. For example, Arlington, VA uses painted parking areas to indicate appropriate scooter parking locations (see image below).
  - **Stations**: Docked and hybrid systems require or encourage shared micromobility vehicle parking at stations, which have to be placed outside of the ROW.

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[12] Davies, J. "MTCS + BUBLR = BUSLR." Bublr Bikes. Bublrbikes.org.

[13] Corbin, A. Editor. "Why the Country's Best Bike Share Might be in Fargo." Better Bike Share Partnership. Betterbikeshare.org.

[14] MacArthur, J., McNeil, N, Broach, J., Cumings, A., Stark, R., Sanders, R., and Witte, A. (2019). "National Scan of Bike Share Equity Programs: Approaches and Best Practices for Promoting Equity in Bike Share." Transportation Research and Education Center (TREC) pp 1-138.

- **Provide methods to report and address ROW violations**: Users should be able to easily report improper vehicle parking and operators should have a clear policy for how to address improper vehicle parking and answer user concerns.

Scooter parking in Arlington, VA. Image source: Shared Use Mobility Center

Liability Considerations

Owners and operators can limit liability related to shared micromobility systems in various ways[15], including:

- Purchasing insurance
- Requiring users of the program to sign waivers releasing the program from liability for injuries
- Keeping the shared micromobility vehicles well-maintained
- Educating users about use of the shared micromobility vehicle and providing safety training

Public agencies have some immunity in regards to discretionary decisions, such as shared micromobility station locations, maintenance schedules, and helmet use by system users.

When purchasing insurance, it is recommended that shared micromobility companies purchase the following[16]:

- General Liability

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[15] https://www.publichealthlawcenter.org/sites/default/files/resources/ship-fs2-bikeshareliability-2011.pdf
[16] https://foundershield.com/industry/micro-mobility/

- Excess General Liability
- Workers' Compensation
- Hired and non-owned auto coverage (HNOA)
- Property Insurance

Theft/Vandalism/Security

For all shared micromobility system types, theft and vandalism are part of the business. However, shared micromobility vendors have designed the current generation of market-available vehicles to be more resistant to vandalism and theft than earlier models. Today's shared micromobility vehicles have a number of anti-vandalism and anti-theft features, including:

- **GPS tracking:** GPS technology integrated into shared micromobility vehicles allows for the tracking and recovery of vehicles that have been stolen.
- **Integrated locks:** Integrated locks allow users to securely lock dockless and hybrid shared micromobility vehicles to a hub or public bike rack.
- **Encasement of vulnerable parts**: Shared micromobility vehicles today often feature wires, chains, and gears that are partially or entirely encased within the frame of the bike or scooter itself. This encasement shields these vulnerable parts from being cut or stolen off of the vehicle.
- **Anti-theft hardware:** Shared micromobility vehicles generally feature anti-theft nuts and bolts that cannot be quickly or easily removed using standard hand tools.
- **Accessory integration with frame**: Accessory features on shared micromobility vehicles (such as lights, bells, and baskets) are sometimes integrated into the design of a vehicle's stem, handlebars, or frame rather than being attached as a mountable feature.
- **Solid tires:** Some shared micromobility vehicles feature tires made out of solid rubber rather than inflatable tubes to mitigate risk of flats and slashed tires.
- **Custom design:** Shared micromobility vehicles are highly customized to the unique demands of shared mobility, and many parts are not compatible with private bicycles. This greatly reduced the street value of shared micromobility vehicle parts.

Additionally, the encouragement and enforcement of secure parking practices through in-app messaging, user fines, and diligent complaint response times can decrease the risk of shared micromobility vehicle theft.

Data Sharing Requirements

Data Collection & Sharing

The managing entity should collect data from the system in order to monitor and evaluate fleet performance and system operation as well as inform planning processes and infrastructure improvements.

Shared micromobility systems typically collect and utilize data through one of two primary data formats: the General Bike Share Feed Specification (GBFS) and the Mobility Data Specification (MDS). The overall purpose of the data formats is to provide a consistent and secure way to share data between the public, bike share providers, and regulatory. These two data formats are described below:

- **GBFS:** GBFS provides municipalities and system users with the status of the shared micromobility system at a point-in-time. The data is publicly available and offered in real time. Examples of data available through GBFS include the location and status of existing bikes and scooters, stations, and relevant street level data such as speed limits and parking zones. GBFS does not contain historical data or data about bikes and scooters that are being used. GBFS is most often used by shared micromobility system users to identify the number and location of available bikes and scooters and/or stations within the system. Over 600 bike share and scooter systems have adopted the GBFS standard.

- **MDS:** MDS provides both real-time and historic data about shared micromobility vehicles and trips. MDS also allows municipalities to digitally and dynamically set policies related to bike and scooter share—such as where and how shared micromobility vehicles can operate—and easily communicate with shared micromobility service providers. The data is only intended for use by shared micromobility regulators and not the public. As a requirement to use MDS, however, shared micromobility operators must also provide a publicly available GBFS feed. Over 130 public agencies currently use MDS.

A single agency facilitating data collection and sharing can support regionwide data standardization. For example, the Denver Regional Council of Governments (DRCOG) uses Ride Report to manage an open data shared micromobility portal. Five cities participate with DRCOG, the Colorado Department of Transportation and the Regional Transit District. New partners can join with a simple Letter of Interest pledging to provide data and a nominal annual fee of $1,000 for cities and $2,000 for counties.

Data Protection

Privacy Principles for Mobility Data

The collection and use of shared micromobility system data should be used in a way that both informs system functionality and protects individual privacy. It is best practice for the managing and operational entities of the shared micromobility system to adhere to the Privacy Principles for Mobility Data.[17] The Privacy Principles were developed by transportation and technology professionals and experts in the public sector, private sector, and academia, such as the City of Philadelphia, the Open Mobility Foundation, Future of Privacy Forum, and Columbia University. The goal of the Privacy Principles is to protect individual privacy in the use of mobility data.

The seven principles include:

1. We will uphold the rights of individuals to privacy in their movements.
2. We will ensure community engagement and input, especially from those that have been historically marginalized, as we define our purposes, practices, and policies related to mobility data.
3. We will communicate our purposes, practices, and policies around mobility data to the people and communities we serve.
4. We will collect and retain the minimum amount of mobility data that is necessary to fulfill our purposes.
5. We will establish policies and practices that protect mobility data privacy.
6. We will protect privacy when sharing mobility data.
7. We will clearly and specifically define our purposes for working with mobility data.

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[17] https://nabsa.net/2021/11/03/privacyprinciples/

To:	Kim Wever, C/CAG
From:	Alta Planning + Design and Foursquare ITP
Date:	July 21, 2022
Re:	**Appendix E: Program Recommendations**

Executive Summary of Recommendations

The San Mateo County Shared Micromobility Feasibility Study provides recommendations for development of a shared micromobility program suitable to the context of San Mateo County communities. The recommendations are based on the results of a feasibility analysis, the vision, goals, and metrics established for the project, and a review of relevant best practices. The following is an executive summary of recommendations for shared micromobility:

- Governance and Management
- System Type
- Cost and Funding
- Plan Development
- Other System Specifications

Governance and Management Recommendations

- Establish a multi-jurisdictional program with a single program manager responsible for procurement and contract management. This is distinct from other options considered, notably:
  - A model where each jurisdiction manages their own procurement and contract but harmonizes operating requirements to ensure inter-jurisdictional trips are possible. This option was deemed less appealing due to the administrative burden placed on participating municipalities.
  - A highly centralized model for a Countywide program, which would have offered program efficiencies and control, but was deemed less feasible due to variability across jurisdictions and internal resources/staffing capacity of potential leading agencies.
- The recommended program manager is C/CAG. Two other agencies in the region were identified as potential program mangers; however, because of C/CAG's experience with contract administration and managing countywide programs, C/CAG was deemed best suited to play the role of program manager.
- Contract out to one or more private, third-party operators.
- Individual jurisdictions could opt into the program with the flexibility to dictate certain operating requirements, such as no-ride areas, speed limited areas, and restricted parking areas. Jurisdictions will retain the ability to fine the operator or impound vehicles in instances of violations but ideally any day-to-day operational issues will be handled by the vendor with oversight from the program manager.
- Establish a governance committee composed of participating jurisdictions, the program manager and any other key stakeholders as needed. This body would be a venue to discuss program issues, share lessons learned, and resolve problems.
- Establish a process for escalating complaints and issues, creating a clear chain of command for any operational issues and complaints, including a process for jurisdictions to quickly escalate issues to the program manager.

System Type Recommendations

- E-bikes are the primary vehicle type, with the option to include manual bikes and/or e-scooters as determined by individual jurisdictions

- Hybrid or dockless system types are preferred given their ease of implementation and flexibility of operations when considering a pilot program. However, the results of the feasibility analysis, best practices memo, and goals of the program indicate that multiple system types could be successful in San Mateo County. The peer system comparison, for example, (see the Best Practices Memo for more information) showed a hybrid, docked, and/or dockless system can be successful for a regional program. The system type, therefore, will depend on level of funding available and interest from operators. See Appendix A for more information about the pros and cons of different system types.

Costs and Funding Recommendations

- Procure through a competitive RFP a private operator responsible for self-financing and operating the system.
- Public costs would be limited to the cost of procurement, oversight, and contract management and could be partially recouped through a permit fee.
- Opportunity to negotiate a program subsidy in return for operator guarantees such as the equity pricing program, caps on user fees, or certain geographic operating requirements.

Plan Development Recommendations

- **Phase 1 Pilot Program**
  - The study team envisions that the pilot would run for one-two years, with participating jurisdictions committing to stay within that program through the duration of the pilot.
  - Will cover two of 5 Potential Pilot Program Service Areas
    - Where the service area covers multiple jurisdictions, the service area will be contiguous
  - 500 vehicles
  - Approximately 3.75 square miles per service area
  - 50 stations/hubs (if a docked or hybrid system is chosen)
    - 1.6-2.0 designated parking spots per bike
    - 16 hubs per square mile in high density locations
- *System Expansion*
  - The pilot is an opportunity for the county to refine its micromobility management approach. At the end of the pilot period, the study team envisions the county would make recommendations for and adopt a revised program management structure that incorporates lessons learned from the pilot.
  - The system should expand beyond the initial Phase 1 Pilot Program service area based upon factors such as ridership, funding, infrastructure, new indicators of demand, and political will/agency capacity.
  - Following the pilot program, with the multijurisdictional contract in place, the program manager should work with the operator(s) to develop satellite programs at coastal communities, with consideration for alternate service models, such as reduced user fees and/or longer-term lending.

Other System Recommendations

Equity

- Equity Pricing Program that includes:
  - Subsidized Memberships and Income Based Discounts
  - Cash Payment Options
  - Alternative Payment Structures
  - Reduce Liability and Eliminate Hidden Fees
  - Transit Integration

- Shared micromobility rebalancing should be done by the operator on a daily basis
  - After the Pilot Phase, the system operator should reassess if rebalancing efforts need to be focused on certain locations, if there is a need to add more racks/reduce racks based on usage, if pricing incentives should be updated to support rebalancing, or if additional staff time is needed to rebalance vehicles.

Maintenance

- Maintenance protocols should be included within the service level agreement with the vendor.

Liability and Insurance

- Owners and operators can limit liability related to shared micromobility systems in various ways, including:
  - Purchasing insurance
  - Requiring users of the program to sign waivers releasing the program from liability for injuries
  - Keeping the shared micromobility vehicles well-maintained
  - Educating users about use of the shared micromobility vehicle and providing safety training
- Vendors should be contractually required to purchase and maintain insurance coverage pertinent to the operations and provision of shared micromobility service.

Impact of No Action

While San Mateo County could elect to move forward with a structure other than the proposed, there are several negative governance outcomes of continuing with the current micromobility status quo:

- The inability to manage or address inter-jurisdictional micromobility issues.
- All procurement, management, and oversight responsibilities falling to individual jurisdictions, resulting in an increased and redundant workload burden on jurisdiction staff.
- Lack of coordination in planning, procurement, and negotiations between jurisdictions and vendors.
- Creation of a fragmented micromobility market where users may be restricted to making trips within a specific town or city. Users may have to switch between operators based on where they are travelling.
- Less predictability regarding user pricing and riding rules.
- No established regulatory or procurement standards from which jurisdictions can build their micromobility program . Individual jurisdictions may struggle to attract the same number and quality of vendors as a multi-jurisdictional program could.

Draft Implementation Recommendations

The following report provides a recommended approach to developing and implementing a regional shared micromobility program in San Mateo County. The proposed approach is based on technical findings from the study, as well as stakeholder input gained through meetings and presentations and one-on-one interviews with potential partners. C/CAG also conducted a public survey to gauge community interest and preferences related to shared micromobility. The survey was available from May 12, 2022 to June 17, 2022 and was promoted through C/CAG Board Members, Committee Members, Ad Hoc Advisory Group Members, City Council Members, the C/CAG website (link), and community partners (including the nonprofit Thrive, which publishes a newsletter).

Governance and Management

Developing an effective governance/management model is essential to implementing a micromobility program in San Mateo County. The governance structure plays a large role in shaping a micromobility program, from determining how responsibilities are distributed among partners, to establishing a process for decision-making and oversight.

There are a number of different ways that micromobility programs are organized, with several options for the governance of a program to be tailored to local circumstances. To help have a clearer sense of the region's governance needs and capacities, the study team conducted one-on-one interviews with a wide array of regional partners including transit operators, cities, non-profit organizations, regional agencies, and San Mateo County. Input from those meetings, along with the body of existing work conducted in this study, allowed the team to refine and better define governance options for San Mateo County.

Based on discussions with stakeholder across the region as well as research on best practices in regional micromobility programs, **this study envisions a multi-jurisdictional micromobility program in San Mateo County where operations would be contracted out to one or more private, third-party operators. Management and oversight responsibilities would be of a program manager, and individual jurisdictions could opt into the program and retain certain responsibilities and control over the program within their local jurisdictions. The recommended program manager is C/CAG.** This study team recommended this model based on the factors discussed below.

Key Considerations Shaping Governance Approach

In our conversations with regional stakeholders and market research, three key issues were identified that ultimately shaped the study team's recommended governance approach. These three issues highlight the benefit of collective management of micromobility while also accommodating the needs of individual jurisdictions:

Reduce Barriers for Jurisdictions Interested in Implementing Micromobility

As highlighted in the feedback gathered during the regional outreach process, it is important to eliminate or reduce the barriers jurisdictions face in implementing a micromobility program through its governance structure. In the absence of a county-wide approach to micromobility, responsibility for implementing micromobility falls solely on local governments, requiring them to wholly rely on their own resources, expertise, and staff capacity. The status-quo poses a barrier for county-wide program implementation for three main reasons:

- **Duplication of Effort:** Jurisdictions would be duplicating effort by developing their own micromobility regulations and procurement. A single entity could more efficiently manage a micromobility program that covers several jurisdictions.

- **Expertise Gap:** Most jurisdictions in San Mateo County have never managed or regulated a micromobility system, and each relatively small jurisdiction's micromobility program would find it challenging to hire and dedicate a staff person with the expertise needed to manage a program.
- **Economies of Scale:** Operators may be unwilling to operate a stand-alone program in San Mateo County's smaller communities. A single procurement could achieve a more lucrative deal with operators do to the greater size and scale.

A collective governance structure can help address these barriers to implementation by creating a program that communities can opt into. Shared management of a program would reduce the individual regulatory and oversight burden of each participating jurisdiction, and a multi-jurisdictional system would provide a scale that could make the program more appealing to micromobility operators and allow for a stronger negotiating position with those vendors than would be possible individually.

Balance Local Control with Regional Coordination

The study team also gathered that local jurisdictions feel that there is a need to strike a balance between collective action on micromobility and preserving local control. Some aspects of local governments are going to be at the front lines of a micromobility system regardless of the governance model. For example, the public will likely naturally reach out to local government departments and elected officials to resolve issues. Local governments have a responsibility to the public and will need to have the ability to be responsive to complaints. There also is a recognition in a place as varied as San Mateo County that one-size does not fit all. Communities might have specific concerns about where people ride or usage restrictions that need have the ability to be context-sensitive.

All these factors highlight a need for balancing issues of local control with the benefits of regional coordination. Micromobility providers are not regulated by the State of California. This puts issues like the number of vehicles, requirements for locking devices, and other elements of micromobility services in the control of local jurisdictions. Additionally, local jurisdictions control regulations such as parking regulation creation and enforcement, which are integral to micromobility operations. While micromobility would benefit from harmonized regulations and operating procedures across the cities and unincorporated areas of San Mateo County, such coordination will need to be voluntary and optional. The governance model needs to consider how to provide communities with the ability to respond to local complaints and the ability to customize regulations and operating requirements between jurisdictions, and local powers of enforcement over micromobility users and the operator. Additionally, the county-wide program would benefit from providing a consensus-developed template of local regulations that each local jurisdiction can adopt. More similar local regulations will allow a micromobility operator to incur less cost in meeting differing regulations and will allow users an easier to understand experience, which should support higher ridership.

Provide Customers a Seamless Journey

In the design of a micromobility program, best practices for a successful system include ensuring the system meets the needs of its users. A seamless customer experience that does not require multiple accounts, forms of payment, or different vehicles to complete a single trip can lead to higher ridership and wider system adoption. Trips often do not neatly fit within jurisdictional boundaries and users would benefit from a standardized riding experience across San Mateo County. This means the ability to use the same vehicle or micromobility device across jurisdiction lines and a consistent user experience would serve users and increase the effectiveness of the program.

Governance plays a part in facilitating a seamless journey by ensuring the program functions predictably across jurisdiction boundaries. It is in the interest of all jurisdictions that riders in San Mateo County have a positive experience on micromobility; a negative experience on one micromobility system regardless of its jurisdiction will lower the likelihood of future micromobility trips that individual might take on any micromobility system.

Program Manager / Lead

Creating a multi-jurisdictional micromobility program in San Mateo County will require identifying a program lead and champion. There are two general models for managing a multi-jurisdictional system:

- **Local management with inter-jurisdictional oversight and coordination:** Participating jurisdictions opt into a regional program and have some governance decision-making structure. In this model, local jurisdictions would manage most day-to-day responsibilities for operating the system, while major programmatic and regulatory decisions fall on the collective group. A good example of a decentralized system is Capital Bikeshare in the Washington, DC region. Each jurisdiction has its own contract with Motivate, the program operator, and a committee composed of representatives from each participating jurisdiction make collective decisions that could impact the system such as adopting new user pricing, acquisition of a title sponsor, or coordinating on bicycle replacement investments. An organization with countywide responsibilities like C/CAG could help convene jurisdictions and help run coordination activities; alternatively the program could rely solely on the participating jurisdictions to coordinate among one another.
- **Centralized management on behalf of jurisdictions:** Centralized management of a system is where there is a designated entity that manages the program. Centralized management does not mean that individual jurisdictions do not have a say in program management, just that one entity takes on a leadership role. For example, in the Bay Area, the multi-jurisdiction Bay Wheels program is managed by Metropolitan Transportation Commission (MTC) with input from individual jurisdictions. Jurisdictions also retain autonomy to direct system implementation elements like station placement. As part of this model, participating jurisdictions would have a say in how collective decisions are made and the manager would be responsible for convening an oversight group.

While either approach can work in a variety of contexts, the study team recommends a centrally managed program to best meet the needs of San Mateo County.

Benefit of a Single Program Manager

The study team recommends that San Mateo County pursue a system with a single program manager to contract and oversee the program. This recommendation is driven by several factors:

- **Simplicity:** A single entity in charge of overseeing and managing the contract is a simpler approach than decentralized management of a program. Third party operators would have a primary point of contact and single point of responsibility.
- **Number and Size of Participating Jurisdictions**: San Mateo County is comprised of over 20 jurisdictions ranging in size from just over 1,500 people in the Town of Colma to over 100,000 people in Daly City. A centralized management approach would reduce the burden placed on individual jurisdictions. While larger communities may have the staff capacity and expertise to play an active role in program management, smaller communities could effectively be excluded from a decentralized program in San Mateo County due to their size.
- **Local Champion:** Among the jurisdictions in San Mateo County, there is no clear local program lead ready to act as a county-wide champion. A single multi-jurisdictional program manager could act as the champion, helping coordinate among the jurisdictions and reach joint decisions.
- **Efficiencies of Scale with Centralized Management:** A multi-jurisdictional system under centralized management would enjoy greater efficiencies of scale compared to a decentralized program. Instead of dividing duplicative responsibilities across people in several jurisdictions, a single program manager could oversee the program. Centralized management could facilitate knowledge sharing and administrative efficiencies for the public members of the system as well as provide a more economically attractive market for a private provider.
- **Greater Negotiating Power:** A collective procurement run by a single program manager has greater negotiating leverage than a system composed of several independently negotiated contracts between jurisdictions and operators. A larger system is more appealing to operators and would likely garner a greater level of interest than a procurement at the local level. As such, the public partners and program

manager would likely be able to include program requirements such as equity-based membership subsidy and station placement, which may not be economically feasible in small, independent systems.

- **Fundraising Benefits:** A single program manager would likely be more effective at fundraising as compared to individual jurisdictions. The program manager could oversee multi-jurisdictional grant applications, which could be more competitive than individual jurisdictions competing with one another for micromobility funding. A single program manager could also take a lead on private fundraising, including sponsorships and on-system advertising, which would directly benefit from economies of scale.

Roles and Responsibilities

The roles and responsibilities of the program manager could vary based on the desires of participating jurisdictions and the collective needs of the system. Below is a matrix of primary and secondary responsibilities, with secondary responsibilities representing optional functions or functions that could be delegated to other organizations.

Table 1. Matrix of Program Manager Responsibilities

Primary Responsibilities	Secondary Responsibilities
Pre-Procurement: Form regional micromobility collective and develop mutually agreed upon operating guidelines/principles and build out a regulatory framework for micromobility. **Procurement:** Develop and execute the procurement of one or more program operators. **Coordination:** Establish a forum for participating jurisdictions and help participants come to collective decisions. **Contract Management:** Manage operator contracts and serve as a centralized point-of-contact for the vendor. **Manage Issues:** Act as an interface between the operator and jurisdictions if any operating issues arise. Work with the operator to resolve issues. **Public Communication:** Limited public engagement related to the core function of program such as attending public meetings at the behest of jurisdictions, drafting press releases, and managing press inquiries.	**Program Monitoring and Data Management:** Act as a central repository for micromobility data and reply to data requests from stakeholders. Support reporting and program monitoring. Procure monitoring software for system. **Marketing and Community Engagement:** Lead marketing and engagement or supplement work being done by program operator. Range of functions from equity-focused community engagement to integration of micromobility into existing transportation demand management (TDM) activities. **System Planning:** Support siting of micromobility hubs (if applicable). Work with jurisdictions on planning and implementing supporting infrastructure. **Fundraising and Grant Management:** Prepare grant applications and manage received grants. Oversee acquisition of sponsors and advertisers.

Based on the study team's experience working with other communities, one full-time equivalent (FTE) of staff resources is needed to manage all the listed primary responsibilities. These responsibilities could be held by one individual or distributed across multiple staff members. The resources needed for the secondary responsibilities will vary. Program monitoring and data management could be handled by the same staff FTE as the primary responsibilities, with specialized staff or contract support. Similarly, that FTE could manage some number of grant applications and grant awards with additional support from other staff or contracts.

If the program elected to do additional marketing in-house (e.g., creating a micromobility ambassador program, developing a TDM micromobility program), additional staff resources could be necessary. While the system as envisioned would not need extensive infrastructure planning, if the program manager was responsible for functions like station siting and the planning of support infrastructure (e.g., bike lanes, wayfinding), that would require support beyond the one FTE.

Types of Organizations

Several organizations could serve the role of program manager, including County-wide agencies, independent authorities, or non-profits with suitable mission alignment with micromobility. The lead organization should ideally have the following characteristics and know-how:

- Countywide scope with strong existing relationships with local jurisdictions.
- Ability to navigate local sensitivities and politics.
- Consensus-building and facilitating inter-jurisdictional communication.
- Procurement expertise and capacity.
- Project and contract management expertise, including the capability to oversee a contract, manage additional subcontractors, and fulfill contract reporting requirements.
- Expertise in planning and data management, including the ability to work with micromobility datasets, or the ability to contract for that expertise.
- Ability to effectively apply for and manage grants.
- Ability to conduct field inspections and travel between participating jurisdictions easily.

San Mateo County has several possible candidates to take a leadership role such as C/CAG, SamTrans, and San Mateo County government. Commute.org is another organization that could play a supportive role in program management but may lack the capacity for procurement and contract management. Note that these organizations are identified solely based on a technical capacity and the study team has not received any commitment from an organization to lead program implementation. Any of these organizations may have valid reasons for not taking on a management role, from staff capacity constraints to a lack of suitable alignment with organizational mission and priorities.

Depending on the characteristics the selected lead organization as well as that organization's capacity, a second regional entity could provide a supporting role in program management. For example one agency could manage the data and monitoring of the program, while another could be responsible for procurement, contract management, grant applications and management, and inter-jurisdictional communication and consensus-building. **Based upon the characteristics noted above, C/CAG is the preferred program manager.** While other agencies in county have technical capacity, the study team concluded that given C/CAG's countywide program scope, its proven ability to build consensus with partners across jurisdictional boundaries, and general support from its board on the program's ability to reduce vehicle miles traveled, C/CAG should be the program manager. Success in shared micromobility will depend on having a program that operates on a larger scale, and C/CAG has a strong record managing multi-jurisdictional programs.

Procurement

One of the key functions of the program manager is to oversee and execute the procurement of a vendor to provide micromobility services. The program manager would have to work with jurisdictions to develop a standardized procurement for the County that establishes consistent operating requirements and standards. In instances where local micromobility regulations differ substantially, participating jurisdictions would need to work together to develop harmonized regulations. While not all operating requirements need to be standardized, an interjurisdictional system should ideally standardize the following:

- Types of vehicles permitted under the contract
- Operating hours
- Whether vehicle parking will be restricted to pre-defined hubs
- Vehicle maintenance and inspection requirements
- Program pricing and fare media
- Insurance and indemnification requirements
- Operator fees and fines for violating contract terms
- Vehicle rebalancing and distribution requirements

Task 6 of this study will go into greater detail regarding program procurement and specific operating requirements, but the above list captures the types of requirements that ideally are coordinated across the system.

Number of Operators

Even the best written contract is no substitute from having a productive and effective relationship with the system operator. The success of a micromobility program depends largely on having a responsive operator who is willing to work with jurisdictions and the program manager as issues arise. As detailed elsewhere in this report, the study team recommends initiating the program as a multi-jurisdictional pilot. San Mateo County would be well served by procuring a single operator for this initial pilot instead of going with a multi-operator procurement for several reasons. A single operator means a single point of contact if there are system complaints and issues, streamlining the administrative burden. Working with a single operator may result in higher quality operations, especially in the pilot phase as kinks are being worked out. Micromobility vendors could struggle in a market split across multiple vendors which could result in decreasing the number of vehicles or reducing system resourcing, which would affect responsiveness, maintenance, and service quality. A single operator system is also appealing to a vendor, whose profit margin could be reduced if there is competition across multiple operators.

Some jurisdictions in the County currently have or will soon have their own micromobility operators. These existing operators do not have to be an impediment to joining a multi-jurisdictional system. It is common to host several micromobility operators in one jurisdiction that are subject to different management and oversight structures. For example, in places like San Francisco the regional bike share program (Bay Wheels) co-exists with a variety of private dockless scooters systems and in Sacramento, the regional operator holding the bike share contract operates alongside individually permitted micromobility operators.

Contract Length

Task 6 can discuss in more detail the pros and cons of different length contracts. For a pilot program like proposed here, the county would be well served by a shorter contract (one or two years) with one-year options for renewal. While operators often prefer longer contracts due to the stability they afford, a shorter contract gives San Mateo County more flexibility to pivot in approach if the pilot does not meet expectations.

While one of the goals of a countywide micromobility procurement is to coordinate operating requirements among jurisdictions, one-size does not fit all, and some degree of contract customization will be needed. The procurement process could allow jurisdictions to negotiate contract riders that set out additional terms and conditions so long as they do not conflict with the ability to operate an interjurisdictional system. The following types of terms could be customized to the jurisdiction:

- Delineate no-go areas where vehicles cannot be used such as specific streets, parks, or trails.
- Delineate "slow-zone" areas where the user's speed is restricted below the systemwide speed limit.
- Dictate specific enforcement policies and procedures. For example, one jurisdiction may delegate impounding of improperly parked micromobility vehicles to parking enforcement staff while another may elect to house those responsibilities with the police.
- While ideally standardized across jurisdictions, individual jurisdictions could have some latitude to set their own fines and penalties, if needed.
- Jurisdictions may want to set their own vehicle rebalancing and distribution requirements to achieving geographic and social equity objectives.

Decision-Making and Coordination

Governance Committee

The program should have a governance committee composed of participating jurisdictions, the program manager and any other key stakeholders as needed. This body would be a venue to discuss program issues, share lessons learned, and resolve problems. In developing the pilot program, the program manager and participating jurisdictions will need to establish the basic framework for the governing body. For example, how is decision making power delegated among participants? Do decisions require consensus among all members or simply a majority vote? Do all participants have an equal say or are votes reflective of jurisdiction size or share of total micromobility fleet?

Process for Escalating Complaints and Issues

Micromobility programs will inevitably generate complaints or issues from the public, such as:

- Improper parking of vehicles / blocking public right-of-way.
- Improper or unsafe usage of vehicles by users. While certain issues may require engaging the user, systematic solutions like revising no-ride areas, speed restrictions, and parking locations may be able to address these problems.
- Vehicle vandalism

The program manager and participating jurisdictions should establish a clear process for communicating and resolving complaints. Ideally the process of resolving operating issues is streamlined and efficient while reducing the burden placed on individual jurisdictions. In a micromobility program, complaints and issues may be directed to a variety of places: directly to the operator through the call center or app; to local staff; directly to the program manager; through a 3-1-1 system or similar public resource for non-emergency calls; the police; or local elected officials. To help streamline communication, all issues should be forwarded to a single entity.

The study team recommends that all issues and complaints be directed to the program operator. The program manager should be provided a copy of complaints on a regular basis (ideally daily, with a weekly and monthly aggregate metric made available as well). The program manager should have access to a database to see how any complaints were resolved. If complaints are not resolved within a pre-determined timeframe (e.g., 24-hours), the complaint should be sent directly the program manager for follow-up and resolution with the operator. If necessary, representatives from individual jurisdictions can be brought in to discuss problems.

The governance committee is another venue for any major issues to be discussed and resolved. Jurisdictions should have access to complaints being submitted to the system and a transparent understanding of the type, frequency, and resolution of complaints.

Local Responsibilities

While the goal of the proposed governance structure is to minimize the day-to-day administrative burden of the program on local jurisdictions, communities will likely want to retain some responsibilities and control over the system.

Jurisdictions help serve as the eyes and ears of the program manager. As mentioned in the previous section, jurisdiction officials will likely be the ones to receive any community complaints. Jurisdiction staff should have access to the same complaint and resolution information as the program manager to allow them to independently follow-up on any complaints.

Jurisdictions will likely want to retain some enforcement responsibilities, including the power to impound vehicles or charge fines and penalties to operators for breach of contract terms. Jurisdictions may elect to do their own system field inspections to supplant any field inspections done by the program manager.

Costs and Funding

This section outlines the costs and potential funding sources for micromobility in San Mateo County. The public cost of a program is heavily dependent on a program's business model. For example, a community can implement a micromobility program for little cost if a private operator is willing to provide a system under a permit or RFP scheme. The only public costs of such a program are any resources needed for management and oversight. On the other extreme scale, some communities elect to fully own their micromobility program and finance capital equipment and operating costs themselves. These publicly owned programs may rely on a private vendor to run the program but will reimburse the vendor for the cost of operations. In both scenarios, the total cost of operating the program may be very similar but the net cost to the public will differ substantially. To maintain clarity, the study team has focused on the net cost to the public. This memo outlines four cost scenarios to illustrate the range of program costs:

- Scenario 1: No action
- Scenario 2: Fully privately owned system with no public subsidy
- Scenario 3: Fully privately owned system with public subsidy
- Scenario 4: Publicly owned program

Cost Drivers for Micromobility

There are a range of factors that influence the cost of establishing and operating a micromobility program. **Table 2.** *Costs Associated with Micromobility Operations and Management for Micromobility Vendors and Program Managers* presents an overview of the types of costs associated with micromobility operations and management, broken down into two broad categories: fixed costs and per vehicle costs. Note that not all these costs are necessarily borne by public entities depending on the operating scenario being considered. These cost drivers are presented here to better illustrate the types of costs related to program operations.

Table 2. Costs Associated with Micromobility Operations and Management for Micromobility Vendors and Program Managers

Fixed Costs	Per Vehicle Costs
Administrative Salaries: salary for the staff responsible for contract and program management. **Technology:** cost to license software used to manage and monitor a micromobility program. **Marketing:** expenses for activities above and beyond basic marketing and community engagement, such as developing a Neighborhood Ambassador Program or integrating micromobility into a TDM Program.	**Facilities:** cost of office, garage, and storage space to house equipment and staff. **Non-revenue vehicles:** vehicles used by jurisdictional staff for program enforcement (spot checking, etc.). In addition, vehicles used by operations staff for rebalancing and in-field maintenance purposes. **Tools and equipment:** cost of tools and equipment used to maintain vehicles. **Operations Salaries:** salary for the staff responsible for operations, maintenance, and customer service. **Insurance:** Insurance policy for program to cover any liability. **Connectivity and IT:** Cost of mobile data connection and IT support.

Key Factors Impacting Program Costs

The level of investment for both the public sector and private operators is influenced most by three factors:

- Breakdown of responsibilities between the public and private sector
- Geographic distribution and scale of the system
- Regulations impacting operator profitability

Responsibilities of the Public Sector

In San Mateo County, the cost of managing a regional program will depend on what types of responsibilities the program manager or other public partners will take on versus the operator. Many of the costs listed in **Table 2.** *Costs Associated with Micromobility Operations and Management for Micromobility Vendors and Program Managers*

Fixed Costs	Per Vehicle Costs
- **Administrative Salaries:** salary for the staff responsible for contract and program management. - **Technology:** cost to license software used to manage and monitor a micromobility program. - **Marketing:** expenses for activities above and beyond basic marketing and community engagement, such as developing a Neighborhood Ambassador Program or integrating micromobility into a TDM Program.	- **Facilities:** cost of office, garage, and storage space to house equipment and staff. - **Non-revenue vehicles:** vehicles used by jurisdictional staff for program enforcement (spot checking, etc.). In addition, vehicles used by operations staff for rebalancing and in-field maintenance purposes. - **Tools and equipment:** cost of tools and equipment used to maintain vehicles. - **Operations Salaries:** salary for the staff responsible for operations, maintenance, and customer service. - **Insurance:** Insurance policy for program to cover any liability. - **Connectivity and IT:** Cost of mobile data connection and IT support.

 (notably the variable costs like facilities and operating salaries) will be on the operator, but other could be activities borne by the program manager in certain scenarios. As discussed earlier, the primary responsibilities and some of the secondary responsibilities of a program manager could be covered by approximately one FTE but any work the public sector takes on above and beyond that could require additional staff time.

The following are activities that would increase the public cost of operating a program:

- **Publicly-Owned System:** While a privately-owned and operated system licensed through an RFP process may be the operating model for the County, there are many systems in the United States that are publicly-owned, with the vendor reimbursed for the cost of operations. Under this publicly-owned model, a public-entity would purchase equipment, pay the vendor a fee to operate the program, and receive all revenue generated by the program. Public ownership introduces more costs as compared to a private model but includes more direct control of the system. Many of the benefits of a publicly-owned model could be included into a privately-owned contract if the revenue needs of the operator are met by ridership, fare structure, and subsidy.
- **Marketing and Outreach Activities:** Some communities elect to do their own marketing and community engagement above and beyond what the vendor provides. Activities like community ambassadors, learn-to-ride programs, and TDM engagement could increase upfront program operating costs but would likely have a network effect on increasing ridership, and revenue. In many cases, these costs are indirect as the actual marketing and outreach efforts are absorbed by existing organizations as part of their transportation and TDM work program.
- **Site Planning Requirements:** If the program includes fixed infrastructure like stations, planning for these locations would incur implementation costs. For example, the City of San Francisco went through a lengthy planning and community engagement around the siting of bikeshare stations when it first introduced bikeshare.

Geographic Distribution and Scale

For both the private vendor and the public sector, the geographic scale and distribution of a micromobility system have impacts on both operating costs and revenues. In general, small, dispersed micromobility systems are more difficult and costly to manage, compared to dense, concentrated systems. The more spread-out a system is, the more resources it takes for basic activities, such as rebalancing and inspections. Systems should be large enough to reach economies of scale, which allow the vendor to operate at better efficiency.

From a customer perspective, a series of small, dispersed micromobility system is more difficult to use. Most evidence suggests that customers use micromobility for shorter trips. The more spread out and difficult to use a system is, the less convenient it is for the customer to choose that mode, reducing ridership and revenue.

Operator Profitability

As private companies, micromobility vendors are responsible for their bottom line and generally want to enter into markets where there is revenue potential. This goal can run counter to the priorities of the public sector. Micromobility operating requirements, such as regulations around distribution of vehicles and the provision of equity fare structures and station citing can help ensure that a micromobility program aligns with the goals and priorities of the public sector partners. These policies come in a few different forms. For example, a private vendor may be required to rebalance vehicles daily, with a minimum and/or maximum number of vehicles allowed within certain areas of a jurisdiction, or a jurisdiction could require that that a certain percentage of an operator's fleet must be distributed within designated high priority areas (e.g., central business districts, equity areas).

However, these requirements can also negatively impact a private operator's revenues. Requiring an equitable distribution of vehicles, for example, could mean that vendors must spend extra resources to redistribute vehicles in lower ridership areas rather than concentrating all vehicles in high ridership areas, where the most revenue can be generated. Similarly, requiring an equity pass program in the fare structure to make micromobility affordable for all residents of San Mateo County, could impact overall revenue, making the County a less appealing market for vendors. A balanced approach to equity programs and independent financial analysis during the negotiating phase can help public partners reach a financially sustainable agreement with a private operator that best serves the public.

Operating requirements are a powerful tool that the public sector should use to ensure any micromobility program aligns with stated goals for the public partners. However, the potential impacts of these requirements should not be overlooked, and communities like San Mateo County may need to balance requirements with incentives and financial support. A robust equity pass program may be more feasible from the vendor's perspective if a jurisdiction does not impose other significant fees on the program that cut into revenues. As discussed in the following section on program costs, an equity pass could be funded by the program manager through subsidies paid directly to the vendor. Redistribution and rebalancing requirements can be more efficient if a micromobility system is dense and well dispersed.

Costs by Micromobility Scenario

The public costs of creating a micromobility program will vary based on the program's business model. To help illustrate this variability, the study team developed costs for four scenarios: No Action, Regional Program Oversight and Contract Management, Subsidized System, and Fully Publicly Owned System. Each scenario builds on the one(s) before it such that the costs of the Fully Publicly Owned System include the costs of a subsidized system, and the cost of a regional system with program oversite and contract management. **While the four scenarios presented provide context to micromobility costs and revenues, the study team recommends San Mateo County implement one of two scenarios: Regional Program Oversight and Contract Management or a Subsidized System. These two scenarios are consistent with the recommendations laid out in the Governance and Management section above** For every scenario, the costs are estimated assuming the system will have 500 bicycles and 50 parking locations/hubs for each pilot program service area. Based on data from peer systems, the average user fee per trip (i.e., the average revenues generated per trip) is estimated to be $3.00 for Scenario 2, Scenario 3, and Scenario 4. These user revenues could be invested back into the system to support operations. The cost of no action is largely theoretical and highlights the opportunity cost of not implementing a program. A summary of the scenarios is shown in Table 3.

Table 3. Overview of program costs by scenario

Scenario	Key Facts	Approximate Annual Subsidy	Approximate Capital Costs
Scenario 1: No Action	• No associated capital costs • No associated operating costs • Leads to duplication of effort among jurisdiction, small impact on reducing single-occupant vehicle (SOV) trips	• Unknown (would include redundant staff efforts in local jurisdictions)	• None
Scenario 2: Regional Program Oversight and Contract Management	• Minimal capital costs (about $2,500 per parking location/docking station; $125,000 for 50 mobility hubs)[1] • One FTE of resources to manage contract and program oversite ($250,000) • Potential for modest revenues through permit fees ($20 to $100 per vehicle per year; $20,000 to $50,000, or $0.10 per trip) to offset costs • Annual program evaluation ($50,000)	• $200,000 - $230,000 for program management and oversight, net of permit revenue. • $50,000 annually per year for program evaluation	• $125,000 up front for installation /construction of hubs

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[1] The number of mobility hubs is based on best practices in peer systems. In general, for fully docked systems, stations should be between one-quarter and one-half mile apart in high ridership areas. In hybrid systems, stations can be less dense, since customers do not need to park vehicles at a hub. The study team took a conservative approach to estimating the cost of hubs; the participating communities may need fewer hubs that require little or no fixed infrastructure.

Scenario	Key Facts	Approximate Annual Subsidy	Approximate Capital Costs
Scenario 3: Subsidized System	• Minimal capital costs (about $2,500 per parking location/docking station) • One FTE of resources to manage contract and program oversite ($250,000) • Subsidies of $100,000 annually to the vendor to cover costs associated with operations and maintenance of the program[2] • Potential for modest revenues through permit fees ($20 to $100 per vehicle per year; $20,000 to $50,000, or $0.10 per trip) to offset costs • Annual program evaluation ($50,000)	• $300,000 - $330,000 for program management and operator subsidies, net of permit revenue • $50,000 annually for program evaluation	• $125,000 up front for installation /constructi on of hubs

[2] Based on an assumed trip per vehicle per day of 1.0 and the operating subsidy paid by the program managing public entity to cover operating shortfalls and the added cost of contract requirements ($0.55 subsidy per vehicle * 500 vehicles * 365 days per year).

Scenario	Key Facts	Approximate Annual Subsidy	Approximate Capital Costs
Scenario 4: Fully Publicly Owned System	• Major capital investment ($2,500 per vehicle and $2,500 per parking location/docking station, 50 locations) • One FTE of resources to manage contract and program oversight plus operating fee with vendor (about $200 per vehicle per month) • 25 percent cost recovery from user fees. • Potential for additional revenue from advertising, sponsorships, and local operating support not counted. • Replacement of 20% of the fleet per year due to state-of-good repair (e.g., end of life replacement, theft, vandalism). • Annual program evaluation ($50,000)	• $650,000 annually in operating ($1,200,000 operating costs - $550,000 revenue from user fees)[3] • $50,000 annually for program evaluation	• $250,000 in annual state-of-good repair costs • $1.6 million in start-up capital costs

While all the scenarios require some level of financial commitment, there may be opportunities to obtain funding from both public or private partners through sponsorships. Potential program sponsors include Peninsula Clean Energy (PCE), Meta, and Google.

No Action

The No Action scenario assumes that no regional micromobility program will be implemented in San Mateo County. Jurisdictions will continue to implement micromobility on their own in a piecemeal fashion, leading to the creation of a fragmented micromobility market, as discussed in the **Impact of No Action** section.

While costs for maintaining the status quo are difficult to capture, this scenario could result in environmental costs. No coordinated micromobility program means fewer travelers will switch from single occupancy vehicles to an alternative mode, including transit accessed by micromobility, resulting in a more limited decline in emissions compared to implementing a regional program.

Regional Program Oversight and Contract Management

The Regional Program Oversight and Contract Management Scenario envisions a multi-jurisdictional micromobility program where operations would be contracted out to one or more third-party operators, as described in the discussion of governance above. Under this scenario, jurisidctions would opt into a regional program with a standardized regulatory framework. A program manager would coordinate across jurisidctions.

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[3] Operating costs and revenues are estimated based on revenues for peer systems. This figure assumes one trip per vehicle per day for a system of 500 vehicles with average user revenues of $3.00 ($3.00 * 500 vehicles * 365 days per year). The operating cost figure assumes $200 per vehicle per month ($200 per vehicle per month * 500 vehicles * 12 months per year).

Under this scenario, there would be no public funding for the purchase and maintenance of vehicles thereby eliminating the majority of capital costs. If the system has parking locations or hubs, the public sector may be involved in the site planning and/or construction of these hubs. This investment is minimal and likely not more than $2,500 per location for paint and bollards. Investments in hub construction and site planning fees typically fall on the program manager who generally have a greater vested interest in ensuring clear and orderly parking locations. Often permit fees can be invested into hub construction. Some programing and operating costs are associated with this scenario. Approximately one FTE of resources would be required to take on the primary responsibilities listed in Table 1.

Jurisdictions may be able to collect some modest revenues from the micromobility vendor through the collection of fines and penalties levied on the vendors for failure to comply with micromobility regulations. These revenues could be invested directly in the micromobility system to help cover program costs or could be distributed to participating jurisdictions to make infrastructure improvements that would support the program.

Subsidized System

The Subsidized System builds on the Regional Program Oversight and Contract Management scenario but assumes that the participating jurisdictions will provide a subsidy to the vendor to reduce the operator's financial burden, allowing for lower fares to the public and operations practices that can include goals other than maximizing profit. The subsidy gives the jurisdictions a greater financial stake in the regional program and helps ensure that regional micromobility goals are met. The subsidy could be used to fund an equity pass program or it could serve as an incentive for a vendor to remain in a market despite uncertainty in ridership.

Like with the Regional Program Oversight and Contract Management scenario, one FTE of resources will be required for program management and oversite, with the potential for up to one additional FTE of resources to take on secondary responsibilities. Modest revenues may also be gained through fines and penalties.

Unlike the Regional Program Oversight and Contract Model, however, in the Subsidized System scenario, there would be a direct subsidy to the vendor when average daily use of vehicles falls below a certain threshold. This subsidy reduces the vendor's financial risk to operate the system and can help encourage stability and incentivize the vendor to operate in a less lucrative market. The exact value of the subsidy is variable and based on contract negotiations between the micromobility program manager and the vendor. In Sacramento, SACOG, the micromobility program manager pays Lime, the micromobility vendor, a subsidy between $0.35 to $0.70 per active vehicle in service per day, depending on the trips per vehicle per day. This equates to a subsidy of approximately $100,000 a year for a system with 500 vehicles and 1 trip per vehicle per day. This subsidy could go up or down depending on the number of vehicles in service and the average daily use of the vehicles.

The subsidies could also go both ways, such that when the micromobility system reaches a certain threshold of average daily use, the private vendor could share revenue with the public partners. Like with the subsidy to the vendor, the subsidy to the public partners would be variable and subject to negotiations; however, peer systems have earned up to $0.05 per trip when daily uses reach a specified threshold. This can result in approximately $3,000 in revenues per month that can be invested into the micromobility program.

Fully Publicly-Owned System

The Fully Publicly-Owned System would provide the most public control over a micromobility program in San Mateo County. Like the Regional Program Oversight and Contract Management and Subsidized System scenarios, in the Fully Publicly Owned System, the jurisdictions would contract micromobility operations out to a third-party, but the public partners would maintain ownership of all equipment, similar to how Capital Bikeshare in Washington, DC operates today.

Unlike the previous scenarios, where the vendor owned and maintained the equipment, in the fully publicly-owned system, the public partners would own all vehicles and would be financially responsible for their maintenance. Vehicles (e-bikes and scooters) cost approximately $2,500 each, and the initial investment of 500 vehicles would cost about $1.6 million. The annual cost of maintaining vehicles remains fairly low until the vehicles reach the end of their useful lives and need to be replaced; e-bikes have an estimated useful life of about eight years and scooters have an estimated useful life of about four years. In general, state of good repair costs should total about 20 percent of the initial capital investment in the program once vehicles reach the end of their estimated useful life.

In addition to vehicles, there would be minor investments to parking locations/hubs. Like with the other scenarios, jurisdictions could assume these parking locations would cost up to $2,500 each for paint and bollard installation. A system with 100 parking locations with space for 10 vehicles at each would cost about $250,000 to install.

In this scenario, operations would be contracted out to a third party; however, because the system is fully publicly owned, the jurisdictions would be responsible for covering all costs of operations. On average, the jurisdictions could expect to pay approximately $200 per vehicle per month as part of their operating agreement with the vendor. For 500 vehicles, this would total approximately $1.2 million annually, but would vary based on ridership and system characteristics. This estimate accounts for the administrative costs to procure and manage the program, which, like in the other scenarios, equates to approximately one FTE in resources.

These costs of operating the system would be offset by user revenues; the County could expect to earn about $550,000 annually through directly generated user revenues, leaving a gap of about $650,000 that would need to be covered.[4] Revenues from advertising, sponsorships, and grants, as well as funding directly from participating jurisdictions could fill this gap.

Funding Options

Funding requirements will vary depending on the type of micromobility program implemented; however, the sources of funds are likely to remain consistent across micromobility program types. The primary funding options include:

- Funding directly from participating jurisdictions
- Development proffers/subsidy
- Advertising and sponsorships
- Grant funding

These funding options could be used to cover the costs of both capital and operating program needs. Unless the regional micromobility program is fully publicly owned and operated, the participating jurisdictions will not be responsible for purchasing any capital equipment, like vehicles, which represent the largest up-front cost of publicly-owned micromobility programs.

Funding Directly from Participating Jurisdictions

One of the major funding sources of many large regional micromobility systems is through direct contributions from participating jurisdictions. These funds could be allocated through a jurisdiction's general fund as part of their annual budgeting process. Funds could also be directly generated through a special tax, fines, or parking enforcement. The level of funding each participating jurisdiction is responsible for can vary depending on a variety of factors. Most peer systems base funding per jurisdiction on the number of vehicles, docks, or stations.

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[4]*Operating revenue based on ridership and average revenue assumptions of one trip per vehicle per day for a system of 500 vehicle with average user revenues of $3.00. The operating cost figure assumes $200 per vehicle per month.*

Development Proffers

A common method for funding micromobility programs is through development proffers, also referred to as community benefit agreements. Proffers are defined as a contract between a developer and a community-based organization representing resident's interests that requires the developer to provide specific amenities and/or mitigations to the local community or neighborhood. These amenities aim to offset the impact of the new development. Through a proffer, a developer could fund the installation of a micromobility parking hub on the property of a new development or agree to contribute funds to the operations of a micromobility program to account for new traffic coming to an area because of a development.

Permit Fees

Program operations can also be directly subsidized by permit fees. Many places with micromobility programs require permitted operators to pay a permit application fee as well as annual per-device fees to help cover program management costs. In San Jose, for example, each vendor applying for a permit to operate in the City must pay an annual micromobility permit application fee of $1,953, an annual fee of $97 per vehicle in operation, and a $10,000 property repair and maintenance deposit.[5] In San Francisco, each vendor applying for a permit to operate in the City must pay an application fee of $5,394. Selected vendors must also pay an annual permit fee of $38,340 and $200 for every two vehicles permitted to operate.[6] While permit fees can provide a steady revenue stream to offset the costs of a micromobility program, they can also be a disincentive to vendors. As San Mateo County is expected to generate less demand average ridership demand than San Francisco, permit fees might need to be lower to compensate for the lower revenue potential.

Revenue Sharing

In some rare occasions, program managers have entered into revenue sharing agreements with private micromobility vendors. In Sacramento, for example, Lime, the micromobility vendor shares revenue ($0.05 per trip) with the program manager when trips per vehicle per day on Lime's scooter fleet rises above a certain threshold. While this revenue sharing is a benefit, it cannot necessarily be relied upon as a regular source of funding for a micromobility program.

Advertising and Sponsorships

Advertising and sponsorships represent two major sources of private funding for micromobility programs. Perhaps the largest potential source of private funding for a micromobility system is a title sponsor. Title sponsorship agreements last for several years, however; they do require some degree of branding exclusivity. A title sponsor would pay to have their branding and name on vehicles and parking hubs/stations. Most large micromobility systems have a title sponsor, such as New York's CitiBike (Citi Bank), Philadelphia's Indego (Independence Blue Cross), and Portland's Biketown (Nike). In the Bay Area, Ford Motor Company previously provided $50 million to Bay Area Bike Share (now Bay Wheels) to help the system expand from 700 vehilces to 7,000.[7] A mid-sized Midwestern city received $500,000 over 5 years from a private foundation's title sponsorship of a system that launched with approximately 100 bikes.[8] Title sponsorships can also come from public agencies. For example, when Capital Metro in Austin initially signed on as a partner to MetroBike, the city's bike share system, they did so largely as a funding partner. Some micromobility programs also have station and bicycle sponsors, which provide smaller scale funding, compared to a title sponsor.

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[5] *City of San Jose, Micromobility Vendor Page, https://www.sanjoseca.gov/your-government/departments-offices/transportation/micro-mobility/micro-mobility-vendor-page.*
[6] *San Francisco Municipal Transportation Agency, Powered Scooter Share Permit Program, https://www.sfmta.com/projects/powered-scooter-share-permit-program.*
[7] *Bryan Goebel (September 9, 2016), "The Bay Area's Expanded Bike-Share System—Brought to You by Ford" KQED, https://www.kqed.org/news/11079980/the-bay-areas-expanded-bike-share-system-brought-to-you-by-ford.*
[8] *Alta Planning + Design (private communication, May 2018)*

Some micromobility programs can also generate private funding through advertising on stations and/or bikes. While advertising can be limited depending on a jurisdiction's outdoor advertising regulations, advertising revenues have the potential to provide a steady stream of revenue for program operations. The responsibility for securing sponsors can will depend on which program scenario is implemented.

Grants

Grants provide another mechanism for funding micromobility programs through public sources. These grants can cover both the operating and capital costs of implementing and operating a micromobility program. The Infrastructure Investment and Jobs Act (IIJA), passed in November 2021, expanded rules around a number of federal transportation programs and established new programs that provide both capital and operating funds for micromobility. These sources are presented in Table 4.

Table 4. Federal Funding Sources

Funding Source	Description
Transportation Alternatives Program (TAP)	The Transportation Alternatives Program (TAP) represents 10 percent of each state's Surface Transportation Block Grant program funds and can be used to fund a variety of projects, including micromobility projects.[9]
Congestion Mitigation and Air Quality Improvement (CMAQ) Program	Administered through the Federal Highway Administration, CMAQ funds are available to state and local governments for transportation projects that help meet the requirements of the Clean Air Act by reducing congestion and improving air quality.[10] Eligible programs include pedestrian and bicycle projects, transit improvement programs, congestion reduction and traffic flow improvements, and funding for transportation demand management programs. For micromobility, CMAQ funds can be used for capital and operating costs as well as to fund programs to increase system equity.[11]
Carbon Reduction Program	Part of the IIJA, the Carbon Reduction program can be used to fund the planning, design, and construction of on- and off-road active transportation facilities as well as right-of-way improvements. For micromobility, the funds can be used for complete street designs that integrate micromobility infrastructure, such as docking stations and/or protected lanes.[12]
Active Transportation Infrastructure Investment Program	Part of the IIJA, the Active Transportation Infrastructure Investment Program provides funding for active transportation projects and can be used to fund micromobility equipment (stations and vehicles) as part of active transportation networks.[13]

In addition to federal grants, grants are available at the state and local level to help fund micromobility programs, as shown in Table 5.

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[9] *Jackson Pierce (2022), "What does the new infrastructure law mean for micromobility?" Transportation for America, https://t4america.org/2022/02/23/the-new-infrastructure-law-micromobility/.*

[10] *Federal Highway Administration, "Congestion Mitigation and Air Quality Improvement Program." https://www.fhwa.dot.gov/fastact/factsheets/cmaqfs.cfm.*

[11] *Jackson Pierce (2022), "What does the New Infrastructure Law Mean for Micromobility? Transportation for America, https://t4america.org/2022/02/23/the-new-infrastructure-law-micromobility/.*

[12] *Jackson Pierce (2022), "What does the New Infrastructure Law Mean for Micromobility? Transportation for America, https://t4america.org/2022/02/23/the-new-infrastructure-law-micromobility/.*

[13] *Ibid.*

Table 5: State and Local Funding Sources

Funding Source	Description
Clean Mobility Options Voucher Program	Facilitated by the California Air Resources Board, this program offers awards of up to $1 million to develop and launch zero-emission mobility projects, including bike and scooter sharing. To be eligible, a project location must be in a disadvantaged community, an AB 1550-designated low-income community, or is within federally recognized tribal boundaries.[14]
San Mateo County Transportation Authority (SMCTA) Transportation Demand Management and Bicycle and Pedestrian Programs	SMCTA's Transportation Demand Management and Alternative Congestion Relief programs promote transit and other forms of community to reduce the use of single occupancy vehilces. Both Millbrae and Burlingame have applied for grants from SMCTA to operate their micromoblity programs. [15]
California Transportation Commission Active Transportation Program	Established in 2013, the Active Transportation Program stipulates that $100 million of revenues from the Road Maintenance and Rehabilitation Account be available for active transportation projects. Eligible projects include infrastructure and non-infrastructure projects that: increase the proportion of trips accomplished by walking and biking, increase the safety and mobility of non-motorized users, advance the active transportation efforts of regional agencies to achieve greenhouse gas reduction goals, and enhance public health. The program aims to fund projects that provide a broad spectrum of projects to benefit many types of active transportation users as well as disadvantaged communities. [16]
Bay Area Air District Transportation Fund for Clean Air	Established in 1991, the Transportation Fund for Clean Air, provides grant funding to projects that reduce on-road motor vehilce emissions. To be eligible for funding, a project must be located within the Air District's jurisdiction and must achieve a surplus emission reductions.[17]

Plan Development

A shared micromobility system can be implemented in multiple phases, with an initial service area for system launch and subsequent system expansion. The service area is a designated boundary within which a shared micromobility system operates. The first phase of a shared micromobility system provides the opportunity for residents and visitors to get comfortable with small-scale shared micromobility. This can help build support for bike and/or scooter share and bike infrastructure before the system expands to other neighborhoods and/or jurisdictions.

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[14] *Clean Mobility Options, https://cleanmobilityoptions.org/.*
[15] *San Mateo County Transportation Authority, https://www.smcta.com/projects-programs/*
[16] *California Transportation Commission, Active Transportation Program, https://catc.ca.gov/programs/active-transportation-program*
[17] *Bay Area Air Quality Management District, TFCA Regional Fund, https://www.baaqmd.gov/funding-and-incentives/funding-sources/regional-fund.*

Based upon prior results and analysis—the Feasibility Analysis, Best Practices review, coordination with the Ad Hoc Advisory Group, and the program vision, goals, and objectives—the study team recommends two phases for the shared micromobility system in San Mateo County: the initial Pilot Phase and the expanded Countywide System.

Phase 1 Pilot Program Recommendations

Methodology for Identifying the Potential Pilot Program Service Areas

This analysis aims to find potential areas in San Mateo County that are best suited for an initial shared micromobility pilot program. This analysis, consistent with the Feasibility Analysis, took into account characteristics that aim to address the program vision and goals and includes: equity focus areas, proximity to transit, proximity to barriers, and estimated micromobility demand. For more information about each of these factors see the Feasibility Memo.

In addition to the characteristics used in the analysis, political support should be taken into consideration when choosing an area for the initial pilot program. (For a list of supportive jurisdictions–those that have a plan that supports shared micromobility either as a goal, objective, policy, or recommendation–see the Task 2.6 Feasibility Memo.)

A 30 acres hexagon grid, covering the whole county was associated to the characteristics in **6.** Each hexagon approximates the typical walkshed of a micromobility station or hub. As previously mentioned, system type has not been chosen, however, the hexagon represents the distance one can reasonably expect a shared micromobility user to walk between a shared micromobility vehicle and their destination.[18]

Table 6. Pilot Study Characteristics and Scoring

Characteristic	Method + Scoring of Association of Hexagon	Weight
Equity Focus Areas (EFA)[19]	• Hexagon in EFA = 1 • Hexagon not in EFA = 0	25%
Proximity to Transit[20]	• Within ½ mile of commuter rail = 1 • Within ¼ mile of high frequency transit = 0.5	15%
Proximity to Barriers	• Within 500ft of barrier = 0 • Within ¼ mile of barrier = 0.5 • More than ¼ mile away =1	10%
Demand	• Percentile Rank	50%

Once the hexagons were associated with each characteristic, an overall score was calculated for each hexagon using the weights shown in **6**. These results are visualized in **Figure 1,** which demonstrates the relative score of each hexagon. The potential pilot program services areas show the highest concentrations of high scoring hexagons.

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[18] *The goal of these hexagon grids is to score all general locations and enable average scores to show prioritization results by different geographies. The benefit of this unit of analysis is each area under study is equal in size, and has a uniform shape that is known to work well for spatial sampling.*

[19] *Equity Focus Areas are consistent with the methodology used in the 2021 C/CAG San Mateo County Comprehensive Bicycle and Pedestrian Plan.*

[20] *Commuter rail includes Caltrain and BART. High frequency transit includes buses with 15 minute headways.*
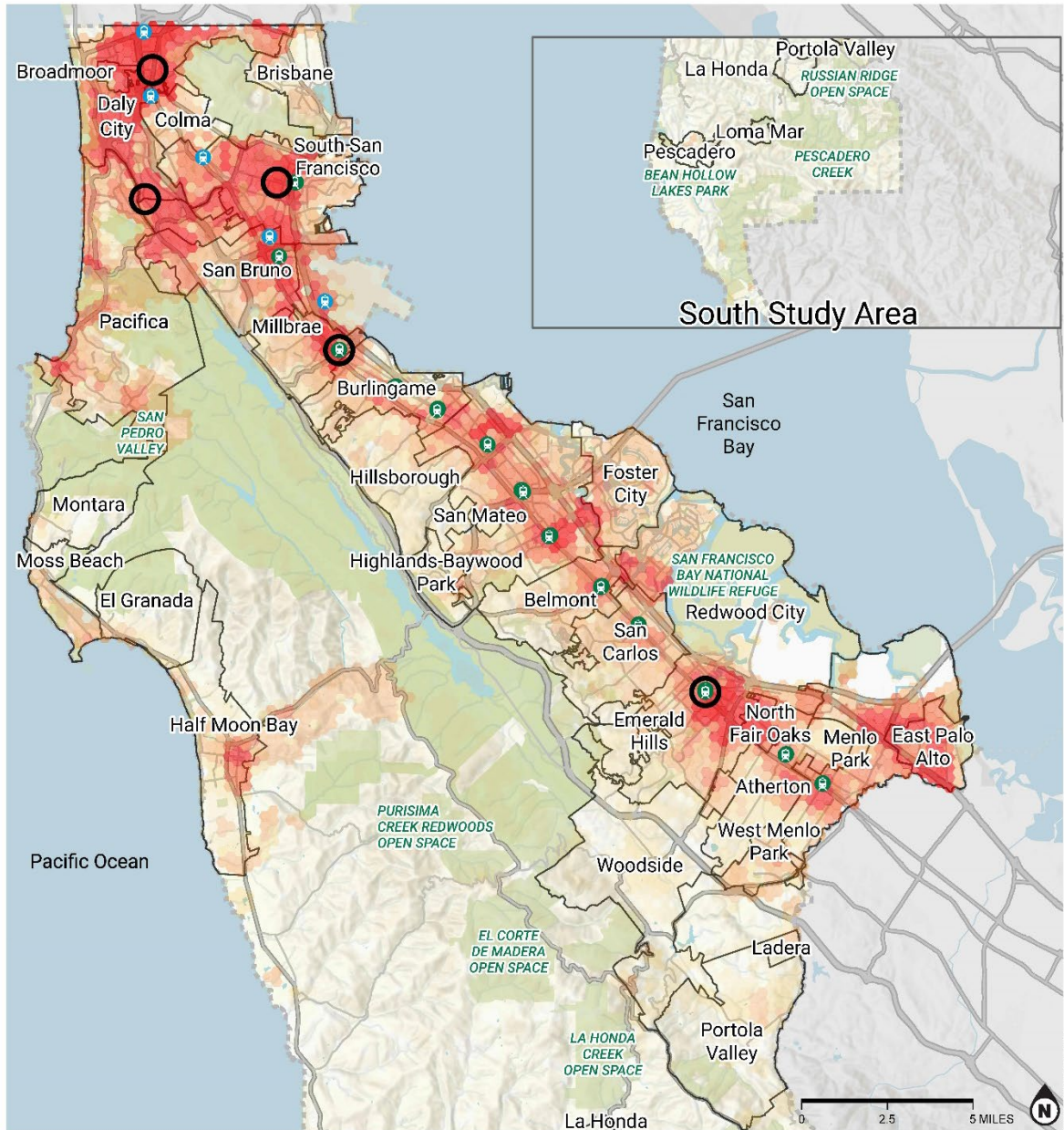
Figure 1 shows the five top scoring locations, in no particular order, for San Mateo County's shared micromobility pilot program. This study **recommends two of the five locations** be selected for the pilot. The five potential service area locations are meant to guide decision-making for an appropriate pilot program. Each location contains multiple jurisdictions, so the pilot can test out the proposed governance structure across jurisdiction boundaries. The chosen pilot program service area should have jurisdictional support from all jurisdictions within the pilot area. The potential pilot program service areas include:

- **Redwood City & North Fair Oaks:** This potential pilot location covers areas of both Redwood City and North Fair Oaks. Within the areas are a number of restaurants and stores, a downtown district and medical facilities. Additionally, the area contains a Caltrain station, scored high in the demand analysis, and includes equity focus areas in both jurisdictions. See the approximate pilot service area below.
- **Daly City, Pacifica, South San Francisco, & San Bruno:** This pilot area includes sections of four jurisdictions: Daly City, Pacifica, South San Francisco and San Bruno. This area contains equity focus areas, multiple commercial areas, Skyline College, and scored relatively high in the demand analysis.
- **Daly City, Broadmoor, & Colma:** This pilot project area serves both Daly City, Broadmoor, and Colma. This area includes the Daly City BART station, Colma BART station, many businesses along Mission Street, and scored high in the demand analysis. The majority of the area is an equity focus area. See the approximate pilot service area below.
- **South San Francisco & Unincorporated San Mateo County:** Although this recommendation would only serve South San Francisco and a small portion of unincorporated San Mateo County, the number of businesses and relative scores of the hexagons in the area make it an appealing potential location. This area has a Caltrain station, the many businesses in downtown South San Francisco, scored well in the demand analysis, and is an equity focus area.
- **Millbrae & Burlingame:** This pilot area includes Millbrae and the northern border of Burlingame. This area has a Caltrain station, includes an Equity Focus area, many businesses along Broadway in Millbrae, and a medical center and businesses along Camino Real in Burlingame. The City of Millbrae and City of Burlingame recently procured a vendor for a joint shared micromobility program, with Burlingame as the lead.

While Coastal communities in San Mateo County were not included as one of the five potential pilot program service areas, they should be considered as part of the program service area expansion. The results (Figure 1below) show areas along the coast that scored well—such as Half Moon Bay and Pacifica—but they are smaller areas that would not be well suited for a pilot program. See below for more information about recommended pilot program size, coverage, and station/hub density.

Figure 1. Map of Prospective Pilot Areas

PROSPECTIVE
PILOT AREAS

SAN MATEO COUNTY
SHARED MICROMOBILITY
FEASIBILITY STUDY

alta

PROSPECTIVE PILOT AREAS & SCORE

⭕ Prospective Pilot Areas

🟥 Higher Score
🟧
🟧
🟨 Lower Score

DESTINATIONS + BOUNDARIES

🔵 BART Station
🟢 Caltrain Station
┈ County Boundary
▭ San Mateo County City Boundaries
🟦 Water
🟩 Park

Data provided by the 2021 C/CAG Comprehensive Bicycle and Pedestrian Plan (2021), Caltrans State Highway Network (2021), San Mateo County GIS Open Data (2021), ESRI Living Atlas (2021), American Community Survey 5 Year Estimates (2019), Longitudinal Employer-Household Dynamics (2019), Bureau of Transportation Statistics Docked Bikeshare Ridership (2021), US Environmental Protection Agency Smart Location Database (2021),and OpenStreetMap (2021).

Regardless of system equipment type, the minimum number of recommended shared micromobility vehicles for a for each of the chosen pilot program service areas in San Mateo County is 500 vehicles. A system with less than 500 vehicles will not be able to cover multiple jurisdictions at an adequate density of vehicles (see vehicle density standards below). Each pilot program service area should be contiguous when covering multiple jurisdictions. Gaps within the service area make it harder for users to navigate the systems and for operators to rebalance the system.

Stations and/or Hubs

Should the program include a docked or hybrid system type, the minimum number of recommended shared micromobility stations/hubs should be 50 stations/hubs. The following should be considered when determining the density of stations and/or hubs:

- The industry standard for providing parking capacity for bike share ranges from 1.6-2.0 designated parking spots per bike. A higher number of racks per bike reduces the likelihood of hubs reaching full capacity, which reduces out-of-hub parking and makes for a better and more reliable user experience.
- Within higher demand areas–such as downtowns–industry best practices suggest that bikes or bike hubs should be placed within a 3 to 5-minute walking distance of one another, corresponding to approximately a quarter mile. This represents a hub density of roughly 16 hubs per square mile. For lower demand locations, the inclusion of the hybrid system with vehicles that can lock to a bike rack anywhere in the service area allows for hubs to be farther apart, as users will have the option to park at a rack near their destination. The project team recommends hubs in areas of higher demand have more vehicles and more racks, while hubs in areas of lower demand have fewer vehicles and fewer racks.

Service Area Expansion

Shared micromobility service expansion can be accomplished either as a single large-scale system expansion or incremental installation of hubs as funds become available.

Conditions for system expansion

It is not necessary to expand all at once. The timing and size of the expansion should consider the following factors:

- **Ridership:** High system ridership—over 1 trip per vehicle per day—may indicate the system is ready to expand.
- **Funding:** Identifying additional funding from sponsorships, grants, or operational funding will be necessary to determine the timing and size of system expansions.
- **Infrastructure:** As new bike infrastructure is implemented, system expansions could be coordinated with the arrival of new facilities that provide safe connections for people riding micromobility devices. Space for shared micromobility can be included in the design of new infrastructure; for example, a bike share station could serve as a separation device in a protected bike lane, or a shared-use path could include additional bike racks for parking micromobility vehicles. Additionally, planning for higher usage of bikeways may result in different engineering to accommodate more and a wider variety of users than if micromobility is not planned.
- **New Indicators of Demand:** Shared micromobility system expansion could be implemented to respond to new development, changes in land use, or expansion of transit service.
- **Political will/agency capacity:** Above all, shared micromobility system expansion will depend upon the political will and the capacity of the managing agency and its public partners.

Following the pilot program, with the multijurisdictional contract in place, the program manager should work with the operator(s) to develop satellite programs at coastal communities, with consideration for alternate service models, such as reduced user fees and/or longer-term lending.

The program manager will work with the operator, local jurisdictions as well as stakeholders such as Commute.org and Midpeninsula Regional Open Space District to address coastside satellite programs.

Areas for expansion should consider the following:

- The other 3 potential pilot program service areas described above (Daly City, Pacifica, South San Francisco, & San Bruno; South San Francisco & Unincorporated San Mateo County; Millbrae & Burlingame).
- Expansion to jurisdictions adjacent to the initial Phase 1 Pilot Program
- Expansion to the coastside, including:
  - The City of Half Moon Bay
  - The City of Half Moon Bay and Unincorporated San Mateo County to provide access beyond the coastside's populated areas to Midpeninsula preserves including Purisima, County parks, and State Park destinations. This aligns with C/CAG's Program goal to support tourism opportunities, and provides an opportunity to partner with visitor destinations on the coastside to provide a convenient mode to get to destinations.
- Other high-scoring areas from the pilot analysis, such as:
  - East Palo Alto / Menlo Park
  - San Mateo / Foster City
  - San Bruno / Millbrae / South San Francisco

If an existing program already exists in any of these jurisdictions—such as Millbrae and Burlingame—the jurisdictions and governance committee should negotiate an agreement to combine the programs, wait until the existing program ends and the jurisdiction(s) can relaunch shared micromobility as a participating member of the pilot program, or postpone expansion until one of those options is possible.

Pricing Considerations

While the selected operator may have their own business model, the public partners can consider requiring equity pricing considerations (for more information refer to the Task 4 Best Practices Memo) such as:

- Subsidized Memberships and Income Based Discounts
- Cash Payment Options
- Alternative Payment Structures
- Reduce Liability and Eliminate Hidden Fees
- Transit Integration

Innovative and cost-effective bike rebalancing strategies

Rebalancing is a critical element to the success of shared micromobility operations and positive user perception. It is important to implement strategic redistribution of vehicles to ensure that locations have the appropriate number and are not over or undersupplied for long periods of time. Shared micromobility rebalancing should be done by the operator on a daily basis.

Rebalancing can be built into the system by incentivizing riders to park at designated hubs and bike racks or else fees will incur. It is typical for hybrid systems to charge a small fee for users to lock vehicles at locations outside the designated hubs, and a larger fee for vehicles that are parked outside of the designated service area. For example, the operator can prioritize certain locations to ensure that no one location is oversupplied. Another strategy is to reward user behaviors by encouraging users to park vehicles at a hub that has more available racks. Credits can also be issued to users who return vehicles to popular hubs, reducing the need to deploy people to rebalance the fleet.

After the Pilot Phase, the system operator should reassess if rebalancing efforts need to be focused on certain locations, if there is a need to add more racks/reduce racks based on usage, if pricing incentives should be updated to support rebalancing, or if additional staff time is needed to rebalance vehicles.

Specific procedures for maintenance and repair

A reliable shared micromobility system requires ongoing maintenance of vehicles and hubs. Maintenance protocols should be included within the service level agreement with the vendor. Penalties for noncompliance should be included within the agreement to empower the governing agency and/or participating jurisdictions to enforce maintenance procedures. A number of existing shared micromobility systems have incorporated ways of reporting a vehicle needing repair through the app or within the vehicle hardware. The following is a list of specific procedures for maintenance and repairs recommended by the Institute for Transportation & Development Policy (ITDP)1:

- A designated warehouse or storage space is critical for daily operations and can serve as a repair center, vehicle storage, and customer service center.
- The operator will either collect e-bikes/e-scooters to charge the batteries in the warehouse or swap out batteries on location as needed throughout the day.
- Hubs must be consistently maintained including general upkeep like replacing torn decals, graffiti removal, and removal of any debris. Hubs with solar charging capabilities must be administered to ensure power levels don't drop and the hubs remain online during operating hours.
- Vehicle maintenance is important to the reliability and success of the system. Routine inspections and tune-ups must take place on a regular basis. Reports of damaged vehicles, faulty brakes, flat tires, and broken chains must be addressed within a few hours of a report being made.
- Maintain consistent and reliable staff members. Staff members will be trained to perform maintenance on vehicles which contain complex technology. They will also have the ability to respond to user inquiries and troubleshooting issues as they arise.

Liability Considerations

Owners and operators can limit liability related to shared micromobility systems in various ways, including:

- Purchasing insurance
- Requiring users of the program to sign waivers releasing the program from liability for injuries
- Keeping the shared micromobility vehicles well-maintained
- Educating users about use of the shared micromobility vehicle and providing safety training

Vendors should be contractually required to purchase and maintain insurance coverage pertinent to the operations and provision of shared micromobility service. At minimum, vendors should maintain:

- Commercial general liability insurance of $500,000 to $1,000,000 per incident for death and bodily injury and $500,000 to $1,000,000 per incident for property damage
- Automotive liability insurance (for vendors that utilize motor vehicles in their operations procedures) of $500,000 to $1,000,000 per incident for death and bodily injury and $500,000 to $1,000,000 per incident for property damage
- Employer liability insurance of $100,000 to $500,000 per incident bodily injury and disease
- Workers' compensation insurance in compliance with current state standards

Cyber Liability/Information Technology Insurance of $500,000 to $1,000,000 per claim is also desirable. Vendors may want to consider including sub-contractors on these policies to minimize risk to the entire operations team.

Public agencies have some immunity in regards to discretionary decisions, such as shared micromobility station locations, maintenance schedules, and helmet use by system users. For more information regarding insurance and liability for governing agencies, see section 2 of the *NACTO Guidelines for Regulating Shared Micromobility*.

Theft/Vandalism/Security Considerations

For all shared micromobility system types, theft and vandalism are part of the business. However, shared micromobility vendors have designed the current generation of market-available vehicles to be more resistant to vandalism and theft than earlier models. Today's shared micromobility vehicles may have a number of anti-vandalism and anti-theft features, including:

- GPS tracking: GPS technology integrated into shared micromobility vehicles allows for the tracking and recovery of vehicles that have been stolen.
- Integrated locks: Integrated locks allow users to securely lock dockless and hybrid shared micromobility vehicles to a hub or public bike rack.
- Encasement of vulnerable parts: Shared micromobility vehicles today often feature wires, chains, and gears that are partially or entirely encased within the frame of the bike or scooter itself. This encasement shields these vulnerable parts from being cut or stolen off of the vehicle.
- Anti-theft hardware: Shared micromobility vehicles generally feature anti-theft nuts and bolts that cannot be quickly or easily removed using standard hand tools.
- Accessory integration with frame: Accessory features on shared micromobility vehicles (such as lights, bells, and baskets) are sometimes integrated into the design of a vehicle's stem, handlebars, or frame rather than being attached as a mountable feature.
- Solid tires: Some shared micromobility vehicles feature tires made out of solid rubber rather than inflatable tubes to mitigate risk of flats and slashed tires.
- Custom design: Shared micromobility vehicles are highly customized to the unique demands of shared mobility, and many parts are not compatible with private bicycles. This greatly reduced the street value of shared micromobility vehicle parts.

Additionally, the encouragement and enforcement of secure parking practices through in-app messaging, user fines, and diligent complaint response times can decrease the risk of shared micromobility vehicle theft.

Appendix (System Types)

Docked Systems

Description

Also referred to as "smart dock" systems, this shared micromobility system type is based on powered stations with docks that securely lock a bike and/or scooter and kiosks for user payment transactions and information. At the kiosk, casual users can purchase a short-term membership on demand. Shared bikes and scooters must be retrieved from and returned to a station. Because the equipment is relatively expensive, most U.S. agencies use federal transportation grants and large corporate sponsorship deals to cover the capital and operations costs. Most docked systems only include bikes, however, Chicago's Divvy system now includes docked scooters as well.

Docked bike share station with a payment kiosk in the City of Chicago.

Defining Feature

Station density and visibility are critical to success since the bicycles and scooters must be secured at a station. Additionally, the rebalancing of vehicle units is a major element of operations for dock-based systems. If station density and rebalancing upkeep is adequate, users of dock-based systems enjoy the reliability of knowing where they can plan on finding a bike or scooter from day to day. These systems are largely city or agency-owned, giving them control over station locations, level of service, and pricing.

Feasibility in San Mateo County

Pros

- Station placement can give agencies control over bike or scooter locations and parking in the public right-of-way.
- Contracting can establish service level standards including: pricing, maintenance, customer service, usage data, bike/scooter quality, and safety.
- Bike and scooter locations within dock-based systems can be more predictable for users, which is particularly valuable for commuters and transit riders.
- Stations can create a physical presence for the bike share system and advertise to new users.
- Status as "infrastructure," can establish a more long-lasting system.

Cons

- Stations with docks often mean higher system costs than dockless or hybrid options.
- More upfront work is required to plan and design station locations.
- Station placement may require permits and negotiation with adjacent land owners.
- Reliance on sponsorship and grants can be difficult to sustain.
- Lack of flexibility limits the geographic reach and access to destinations for users.
- Difficult and expensive to upgrade system, as technology evolves.

Estimated Cost

Typical station with 8-10 bikes: $35,000 to $55,000
Operating fees: $2,000-$2,500 per bike per year.

Dockless Bike or Electric Scooter Share Systems

Description

Dockless bike and electric scooter share systems are a fleet of self-locking bikes or scooters without any fixed stations, docks, or kiosks. Users retrieve or park bikes or e-scooters anywhere within the service area using a smart phone app. They offer an appealing level of flexibility and are generally permitted to operate in cities rather than procured.

Defining Feature

Compared to hybrid and docked, dockless systems provide more flexibility for users, but less agency control over bike locations, pricing, and level of service. Because they are privately funded and operated, dockless bike and scooter share systems programs are offered in locations where there is sufficient market demand.

Dockless bike share bikes parked in a designated dockless parking zone.

Feasibility in San Mateo County

Pros

- System can be launched more quickly than docked or hybrid systems.
- Station planning and design is not necessary, which saves time and money.
- Due to venture capital involvement, little to no public funding is required.
- Less city/agency liability for helmet laws.
- System is highly flexible for users.
- Can be more affordable for single-trip, casual users.

Cons

- Agencies generally have much less control over dockless bike share systems compared to other system types, including the sustainability of the system.
- Dockless companies determine where they operate and are currently focusing on expanding into major markets and contiguous growth.
- Smaller cities have less leverage to regulate dockless companies than major markets.
- Bikes and scooters can be improperly parked and obstruct the right-of-way.
- Lower quality bikes may negatively affect user experience.
- Fleet can suffer higher rates of vandalism and theft.

Estimated Cost

Equipment and operations typically provided to agencies at no cost. Companies are supported by venture capital and user fees.

Hybrid Bike Share Systems

Also referred to as a "smart bike" system, this approach houses transactions on the bike rather than at a station. Stations, also called hubs, consist of branded racks for parking bike share bikes. Though stations are available, the program does not require that a bike be left at a station and it is permitted to be parked anywhere within the service area. The racks have no software or technology features (different than the dock-based "smart-docks"). Hybrid systems typically charge a fee to park outside of the stations or offer an incentive to park at the stations to encourage users to use the docks.

Hybrid bike share bike and docks in Orlando, Florida.

Defining Feature

Offer the reliability and visibility of docked systems with the flexibility of dockless systems. Agency contracts or ownership provide control over implementation, but less ability to manage parking in the right-of-way once launched. Hybrid systems are found in cities of all sizes.

Feasibility in San Mateo County

Pros

- Sponsorship opportunities can create community partnerships.
- Station placement gives agencies control over bike locations and parking in the right-of-way.
- Stations create a physical presence for the system and advertise to new users.
- Bike locations are both predictable and flexible for users.
- Users can more easily locate a pod of bikes for a group to ride.
- Status as "infrastructure," can establish a more long-lasting system.

Cons

- The hardware and software included on the bikes and the need for stations means higher costs than dockless systems, but lower than fully docked.
- Station placement may require permits and negotiation with adjacent land owners.
- Bikes or e-scooters can be improperly parked and obstruct the right-of-way.
- Time and funding for rebalancing bikes.
- Difficult and expensive to upgrade system as technology evolves.

Estimated Cost

Typical station with 8-10 bikes: $20,000 to $25,000.

Operating fees: $2,000-$2,500 per bike per year.

REVISED MEMORANDUM

To: Kim Wever, C/CAG

From: Foursquare ITP

Date: October 10, 2022

Appendix F: Program Guidelines and Regulatory Framework Memo

CONTENTS

Executive Summary

The following memorandum provides detailed program recommendations and guidelines for implementing a regional shared micromobility pilot in San Mateo County. The guidelines build off the technical findings and recommendations developed for this study as well as stakeholder input gained through meetings and presentations with potential partners. This report is divided into the following sections:

- **Existing Micromobility Regulatory Framework**: A review of state and local micromobility regulations that could impact the implementation of a program in San Mateo County
- **Recommended Program Guidelines and Requirements:** Outline of technical requirements and guidelines to be incorporated into a future request for proposals (RFP). This information is supplanted by examples of current practice across the Bay Area and elsewhere
- **Program Roll-out and Expansion:** Discussion of how a future micromobility pilot program could be expanded over time.
- **Mitigating Risk:** Discussion of strategies to mitigate program risk.

Existing Micromobility Regulatory Framework

Today only the City of San Mateo and Redwood City have established micromobility ordinances in the county. Millbrae and Burlingame have program requirements identified through an RFP which is has yet to be awarded at the time of writing. After reviewing these existing documents, the only major point of conflict between these established regulations is that while all communities permit bikeshare (including e-bikes), scooters are presently only permitted in Redwood City. Other differences between regulations, such as minimum insurance requirements, could be easily reconciled through a new regional program.

Recommended Program Guidelines and Requirements

The wider study envisions that a regional micromobility program be established as a pilot, implemented through an RFP to select a vendor who would own and run a local program. This report outlines an inventory of recommended program guidelines and performance standard, which is summarized in **Table 1.** Discussion around each topic includes an overview of options, their pros and cons, examples form other jurisdictions, and specific recommendations for the pilot micromobility program in San Mateo County.

Table 1: Summary of Program Guidelines

Topic	Description
Types of Vehicles Permitted	Recommended minimum technical requirements for micromobility vehicles, including for pedal-assist e-bikes and e-scooters.
Rider Regulations	Outlines rules for where micromobility vehicles are permitted to be operated based on existing state and local regulations.
Vehicle Parking Regulations	Parking regulations with which vendor and riders must comply. Modeled closely on existing standards outlined in area micromobility ordinances
Speed Limits	Sets maximum electrically-assisted speed for devices to 15 mph for scooters and 20 mph for bicycles
Age Restrictions	Outlines state age restrictions for scooters and e-bicycles.
Fleet Size	Recommends initial fleet size of 500 vehicles, with specific minimum limits set systemwide and per operating jurisdiction.

Topic	Description
Insurance and Indemnification Requirements	Sample insurance and indemnification requirements taken from other local micromobility programs.
Data Sharing and Frequency	Describes when and how data is to be shared with the program manager, participating jurisdictions and the public. Includes language requiring adoption of existing data standards.
Contract Length	Recommends a one-year pilot contract with renewal options.
Vehicle Maintenance and Inspection Requirements	List of maintenance and inspection requirements to ensure system is in proper working order.
Rebalancing Requirements	Defines rebalancing for the purpose of the RFP and outlines the types of information on rebalancing a respondent should provide in their proposal.
Geographic Coverage	Proposes vehicle distribution requirements based on jurisdiction boundaries and MTC Equity Priority Communities.
Customer Service and Complaint Resolution Standards	Defines standards for customer service, including issue response time and complaint resolution.
Equity Programming	User-equity focused RFP requirements aimed at reducing barriers to use.
Enforcement Requirements	Defines enforcement mechanism, including recommended operator security deposit, hourly impound fee, and mechanism to suspend operations.
Program Fees	Outlines recommended vendor fee structure and pricing.
User Fees	Information on area micromobility prices and how an RFP can consider proposed pricing in the total contract value proposition
Subsidy and Revenue Sharing	Information on how operating subsidies and revenue sharing could be incorporated into the program.

Program Rollout and Expansion

This section discusses the impact of a jurisdiction entering or leaving the program during the duration of the pilot and how that may affect the overall pilot system. The study team envisions that the pilot would run for one-year, with participating jurisdictions committing to stay within that program through the duration of the pilot.

The pilot is an opportunity for the county to refine its micromobility management approach. At the end of the pilot period, the study team envisions the county would make recommendations for and adopt a revised program management structure that incorporates lessons learned from the pilot.

Risk Mitigation

Any micromobility program faces risks. While it is impossible to eliminate all risk, there are strategies to help mitigate or lesson risk exposure for the program manager, participating jurisdictions, and the public. Some key topics discussed in this report include: liability risk, reducing the likelihood of operator exit, and financial risks associated with the program.

Existing Micromobility Regulatory Framework

Before outlining specific program guidelines and standards, it is important to understand the existing regulatory landscape in California and San Mateo County for micromobility operators. The State of California through AB 1286 requires jurisdictions to regulate and manage shared micromobility programs within their boundaries. As of the time of writing, City of San Mateo and Redwood City are the only two jurisdictions in the County with established micromobility ordinances. Burlingame and Millbrae have also established operating standards through their bikeshare RFP released in the summer of 2022.[1] This section outlines existing regulations and any possible points of conflict between established regulations and a future county micromobility program. A wider discussion of regional and national practices is incorporated in the section of this report titled **Recommended Program Guidelines and Requirements.**

Statewide Regulations

California Assembly Bill 1286 (passed in September 2020) outlines the basic regulatory structure for micromobility in California. The bill requires jurisdictions to adopt operating, parking, and maintenance rules for shared micromobility through the establishment of an ordinance, permit program, or agreement (i.e., eliminating the opportunity to establish a micromobility program by-right in the absence of any existing rules or agreements). The bill does not dictate specific requirements for local regulations beyond minimum commercial liability insurance coverage standards for the micromobility operator of $1 million per incident and $5 million in aggregate coverage.

California Assembly Bill 371 builds off on previous legislation by setting additional insurance and vehicle identification requirements. The bill states that starting July 1, 2023, micromobility providers will need to maintain user coverage of $10,000 for any incident involving bodily harm and $1,000 for property damage to an assistive technology device (e.g., wheelchair) caused by a micromobility device. These requirements would exempt human powered and Class I or II e-bikes, effectively limiting the new insurance requirements to scootershare operations. The bill also requires that all micromobility devices regardless of type have a clearly identifiable identification number in print and braille on the vehicle.

Vehicle Types and Equipment Regulations

Within San Mateo County, presently only Redwood City has a micromobility permit program that allows for shared scooters. While the City of San Mateo's micromobility ordinance (Municipal Code Chapter 11.30 "Shared Mobility") includes language about shared scooters, the permit program established by the City currently is limited to bicycles and e-bicycles. Finally, Millbrae and Burlingame, which are introducing shared-micromobility through a joint RFP, have limited their planned program to e-bicycles. Unlike

> **Vehicle Classes**
>
> California Assembly Bill 1096 classifies electric bicycles into three categories:
>
> - **Class I:** Ped-assist bicycles with a maximum assisted speed of 20 mph. These bicycles are permitted to be used on any paved surfaces bicycles are allowed.
> - **Class II:** Throttle-assisted bicycles with a maximum assisted speed of 20 mph. These bicycles are permitted to be used on any paved surfaces bicycles are allowed.
> - **Class III:** Ped-assist bicycles where the electric motor can provide assistance up to 28 mph. Users must wear a helmet and be 16 years or older. Class 3 bicycles are prohibited from multi-use paths.

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[1] Note that while the shared scooters operate in portions of the City of South San Francisco, the study team could not locate any published ordinance.

the other two cities which permit Class I and II e-bicycles, Millbrae and Burlingame will restrict their program to Class I e-bikes. See **Table 1** for a summary of vehicle regulations by jurisdiction.

The study team does not see existing vehicle regulations as a major barrier to a county micromobility program with the major exception that scooter-share is presently only explicitly permitted in Redwood City. While requirements related to e-bike vehicle class and capability differ slightly, any bikeshare program utilizing Class I e-bikes should be able to satisfy all existing requirements among the jurisdictions evaluated.

Table 2: Vehicle Types by Jurisdiction

	Redwood City	City of San Mateo	Millbrae / Burlingame
Vehicle Type	Scooters and bicycles, including Class I and II e-bicycles	Bicycles, including Class I and II e-bicycles.	Class I e-bicycles
Speed Restrictions	15 mph for scooters and 20 mph for bicycles max speed	20 mph max speed	20 mph max speed
Other Requirements	• Clearly identifiable serial number on vehicle • Vehicles must be trackable through GPS • Vehicles should be capable of geofencing / remote locking. • Mobile app and/or website provide public the location, serial number, availability, and charge of vehicles	• Clearly identifiable serial number on vehicle • Vehicles must be trackable through GPS • Vehicles must be equipped with front and back lights visible from at least 300 feet in normal conditions.	• No other vehicle-specific requirements

Regulations on Where People Can Ride

California code allows jurisdictions to regulate where micromobility devices are permitted to ride. Of the jurisdictions examined by the study team, only the City of San Mateo in its micromobility ordinance explicitly bans vehicles from riding on sidewalks. Note that scooters are banned by California law from operating on sidewalks, effectively banning sidewalk riding in Redwood City. None of the jurisdictions specify no-go or slow zones in their micromobility regulations. See **Table 2** for more detail on riding restrictions.

Table 3: Rider Restrictions by Jurisdiction

	Redwood City	City of San Mateo	Millbrae / Burlingame
Riding Restrictions	Vehicles permitted to ride anywhere bicycles are allowed	Vehicles permitted to ride anywhere bicycles are allowed; explicit ban on sidewalk riding.	Vehicles permitted to ride anywhere bicycles are allowed

Regulations on Where People Can Park

The City of San Mateo and Redwood City use similar language to regulate where micromobility devices can be parked. Existing regulations do not conflict with one another and require vehicles to be parked in the furniture zone of sidewalks or other pre-defined designated areas such as geofenced parking zones and stations. The regulations all require the vehicles be parked upright, and not block curb cuts, curb ramps, ADA access, access to transit stops, sidewalk clear space, and fire hydrants. The Millbrae and Burlingame RFP provides less detail on banned parking locations but does not conflict with the ordinances of the other two jurisdictions. See **Table 3** for more detail on parking restrictions

Table 4: Parking Restrictions by Jurisdiction

	Redwood City	City of San Mateo	Millbrae / Burlingame
Permitted Parking Area	Hard surface of sidewalk frontage or furniture zone	Hard surface of sidewalk furniture zone	Unspecified
Banned Locations	• Anywhere that impedes the free flow of traffic or access • Adjacent to curb ramps, disabled parking zones, street furniture, entryways, driveways, fire hydrants, and bus stops.	• Anywhere that impedes the free flow of traffic or access • Locations that obstruct access to fire hydrants, street furniture, crosswalks, sidewalks, buildings, parks, trails, driveways, or private property access.	• Anywhere that impedes the free flow of traffic or access • Cities reserve the right to designate geofenced no-parking areas.

Other Restrictions

The review of micromobility ordinances in San Mateo, Redwood City, Millbrae, and Burlingame identified few other restriction types that may impact a county system.

- *Logos:* City of San Mateo restricts the operator from affixing any logos, sponsorships, and advertising to the vehicle other than the operator's own logo.
- *Education Information:* Redwood City requires the operator to provide education materials about safe riding, proper parking, rules of the road, and existing local and state regulations to riders. Information must be at a minimum in English and Spanish and accessible to persons with disabilities.
- *Helmet Requirements:* No helmet requirements exist beyond state regulations for helmet use.

Insurance Requirement

Redwood City and the City of San Mateo have identical commercial liability insurance requirements in their micromobility ordinances. Millbrae and Burlingame outlined a higher Commercial Liability Insurance requirement in their RFP. Moreover, each jurisdiction specifies other required insurance policies, such as Cyber Liability Insurance (Redwood City) and Auto Liability Insurance (City of San Mateo, Millbrae, and Burlingame). All jurisdictions require the policy to cover liability of the city and any elected officials, employees, volunteers, or contractors. While each jurisdiction sets slightly different insurance standards,

nothing in the requirements conflict with one another and an operator could comply by adopting a policy that meets or exceeds each jurisdictions minimum requirement.

Table 5: Insurance Requirements by Jurisdiction (note: requirements will be updated to reflect recently passed AB 371)

	Redwood City	City of San Mateo	Millbrae / Burlingame
Per Occurrence – Commercial Liability Insurance	$2 million	$2 million	$5 million per occurrence
Aggregate Coverage – Commercial Liability Insurance	$5 million	$5 million	No annual aggregate; required total $5 million minimum liability may be satisfied with a combination of primary and umbrella/excel limits so lang as primary limit is at least $5 million
Other	• Cyber Liability Insurance of $1 million per claim • All insurance carriers must maintain an A.M. Best rating no less than A-:VII	Auto liability insurance of $1 million per accident for bodily injury and property damage	Auto liability insurance of $1 million per accident for bodily injury and property damage

Fees and Enforcement

There are differences between how jurisdictions structure their permit fees in San Mateo County. Redwood City, which has an active scooter-share program at the time of writing, charges a $2,000 application fee, and $0.15 fee per trip. The operator is also required to pay a $5,000 public repair and maintenance fee that is refundable in the case no damages occur. The Millbrae / Burlingame RFP does not outline any specific fees.

To enforce existing permit programs, Redwood City and the City of San Mateo reserve the right to revoke the operating agreement. Redwood City also will charge operators a $99 impound fee if vehicles must be removed from the public right-of-way.

For a countywide program, ideally a unified fee and enforcement structure would be established. A county-wide program would likely establish more specific enforcement mechanisms that go beyond what the jurisdictions currently require (see Recommended Enforcement Strategy).

Table 6: Fees and Enforcement

	Redwood City	City of San Mateo	Millbrae / Burlingame
Application Fee	$2,000 application fee for new, renewed, or expanded permit	$5,000 fee for 12-month permit	None
Other Fees	• $5,000 public property repair and maintenance fee (serves as a form of security deposit). • $0.15 fee per trip		None

Enforcement Mechanisms	• Revocation of operating permit • $99 impound fee	Revocation of operating permit	Not described in RFP

Regulatory Points of Conflict

Overall, the study team sees limited points of conflict in existing micromobility regulations that would hinder the implementation of a county system. The most significant regulatory hurdles to a multi-jurisdictional program are:

- Scooters are only explicitly permitted to operate in Redwood City.
- Jurisdictions outline differing fees in their micromobility ordinances. Ideally an interjurisdictional program would have its own fee structure independent of existing local permit programs.
- Millbrae and Burlingame have a higher insurance requirement than the City of San Mateo and Redwood City. It is unclear whether that requirement would prove exclusively burdensome to a future regional operator or not.
- If the pilot program includes a jurisdiction with an existing micromobility program, such as Redwood City, the county will need to determine how reconcile the local system with a regional program. As there are few micromobility systems already in operation in the County, the pilot program could simply grandfather in any existing operations through the end of their permit term.

If the pilot program includes a jurisdiction with an existing micromobility program, it should

Recommended Program Guidelines and Requirements

The study team envisions that instead of establishing a permit program, participating jurisdictions would solicit a vendor to operate a micromobility pilot through a competitive RFP. An RFP is the ideal approach for a pilot as it allows vendors to propose their own solutions to meet program goals. An RFP process also allows the county to select a vendor that represents the best total value instead of basing vendor selection merely on whether the applicant meets a minimum set of standards.

The guidelines in this section include a mix of recommended program standards and areas where the respondent can demonstrate value. For each topic, the study team provides background and a recommended approach.

An RFP for shared micromobility will lay out guidelines and requirements for the program that the selected vendor must follow. Common elements included in these program guidelines and requirements are:

- Type of vehicles permitted (e.g., pedal bicycles, e-bikes, e-scooters)
- Regulations of where people can ride (e.g., no sidewalk riding, geographic restrictions)
- Regulations on where riders can park
- Rider speed restrictions
- Rider age restrictions
- Maximum (and/or minimum) number of vehicles permitted
- Insurance and indemnification requirements
- Data sharing and frequency
- Contract length
- Vehicle maintenance and inspection requirements
- Rebalancing requirements (rules that dictate when vehicles need to be redistributed)
- Geographic coverage requirements

- Customer service and complaint resolution standards.

RFP Procurement over Permit Program

The study team recommends that San Mateo County procure a single operator for the pilot instead of establishing an open permit program. Both approaches are common across the Country but releasing an RFP would benefit the county in a few ways over establishing a permit program:

1) A permit program does not allow the county to compare and contrast across vendors like an RFP does. A sole vendor permit program would not be competitive, issuing the contract on a first-come basis.

2) Unlike in a permit program, where all requirements are established upfront, an RFP allows respondents to propose specific approaches and solutions, which San Mateo County can in-turn evaluate against one another. As such, with an RFP, the program manager and participating jurisdictions do no need to figure out every aspect of the pilot program and instead be in dialogue with vendors to come up with effective solutions.

3) An RFP also allows for negotiations with the vendor on scope, in-kind services, fees, and subsidies. For example, whether an operator needs a subsidy to run the program may be dependent on other negotiable factors such as the vehicle cap, whether scooters are permitted, fee structure, and market exclusivity.

Types of Vehicles Permitted

Micromobility vendors operate a variety of vehicles, but e-scooters and e-bikes are the most common vehicle type. For example, Lime, which is currently permitted to operate in San Francisco, maintains a fleet of e-scooters and e-bikes; the company is also piloting a fleet of adaptive scooters.[2] There is limited appetite from the private sector to operate conventional bikes, as most customers gravitate to vehicles with electric assist. The existing micromobility programs and ordinances in San Mateo County are varied in terms of the types of vehicles permitted. As presented in **Table 1**, Redwood City permits the operation of both bicycles (pedal or electric) and e-scooters under its permit program, while the City of San Mateo and Millbrae/Burlingame permit only bicycles (pedal or electric). The study team in this section outlines recommended vehicle guidelines for both scooters and e-bicycles.

Recommended Vehicle Guidelines

1) All vehicles must be in compliance with local, state and federal laws and regulations covering bicycles and scooters. In addition, electric-assist bicycles must meet the National Highway Traffic Safety Administrations definition of low-speed electric bicycles.

2) All vehicles must have clearly identifiable serial numbers, along with the company name, customer service telephone number, and website address.

3) All vehicles must be equipped with the following:

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[2] Lime, "Lime Able,"https://www.li.me/why/community/lime-able

a. An integrated locking mechanism which cannot be removed using simple tools and which securely holds the vehicle upright when parked at a bike rack or other fixed object. A combination lock will not be considered an integrated locking mechanism.

b. On-board GPS device capable of providing real-time location data and the capability to georeferenced where riders can go, establish slow zone, and restrict parking.

c. Operable front and back brakes operated through handles on the handlebar

d. Lights visible at least 300 feet away in normal conditions and remain on for 90 seconds after the vehicle has stopped, a red reflector on the rear of the vehicle that is visible from a distance of 500 feet to the rear, when directly in front of lawful upper bans of headlamps on a motor vehicle, and a white or yellow reflector on each side visible from the front and rear of the motor scooter from a distance of 200 feet.

4) Additionally, if permitted, electric assist bikes shall have:

a. Fully operable pedals and have a top motor-powered speed of 20 miles per hour.

b. A front or rear basket

5) Additionally, if permitted, electric assist scooters should have:

a. An electric motor with a top regulated speed of 15 miles per hour.

b. Minimum wheel size of nine inches in diameter

Rider Regulations

Laying out clear regulations for where customers are allowed to ride shared micromobility vehicles is essential for operating a safe and efficient micromobility program. These regulations encompass two aspects of vehicle operation: where on the public right-of-way vehicles should be ridden (e.g., sidewalk, bike lane, mixed traffic) and the service area for the micromobility program.

Defining a clear service area is important for managing micromobility vehicle operations. For San Mateo County, that means determining if vehicles can be ridden outside of jurisdictions that have opted into the countywide micromobility program, if vehicles can be operated anywhere within participating jurisdictions, or if there are designated zones within participating jurisdictions that riding is allowed. For example, micromobility vehicles could be limited to downtowns of participating jurisdictions, or vehicles could be banned from especially steep or narrow roads and trails that would be unsafe to travel on using an e-bike.

As technology improves, micromobility vendors have more resources available to them to help ensure their vehicles are being used within designated areas and in the correct part of the right of way. Most vendors use geofencing technology to help enforce riding guidelines. In general terms, geofencing is a location-based service in which an app or other software uses GPS or other data to trip a pre-programmed action when a vehicle enters or exits a virtual boundary. While the technology is not perfect and is currently only accurate to within five to ten feet, it can be useful for helping enforce where bike or scooter use is prohibited.[3]

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[3] NACTO (2019), *Shared Micromobility Guidelines*, https://nacto.org/wp-content/uploads/2019/09/NACTO_Shared_Micromobility_Guidelines_Web.pdf

In addition, defining where vehicles are allowed to be ridden is important for setting clear operational guidelines. In general, micromobility vehicles can be ridden on the sidewalk, in mixed traffic on a street, or in a bike lane, and in some instances, operation in the public right-of-way is unrestricted, meaning someone could ride a micromobility vehicle anywhere. The California Vehicle Code can also help provide direction for where micromobility vehicles should and should not be ridden. For example, California code currently states that e-assist bicycles are allowed in bike lanes if authorized by a local authority or ordinance.[4] Currently in the region, as described in **Table 2**, Redwood City and Millbrae/Burlingame permit micromobility vehicles to be ridden anywhere bicycles are allowed, and the City of San Mateo permits vehicles anywhere bicycles are allowed, but explicitly bans sidewalk riding. E-bikes are banned on most trails managed by the Midpeninsula Open Space District.[5] Oakland, Berkley, and San Jose also ban the operation of any micromobility vehicles on sidewalks and the California Vehicle Code (Sec. 21235) bans scooters from operating on sidewalks.

Finally, geofencing technology allows jurisdictions to establish slow zones where the maximum top speed of the vehicle is throttled. For example, slow zones are used in Hartford, CT to limit scooters to 8 mph in select city parks. A similar slow zone could be utilized in San Mateo County to minimize modal conflicts in locations like parks or campuses.

Recommended Regulations for Where People Can Ride

1) Use of micromobility vehicles should follow existing state guidelines for e-bikes and e-scooters. Scooters and bicycles must yield to pedestrians. Micromobility vehicle users must follow the rules of the road, obey all traffic laws, and obey all applicable local ordinances when riding on a street or roadway.

2) The participating jurisdictions reserve the right to identify designated no-riding or slow zones, where micromobility vehicles are prohibited or limited to speeds below the service area maximums. As such, the vendor may be required to create geofenced areas to enforce these rules.

Vehicle Parking Regulations

Tied closely to where people can ride micromobility vehicle is where people can park those vehicles. Without clear guidelines in place, micromobility vehicles can quickly become a nuisance. Improperly parked vehicles can impede pedestrians' ability to use the sidewalk or a car's ability to use the roadway and can become a safety hazard. There are several approaches to parking management the County could take, including designating areas where parking is permitted and designating areas where parking is prohibited.

Increasingly, jurisdictions with micromobility programs are implementing micromobility parking zones or corrals, which clearly delineate where vehicles can be parked.[6] Corals can be located on sidewalks or streets and with or without specific docking points. Parking corrals reduce micromobility vehicles' encroachment on the public right of way and add a layer of control over operations for jurisdictions and operators. However, these corrals do take some freedom away from dockless mobility and will not provide a guarantee that users will park vehicles correctly. Another approach is to designate areas where parking is prohibited. As such, a

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[4] California Department of Motor Vehicles (2022), "Two-Wheel Vehicle Operation," https://www.dmv.ca.gov/portal/handbook/motorcycle-handbook/two-wheel-vehicle-operation/#:~:text=No%20pedals%20if%20powered%20solely,by%20local%20authority%20or%20ordinance
[5] Midpeinsula Open Space District (2021), "E-bike Policy Evaluation," https://www.openspace.org/what-we-do/projects/e-bike-policy-evaluation.
[6] NACTO, (2019), *Shared Micromobility Guidelines*, https://nacto.org/wp-content/uploads/2019/09/NACTO_Shared_Micromobility_Guidelines_Web.pdf

jurisdiction indicates areas where parking is not allowed, such as on sidewalks, but does not designate specific parking corrals. This helps ensure that vehicles do not block the sidewalk, but it can be difficult for a jurisdiction and the vendor to manage.[7]

Recommended Regulations / RFP Requirements

1) Vendors should propose a descriptive management plan for parking, such as a geofencing system.

2) The Micromobility Program should include a method for locking vehicles at the end of trips that is predictable for users and minimizes the impact of sidewalk hazards, bicycle clutter, and ADA accessibility concerns. Proposers should describe a process to remove vehicles left on streets and sidewalks that impact the public accessibility and the free flow of traffic.

3) Micromobility vehicles must be parked upright on a paved surface within the furniture zone of a sidewalk or within a pre-determined parking zone or corral. Vehicles cannot be parked anywhere that blocks:

   a. Public roadway or on-street parking spots

   b. Access or egress from buildings

   c. Curb ramps

   d. Curb cuts

   e. Access to fire hydrants

   f. The sidewalk right-of-way

   g. Transit stops

4) In locations where there is insufficient eligible space to park micromobility vehicles, operator will work with the program manager to identify parking zones.

5) Vehicles can only be permitted to park on private property with the written approval of the property owner and jurisdiction.

The study team has stopped short of recommending that all vehicles must be locked to a stationary object. While this requirement helps reduce issues with vehicles blocking the sidewalk or being vandalized, it also raises some challenges. There may not be adequate bicycle parking in some communities, which would make compliance challenging. Similarly, jurisdictions may elect to establish on-street micromobility parking zones; a lock to requirement may require these zones include bicycle racks as well which increase the cost and complexity of implementation. Participating jurisdictions should consider these challenges when determining hether to include a lock-to requirement.

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[7] Transportation For America, *Shared Micromobility Playbook,* https://playbook.t4america.org/

Speed Limits

Regulations on rider speed are important for ensuring the safe operation of micromobility vehicles. Vehicle speed is controlled in a few ways. The most powerful e-bikes available have a maximum speed of 28 miles per hour, and most e-bikes have a maximum speed of 20 miles per hour. Most e-scooters on the market have maximum speeds around 15 miles per hour. Second, micromobility vendors can use geofencing technology that can further control speeds based on vehicle location. For example, maximum vehicle speeds can be reduced in areas with high pedestrian traffic, which can help limit the negative interactions between pedestrians and micromobility users.

Recommended Regulations for Vehicle Speed

1) E-bikes shall be Class I pedal assist, with a maximum speed of 20 miles per hour. E-scooters should have a maximum speed of 15 miles per hour.

2) The vendor shall propose a plan for managing speeds on vehicles. The participating jurisdictions reserve the right to adjust speed limits and designate slow-zones where riders cannot exceed 8 miles per hour on electric power.

Age Restrictions

As with other vehicles, the operation of micromobility vehicles can be unsafe if operated carelessly or improperly. As such, the County should lay out clear guidelines for who is eligible to operate a micromobility vehicle. The law differs on slightly on who can ride e-scooters and bikes in California. California vehicle code requires a driver's license or permit to operate an e-scooter, effectively limiting scooter-share services to those 16 years or older.[8] E-bikes do not face the same restriction, but operators typically set a minimum age due to liability concerns. Note that age restrictions can be difficult to enforce without a requirement for a state issued ID. Most vendor apps will have some means of verifying a person's age, thus limiting the use of In Los Angeles, scooter operators are required to be at least 18 years of age and old a valid driver's license.[9]

Recommended Regulations for Rider Age

1) Vendors must verify that users have valid credentials for use of an e-bike or e-scooter, as required by the California Vehicle Code.

Regulations on Helmets

An important safety consideration for a micromobility program is helmet use. Jurisdictions with micromobility programs have the option to require helmet use to further advocate for safety. While helmets provide valuable protection for cyclists and scooter users, helmet requirements can be difficult to enforce. In addition, a helmet requirement can limit accessibility to a micromobility program, reduce the use and can be a potential barrier to entry for individuals. To make helmets more accessible, some cities such as Santa Monica have required micromobility operators to provide helmets to users through distribution events and

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[8] California Vehicle Code, https://leginfo.legislature.ca.gov/faces/codesTOCSelected.xhtml?tocCode=veh
[9] Los Angeles Department of Transportation, "Micromobility," https://ladot.lacity.org/projects/transportation-services/shared-mobility/micromobility

partnerships with brick-and-mortar retailers. This approach leverages operator resources to ensure all users have helmet access, but it can prove burdensome for vendors.[10] Note that the California vehicle code requires helmets on bicycles for all bike and scooter users under 18 years of age.[11]

While helmet requirements are good in theory, they have been problematic to implement. Even when operators regularly supply helmets to the public, there is no cost-effective model to make helmets available to users on-demand at the point of where a trip starts. Helmet requirements create an additional point of enforcement, which raises equity concerns around who may be targeted for enforcement. Finally, helmet laws create an additional barrier to taking micromobility trips. Previous research has shown a strong correlation between bicycle trip volume and accident rates, and policy makers may do more for cycling and scooter safety by making these modes more prevalent than requiring helmets[12]. While on an individual level, helmets increase safety, at a societal level they may decrease safety by reducing the adoption of modes like cycling.

Recommended Regulations for Helmet Usage

1) Helmets should be worn by all persons when operating an e-bike or e-scooter and must be worn by all persons under the age of 18 while operating a scooter. The vendor will provide information to riders on the correct and safe way to use the Equipment.

2) The vendor will make available low-cost, discounted, or complimentary helmets for users to support outreach and engagement programs or to otherwise promote safe use of the Equipment.

Regulations on Fleet Size

Most jurisdictions choose to regulate the number of micromobility vehicles permitted to operate to ensure streets are not oversaturated with micromobility vehicles. Suggested best practices on fleet size include:

- Setting a minimum and maximum number of micromobility vehicles available for public use from a vendor.
- Minimums and maximums can be dynamic, such that the contracting jurisdictions can make adjustments to fleet size requirements as demand dictates.
- Requiring vendors to deploy an absolute number of vehicles in their fleet at any given time.[13]

Regulating the fleet size allows for greater control over the micromobility program. A smaller fleet allows jurisdictions to become comfortable with micromobility services before they scale up and can mitigate issues regarding parking management or right of way access. However, fleets should be large enough to provide a sufficient level of service.[14] Having both a minimum and maximum fleet size allows vendors to right-size their fleet based on regular variations in use. For example, demand typically declines in winter months, when fewer people are likely to use an e-scooter or e-bike and the weather leads to greater wear and tear on the vehicles.

[10] Transportation For America, *Shared Micromobility Playbook,* https://playbook.t4america.org/
[11] California Vehicle Code, https://leginfo.legislature.ca.gov/faces/codesTOCSelected.xhtml?tocCode=veh
[12] https://usa.streetsblog.org/2020/01/17/bike-group-to-feds-helmet-laws-are-bad/
[13] NACTO, (2019), *Shared Micromobility Guidelines*, https://nacto.org/wp-content/uploads/2019/09/NACTO_Shared_Micromobility_Guidelines_Web.pdf
[14] Transportation For America, *Shared Micromobility Playbook,* https://playbook.t4america.org/

1) For the pilot program, Vendors may provide a maximum of 500 vehicles to ensure service availability. The fleet size is based on the recommended program size established in Task 5 of this study and could be modified based on the final geographic scope of the system. The maximum fleet size may be adjusted on a quarterly basis by the program manager based on:

   a. Trips per vehicle per day
   b. Number of parking violations

2) Vendors must make available a minimum of 400 vehicles at any time to ensure vehicle availability in the service area.
   a. Vehicles will be considered unavailable if:
      i. Vehicle is not available for rent to the public
      ii. Vehicle has been reported not in working order (see Vehicle Maintenance and Inspection Requirements)
      iii. Vehicle charge is less than 5 percent of battery capacity
      iv. See Data Sharing, Reporting Requirements, and User Privacy for how fleet size will be tracked.

3) Vendors must ensure equitable distribution of micromobility vehicles by adhering to a minimum average vehicle availability by participating jurisdiction.
   a. Vehicle minimums to be determined jointly by participating jurisdictions.
   b. The study team recommends determining distribution requirements based on each participating jurisdiction's share of total service area jobs and population multiplied by 200 vehicles. For example, if a jurisdiction represented 1/4 of all people and jobs in the service area, the operator would have to maintain an average of 50 active vehicle there. The study team recommends setting jurisdiction level minimums based on 200 vehicles instead of the proposed systemwide minimum of 400 vehicles to provide operators flexibility to rebalance vehicles based on ridership demand.

Insurance and Indemnification Requirements

Laying out insurance and indemnification requirements is imperative for managing liability concerns of a micromobility program. All insurance policies carried by a micromobility vendor should meet the minimum standards dictated in California code to operate a business in the state. Common types of insurance carried by micromobility companies include:[15]

- General Liability Insurance: The biggest risk facing micromobility vendors is the potential that a customer will be injured while operating a vehicle. Micromobility vendors should be insured to protect themselves against risk. Minimum coverage is $1 million per occurrence and $2 million in the aggregate in every city a vendor operates.
- Umbrella Insurance: To further protect micromobility vendors beyond the coverage of General Liability Insurance and Hired and Non-Owned Auto (HNOA) policies, umbrella insurance provides protection beyond the limits and coverage of the other policies held by the vendor. Umbrella policies can cover injuries, property damage, personal liability situations, and some lawsuits. Vendors should have coverage of, at a minimum, $5 million per occurrence.
- Third Party Liability Insurance: Insurance that cover each user of the program. The recently signed AB 371 requires that scooter operators provide liability coverage of $10,000 per user as well as cover up

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[15] Founders Shield, "Insurance for Micromobility," https://foundershield.com/industry/micro-mobility/

to $1,000 of property damage in any incident involving an assistive technology device such as a wheelchair. Third party liability is a new concept in micromobility but akin to the minimum insurance requirements placed on car rentals. California law exempts self powered and Class I or II e-bikes.

In addition to these common insurance types, additional insurance can be required. This includes excess general liability insurance, workers' compensation insurance, and property insurance. Most jurisdictions in California, including San Francisco, Redwood City, and San Mateo County, require workers compensation insurance.

Recommended Insurance Requirements

1) The contractor shall promptly hold harmless, indemnify, and defend the participating jurisdictions, as set forth in this RFP, and the selected vendor shall release the participating jurisdictions as set forth in this RFP. In addition, on or before the commencement date of the vendor agreement, the contractor shall obtain the types and minimum amounts of insurance set forth in this RFP and shall maintain those types and minimum amounts of insurance throughout the Term. As a condition precedent to the effectiveness of the License, the vendor must provide the participating jurisdictions with a certificate of insurance that shows the vendor has obtained the types and amounts of insurance required under the RFP. The vendor shall cause copies of all certificates of insurance to be delivered to all the officials that the address specified in this RFP.

2) <u>Minimum Scope of Insurance</u>

   a. Coverage shall be at least as broad as:
      i. Commercial General Liability (CGL): Insurance Services Office (ISO) Form CG 00 01 12 04 covering CGL on an "occurrence" basis, including produces-completed, operations, property damage, bodily injury, and personal & advertising injury, with limits no less than $5,000,000 per occurrence and no annual aggregate. The required total of $5,000,000 minimum limit of liability may be satisfied with a combination of primary and umbrella/excess limits so long as the primary limit is at least $3,000,000.
      ii. Automobile Liability: ISO Form Number CA 00 01 covering any auto (Code 1), or if Contractor has no owned autos, hired, (Code 8) and non-owned autos (Code 9), with limit no less than $1,000,000 per accident for bodily injury and property damage.
      iii. Workers Compensation Insurance as required by the State of California, with Statutory Limits, and Employer's Liability Insurance with limit of no less than $1,000,000 per accident for bodily injury or disease.
      iv. Third-Party Liability Coverage: A shared micromobility operator should provide individual user coverage in compliance with the insurance requirements dictated by Assembly Bill 371, which was signed into law on September 29, 2022. Requirements state that "a shared mobility service provider [shall] offer or make available, or confirm the user of a shared mobility device maintains, insurance coverage for bodily injury or death suffered by a pedestrian when the injury or death involves, in whole or in part, the negligent conduct of the shared mobility device user, of $10,000 for each occurrence of bodily injury to, or death of, one pedestrian in any one accident, and for property damage to an assistive technology device of $1,000 per occurrence". The requirement does not apply to a bicycle propelled exclusively by human power, a class I electric bicycle, or a class II electric bicycle as defined by the California vehicle code.

v. If the Contractor maintains higher limits than the minimums shown above, the participating jurisdictions require and shall be entitled to coverage for the higher limits maintained by the Contractor.

3) Deductibles and Self-Insured Retentions

   a. Any deductibles or self-insured retentions must be declared to and approved by the participating jurisdictions. At the option of the participating jurisdictions, either: the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects to the participating jurisdictions, their officers, officials, employees, and volunteers; or the Contractor shall procure a bond guaranteeing payment of losses and related investigations, claim administration, and defense expenses.

4) Other Insurance Provision
   a. The policies are to contain, or be endorsed to contain the following provisions:
      i. General Liability and Automobile Liability Coverages
         1. The participating jurisdictions, their officers, officials, employees, and volunteers are to be covered as insureds as respects: liability arising out of activities performed by or on behalf of the Contractor, products and completed operations of the Contractor, premises owned, occupied, or used by the Contractor, or automobiles owned, leased, hired, or borrowed by the Contractor. The coverage shall contain no special limitations on the scope of protection afforded to participating jurisdictions, their officers, officials, employees, or volunteers. The endorsement providing this additional insured coverage shall be equal to or broader than ISO Form CG 20 10 11 85 and must cover joint negligence, completed operations, and the acts of subcontractors.
         2. The Contractor's insurance coverage shall be primary insurance as respects the participating jurisdictions, their officers, officials, employees, and volunteers. Any insurance or self-insurance maintained by the participating jurisdictions, their officers, officials, employees, or volunteers shall be excess of the Contractor's Insurance and shall not contribute with it.
         3. Any failure to comply with reporting provisions of the policies shall not affect coverage provided to the participating jurisdictions, their officers, officials, employees, or volunteers.
         4. The Contractor's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.
      ii. Workers' Compensation and Employers Liability Coverage
         1. The insurer shall agree to waive all rights of subrogation against the participating jurisdictions, their officers, officials, employees, or volunteers for losses arising from work performed by the Contractor for the participating jurisdictions.
   b. All Coverages
      i. Each insurance policy required by this clause shall be endorsed to state that coverage shall not be suspended, voided, canceled by either party, reduced in coverage or in limits except after thirty (30) days prior written notice by

certified mail, return receipt required, has been given to the participating jurisdictions.

5) Acceptability of Insurers
   a. Insurance is to be placed with insurers with a Best's rating of no less than A-:VII and authorized to do business in the State of California.

6) Verification of Coverage
   a. Upon execution of this Agreement, Contractor shall furnish the participating jurisdictions with certificates of insurance and with original endorsements effecting coverage required by this clause. The certificates and endorsements for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf. The certificates and endorsements are to be on forms approved by the participating jurisdictions. All certificates and endorsements are to be received and approved by the participating jurisdictions before work commences. The participating jurisdictions reserve the right to require complete, certified copies of all required insurance policies, at any time.

7) Subcontractors
   a. Contractor shall include all subcontractors as insureds under its policies or shall furnish separate certificates and endorsements for each subcontractor. All coverages for subcontractors shall be subject to all of the requirements stated herein.

8) Additional Requirements
   a. Based on the advice of procurement specialists, San Mateo County may elect to require additional forms of insurance. For example, Redwood City requires the vendor to acquire Cyber Liability Insurance with the following terms:
      i. "Shared micromobility operator must carry Cyber Liability Insurance with limits not less than $1 million per claim. Coverage shall be sufficiently broad to respond to the duties and obligations as is undertaken by the operator in this agreement and shall include, but not be limited to, claims involving infringement of intellectual property, including but not limited to infringement of copyright, trademark, trade dress, invasion of privacy violations, information theft, damage to or destruction of electronic information, release of private information, alteration of electronic information, extortion and network security. The policy shall provide coverage for breach response costs as well as regulatory fines and penalties, as well as credit monitoring expenses with limits sufficient to respond to these obligations"

Data Sharing, Reporting Requirements, and User Privacy

Shared micromobility vehicles produce an immense amount of data and information that jurisdictions need to understand the impact these services have within the service areas. Jurisdictions must set clear data sharing requirements with vendors that lay out the information the jurisdiction is seeking, how the data will be stored and managed, the format of the data, and how often the data is shared with jurisdictions. In addition, jurisdictions should define its expectations regarding personal identifying information and preferences for user protecting data.

The format for which data is provided by the vendors varies. Two widely used data formats exist for micromobility: General Bikeshare Feed (GBFS) and Mobility Data Specification (MDS). Modeled after the General Transit Feed Specification and developed by the North American Bikeshare Associated, GBFS "defines a common format to share the real-time status of a shared micromobility system," with the express purpose to enable clear information exchange between multiple parties. GBFS is intended to be accessible to the public and can be used to aid in traveler trip planning.[16] MDS, developed by Open Mobility Foundation, is a digital tool intended to help cities manage transportation in the public right of way by standardizing communications and data-sharing between public entities and private micromobility operators. Through APIs, MDS helps private shared mobility companies share real-time and historic vehicle data with jurisdictions, which helps inform policy decisions. To be compliant with MDS specifications, private micromobility operators must publish a publicly available GBFS feed.[17]

Recommended Data Sharing and Frequency Guidelines

1) Vendors shall provide data to the participating jurisdictions in an editable spreadsheet on their entire fleet in San Mateo County, including in-service date of vehicle. Report should be made available within three business days upon request or otherwise supplied monthly to the program manager.

2) The vendor shall provide real-time information in General BikeShare Feed (GBFS) specifications through a documented application program interface (API). As such, vendors are directly responsible for providing an API key to the participating jurisdictions to access the data described below. The data to be published to the API will include the following information in real time for every bicycle, electric-assist bicycle and electric-scooter parked in the county's operational areas:

   a. Point location

   b. Bicycle/electric-assist bicycle/electric scooter identification number

   c. Type of vehicle

   d. Charge level (if electric)

   e. Incentivized parking area (if applicable)[18]

3) Vendors shall provide the following anonymized data for each trip record to inform and support safe and effective management of the system and for transportation planning efforts. Data shall be submitted in an editable spreadsheet and via an API when requested by the program manager and conform to Mobility Data Formats (MDS), unless otherwise specified by the program manager.

   a. Anonymized trip data should be provided to the program manager at a minimum monthly.

   b. The following table outlines the requested data schema:

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[16] NABSA (2022), "Shared Mobility Data," https://nabsa.net/resources/data/
[17] Open Mobility Foundation (2022), "About MDS," https://www.openmobilityfoundation.org/about-mds/
[18] Incentivized parking areas refer to any locations where users are incentivized to leave bicycles to help with redistribution, typically in exchange for a discount or other incentive.

Field Name	Format	Description
Company name	[Company name]	n/a
Type of device	Bicycle, electric-assist bicycle or electric scooter	n/a
Trip record number	xxx0001, xxx0002, xxx0003,…	3-letter company acronym + consecutive trip number
Trip duration	MM:SS	n/a
Trip distance	Feet	n/a
Start date	MM,DD,YYYY	n/a
Start time	HH:MM:SS	n/a
End date	MM, DD, YYYY	n/a
End time	HH:MM:SS	n/a
Start location	Census block	n/a
End location	Census block	n/a
Device ID number	xxxx1, xxxx2, xxxx3,…	Unique identifiers for every device
Trip route	n/a	Only in API format
Trip cost total	$ per trip	n/a
Pass type	Single ride, low-income discount program	n/a

4) Vendors shall provide the following device availability data for oversight of parking compliance and device distribution by minutes. Data should be submitted in an editable spreadsheet and via an API within three business days if requested by the participating jurisdictions.

    a. Parking data should meet the following data schema:

Field name	Format	Description
Device ID number	xxxx1, xxxx2, xxxx3,…	Unique identifiers for every device
Trip parking verification	Compliant, non-compliant	Parked location
Parking coordinates	X, Y coordinates	n/a
Parking jurisdiction	Jurisdiction name	n/a
Availability start time	HH:MM:SS; MM, DD, YYYY	Start time that a vehicle is parked
Unavailability start date	HH:MM:SS; MM, DD, YYYY	Time when a vehicle is no longer available at the location due to being rented or removed.
Availability duration	Minutes	Time elapsed between availability and unavailability time

5) Vendors shall supply a monthly report that outline the following:

    a. Number of vehicles in service

b. Number of vehicles out of service

c. Total number of trips

d. Total minutes ridden

e. Data on individual safety incidents, including location, types of vehicles involved, and severity of injury.

f. Number of unique users

g. Anonymized user demographics including riders' age

h. Device maintenance activities, including vehicle identification number and maintenance performed

i. Reported instances of vandalism or vehicle damage, including description of damage, location, and vehicle identification number

6) Vendor shall track all complaints received by customers, the public, or officials representing participating jurisdictions (see Customer Service and Complaint Resolution Standards for additional details on complaint reporting and resolution). This log should include a description of the complaint, date and time received, resolution, and date and time resolved.

a. The program manager should have access to this customer complaint log, updated no less than every 24 hours.

7) Any vendor provided APIs should be compatible with third-party micromobility monitoring software.

8) Vendors must provide a Privacy Policy that safeguards Customers' personal, financial, travel information and usage.

9) Vendors should clearly communicate to the public and the participating jurisdictions what personal information is being collected about micromobility users, how it is being used, and for how long.

10) Vendors should produce a Privacy Policy that complies with the California Online Privacy Protection Act (CalOPPA) and any data protection laws applicable to minors, and further, expressly limits the collection, storage, or usage of any personally identifiable information to the extent absolutely required to successfully accomplish the provision of the regional shared micromobility program.

Contract Length

The ideal length for a contract can vary and determining the correct contract length is a balancing act. In general, longer contracts provide greater stability for the operator, who may in term be willing to agree to more significant program investments. Shorter contracts allow jurisdictions an easy exit in cases where an operator is under performing.

Recommended Contract Length

As this program will be launched initially as a pilot, San Mateo County should limit the duration of the contract.

1) The initial contract term for the pilot is proposed for one year.
2) The program manager reserves the right to execute a one year option to extend.

Vehicle Maintenance and Inspection Requirements

The selected vendor will be responsible for maintaining all equipment so that it is in working order. Micromobility can only be a reliable and effective mode of transportation if the equipment is in good condition. Equipment safety can be a concern, so vehicle and maintenance requirements are an important piece of any RFP. In general, jurisdictions should require that micromobility vendors develop and share their operations plans. These plans should, at minimum, include detailed information about maintenance and inspection schedules, repairs, safe battery handling practices, staffing, and trainings. In addition, vehicles should be required to comply with safety standards established by the Consumer Product Safety Commission as well as any federal, state, or local safety standards; vehicles should be equipped with on-board GPS, capable of providing the vendor with real-time location data; and the contracting jurisdictions should retain the right to suspend or terminate a vendor's contract for equipment safety concerns.[19]

Recommended Vehicle Maintenance and Inspection Requirements

1) Maintenance and repair responsibilities apply to all hardware and software components of the micromobility program. The vendor will be responsible for developing and implementing a plan for: regular inspections, ongoing and preventative maintenance, prompt repair or replacement, and removing graffiti from vehicles and parking zones on a timely basis.

2) A vehicle is deemed in "working order" when:

   a. Vehicle is free of graffiti or vandalism

   b. Tires are properly inflated and wheels are in proper alignment and undamaged

   c. Battery is functioning, with a minimum of 5 percent charge

   d. Brakes, drivetrain, GPS system, and other onboard hardware are fully operational.

   e. All lights and reflectors are functional and unobstructed.

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[19] NACTO, (2019), *Shared Micromobility Guidelines*, https://nacto.org/wp-content/uploads/2019/09/NACTO_Shared_Micromobility_Guidelines_Web.pdf

f. No other damage or defects are present that would prevent the safe operation of the vehicle

g. If applicable, seat is correctly aligned, adjustable, and free of tears or holes.

3) Any vehicle deemed to be not in working order by the operator, public, program manager, or participating jurisdiction shall be locked from use immediately and inspected within 24 hours of the report being made. If a vehicle is confirmed to not be in working order, it shall be removed from the public right-of-way until fully repaired.

4) Vendors shall provide a direct contact to a representative who can respond to requests from the public and participating jurisdictions for rebalancing, reports of incorrectly parked vehicles, or reports of unsafe/inoperable devices by relocating, re-parking, or removing the vehicles, as appropriate within the 12 hours of notice, seven days a week, 24 hours a day.

5) Vendors shall keep a record of maintenance activities and reported safety issues and collisions, including, but not limited to device identification number and maintenance performed. These records shall be sent to the participating jurisdictions monthly and at any time within three business days if requested by the participating jurisdictions.

6) All vehicles must be inspected at least once every 30 days by operator staff to ensure the vehicle is in working order.

7) Graffiti must be removed within 24 hours of being reported, with profane language removed within 6 hours of being reported.

Rebalancing Requirements

Vehicle rebalancing is important for operating an efficient micromobility program and helps ensure that customers have access to vehicles. Rebalancing also limits overcrowding of dockless vehicles on sidewalks and can be a useful tool in improving equitable access to micromobility as well as first-mile/last-mile connectivity. In general, micromobility should be required to rebalance vehicles within the permitted service area based on parameters established by the contracting jurisdiction. Often, jurisdictions will use rebalancing requirements as a way to ensure vehicles are deployed in adequate numbers in high priority and/or equity areas.[20]

Although rebalancing requirements are a standard part of operating a micromobility program, these requirements can increase a vendor's operating cost substantially.

Recommended Rebalancing Requirements

1) The vendor is responsible for monitoring the location of each vehicle, and, if applicable, the status of each parking corral. The vendor must continuously and predictably redistribute vehicles for consistent availability of e-bikes and e-scooters throughout all participating jurisdictions.

2) Vendors should provide a plan in their RFP response for how they intend to meet rebalancing needs, including:

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[20] NACTO, (2019), *Shared Micromobility Guidelines*, https://nacto.org/wp-content/uploads/2019/09/NACTO_Shared_Micromobility_Guidelines_Web.pdf

a. Describe the scale of the rebalancing operation in terms of staff, vehicles, and peak hours of operation.

b. Describe any alternative strategies the vendor plans to implement to reduce capacity issues at peak hours.

c. Describe service standards to meet the following objectives:

   i. Ensure vehicles are distributed across the entire service area to meet demand.

   ii. Ensure that equipment is distributed to meet peak demands.

Geographic Coverage Requirements

Closely tied to rebalancing requirements are geographic coverage requirements. Often, a major concern for jurisdictions with micromobility programs is ensuring that the programs are accessible to everyone in a community. In addition, because micromobility programs are increasingly dockless or hybrid, there is potential for vehicles to cluster in high revenue areas, like downtowns, overburdening sidewalks.

To address this issue, contracting jurisdictions can set standards for vehicle distribution. Methods for managing geographic coverage are discussed in **Table 3**.[21] Note that these methods are not mutually exclusive, but any requirements on geographic distribution may be a negotiating point for the vendors. The more robust the requirements, the less willing they may be to agree to them.

Table 7: Geographic Coverage Pros and Cons

	Description	Local Example	Pros	Cons
Distribution based on Equity Zones	Requires a certain number of vehicles (absolute or percentage of fleet) to be placed in specific pre-determined zones based on equity criteria	San Jose, San Francisco, Oakland, and Berkely	Ensures vehicles are available in all parts of the service area, not just high revenue areas Creates additional mobility options for communities that need it the most	Vehicle distribution may not match up with demand May require vendors to distribute vehicles to areas that will generate lower revenues Requires resources to monitor and rebalance vehicles
Vehicle Caps in Downtown Areas	Caps the number of vehicles (absolute or percentage of fleet) that can be operated in a downtown zone	San Francisco has a 400-vehicle cap in Downtown	Prevents vehicles from clustering in certain parts of the service area	Largely a parking mitigation strategy, but does not ensure vehicles are equitably distributed in the service area Requires operators to actively manage vehicles throughout the day to stay compliant

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[21] Transportation For America, *Shared Micromobility Playbook,* https://playbook.t4america.org/

	Description	Local Example	Pros	Cons
Vehicle Caps Based on Vehicle Density	Micromobility vehicles cannot be parked or distributed in a place above a designated density level	Not utilized locally and not recommended for San Mateo County	Prevents vehicles from clustering in certain parts of the service area	Fails to provide clear framework for where vehicles should be distributed Block face maximums need to be dynamic based on land use in the service area Parking limitations may make it more difficult for customers to end a trip on a vehicle. Requires resources to monitor and rebalance vehicles
Block Face maximums	Vendors cannot exceed a certain number of vehicles per block face	Not utilized locally and not recommended for San Mateo County	Prevents vehicles from clustering together on sidewalks and in parking spaces Helps incentivize even distribution throughout the service area	Fails to provide clear framework for where vehicles should be distributed Block face maximums need to be dynamic based on land use in the service area Requires resources to monitor and rebalance vehicles

Recommended Geographic Coverage Requirements

1) Vendor must serve the public right of way in all participating jurisdictions. An operator shall not restrict use of its vehicles to certain geographical areas without the participating jurisdiction's written permission, such as in the case of geofencing for high density areas.

2) The vendor should provide details on how it will ensure an equitable distribution of vehicles without over- or under-saturating certain areas of the service area.

3) The operator should ensure on average that x percent of vehicles are available in Equity Priority Communities, as defined by MTC.

   a. The percent standard should be based on the proportion of population and jobs in Equity Priority Communities within the pilot service area.

4) Vendors must ensure equitable distribution of micromobility vehicles by adhering to a minimum average vehicle availability by participating jurisdiction.
   a. Vehicle minimums to be determined jointly be participating jurisdictions.
   b. The study team recommends determining distribution requirements based on each participating jurisdiction's share of total service area jobs and population multiplied by 200 vehicles. For example, if a jurisdiction represented 1/4 of all people and jobs in the service area, the operator would have to maintain an average of 50 active vehicle there. The study team recommends setting jurisdiction level minimums based on 200 vehicles instead of the proposed systemwide minimum of 400 vehicles to provide operators flexibility to rebalance vehicles based on ridership demand.

Customer Service and Complaint Resolution Standards

Customer service standards are an important feature of any micromobility program. Customer service operations should be managed by operators but contracting jurisdictions should have oversight. Key features of customer service standards include:

- A customer service hotline, with representatives able to answer questions about pricing policies and terms and conditions of use, and reporting issues.
- A customer service center that provides 24-hour real-time customer support by phone or online.
- Coordination between the customer service and existing jurisdictional customer service centers, such as 311.
- Staff who are able to respond to feedback in multiple languages.

In addition to standards around a customer service center, jurisdictions should also lay out guidelines for resolving customer complaints. This includes issues such as improperly parked vehicles that are blocking the sidewalk or damaged equipment. Jurisdictions can dictate how quickly complaints need to be resolved. Most jurisdictions require vendors to comply with complaints about improperly parked vehicles within one to two hours and can reserve the right to require a faster response time if the vehicles are causing urgent safety concerns.[22]

Recommended Customer Service and Complaint Resolution Standards

1) Vendors shall maintain a customer service phone number and mobile application interface for the public to report safety concerns, complaints, or to ask questions twenty-four hours a day, seven days a week.

2) Vendors shall provide a response to the complaining party within three business days. A copy of the complaint and resolution should be included in the daily complaint log provided to the program manager.

3) In the event of a safety or maintenance issue is reported for a specific device, that vehicle shall immediately be made unavailable to users and shall be removed with in the timeframes provided in this RFP. Any inoperable or unsafe vehicle shall be repaired before it is put back into service.

4) Vendors shall provide a direct contact to a representative who is capable of responding to request from the public and participating jurisdictions for rebalancing, reports of incorrectly parked vehicles, or reports of unsafe/inoperable devices by relocating, re-parking, or removing the vehicles, as appropriate within the 24 hours of notice seven days a week.

   a. In the event a vehicle is not relocated, reparked, or removed within the timeframes specified, it may be removed by the participating jurisdictions. Vendors shall compensate costs the participating jurisdictions incurs to relocate, remove, and store devices and shall reimburse the participating jurisdictions within 30 days of receipt of an invoice detailing such costs. Vendors shall provide a direct contact to handle invoicing from the participating jurisdictions and to pick up impounded vehicles.

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[22] NACTO (2019), *Shared Micromobility Guidelines*, https://nacto.org/wp-content/uploads/2019/09/NACTO_Shared_Micromobility_Guidelines_Web.pdf

b. The program manager and participating jurisdiction reserve the right to impound improperly parked vehicles at their own discretion, even if 24 hour response period has not lapsed.

5) The program manager and participating jurisdiction reserve the right to relocate vehicles upon their own discretion to publicly accessible location that adheres to program parking standards.

6) Vendors shall keep a record of all complaints and provide a response to the complaining party within three business days. The complaint and resolution should be documented provided to the program manager on an updated basis at least every 24 hours.

Equity Programming

Without actively investing in equity, micromobility programs can neglect to serve the disadvantaged populations that may most benefit from an affordable and flexible alternative to driving. To increase disadvantaged communities' access to and participation in micromobility systems, many systems have implemented equity programs that target the various barriers. These barriers prevent many people from using micromobility. Common barriers include:

- Physical Barriers: Micromobility vehicles being physically unavailable in certain neighborhoods. To ensure micromobility is conveniently located for residents regardless of age, race, income, or ethnicity, systems should pay special attention to the distribution of micromobility vehicles and infrastructure. Vehicle availability requirements can require operators to maintain a certain level of service by geographic area to ensure an equitable distribution of vehicles.
- Cost Barriers: Micromobility systems can be cost prohibitive for some users. Many programs have special discounts available for users based on income-eligibility.
- Payment Barrier: Many micromobility systems require users to link their account to a credit or debit-card, effectively excluded those without access to bank accounts or credit. Providing payment alternatives can help bring in users who would otherwise be unable to utilize the service.
- Knowledge Barriers: Many people do not use micromobility because they either do not know how to use the service or feel unsafe doing so. To combat this, systems should devote resources to marketing, education, and community engagement targeting underrepresented user groups.
- Accessibility Barriers: Physical ability is the final major barrier to user equity. Systems should explore how to make micromobility services more accessible. Adaptive vehicles and the electrification can help broaden the user base of micromobility.

To help address these barriers, Bay Area micromobility programs already employ a range of requirements on local operators. Oakland, Berkely, and San Jose require a fixed percentage of vehicles to be available in pre-determined equity areas (i.e., San Jose's Equity Priority Area, Berkely's Equity Priority Communities, and Oakland's Communities of Concern). Most Bay Area jurisdictions require operators to offer adaptive vehicles; San Francisco requires that at least five percent of an operator's on-street fleet include adaptive vehicles. SFMTA requires operators to offer a one-year low-income customer plan that is available to anyone making below 200 percent of the federal poverty guidelines; the plan must offer at least 50% off a full-price user fee. In Oakland, operators are required to provide $5 annual memberships with unlimited 30-minute trips for any participant that qualifies for SNAP or CARE benefits in California. Several jurisdictions require operators provide an alternative means to payment to credit cards or smartphones but leave that at the operator's discretion. To avoid having to independently certify that participants meet income requirements, the study team recommends basing eligibility on whether applicants already qualify and receive state social assistance such as CalFresh.

San Mateo County should look at equity programming as part of the value proposition of an RFP response. While some aspects of equity programming should be part of a future RFP's minimum requirements, the procurement should also ask respondents to propose their own equity strategies. In cases where an equity program is not economically viable for the vendor to provide, the program manager and participating jurisdictions can explore ways to directly fund equity programming.

Recommended Equity Guidelines

1) The vendor should provide an adaptive vehicle solution. As part of the RFP response, they should outline their proposed adaptive vehicle and whether it is currently in operation in other markets. Borrowing from the City of San Jose's permit requirements, the adaptive vehicle should represent 1 percent of the vendor's fleet or 5 vehicles within the operating area (whichever number is greater).

   a. Adaptive vehicles should be priced equal or less than standard bicycles or scooters.

2) The operator should propose an alternative means to paying by credit card or smartphone.

3) The operator should ensure on average that x percent of vehicles are available in Equity Priority Communities, as defined by MTC.

   a. The percent standard should be based on the proportion of population and jobs in Equity Priority Communities within the pilot service area.

| **Adaptive Micromobility** |
| Accessibility for users with disabilities is a major challenge for micromobility. Historically, micromobility programs have struggled to accommodate these users as traditional bicycles and standing scooters are not an option for users with certain disabilities. In the last year, several dockless micromobility providers (e.g., Helbiz, Lime, and Bird) have previewed adaptive solutions spurred on by new local requirements that operators provide such solutions: |
| ▪ Motorized adaptor for wheelchairs |
| ▪ Recumbent bicycles |
| ▪ Seated scooters, tricycles, or quadracycles |
| Both Lime and Bird are piloting accessible vehicle options in a limited number of markets. Vehicles are typically reserved ahead of time, with vehicles delivered to the user's address or at a predetermined pick-up and drop-off location. While the introduction of adaptive micromobility is a welcome addition, these programs have yet to provide the same on-demand flexibility of free floating micromobility, which can be accessed without prior planning or reservations. |

4) Vendor should propose a low-income discount program for individuals at or below 200% of the federal poverty level. At a minimum, qualifying low-income applicants should have any applicable customer deposits waived. Respondents will be evaluated against one another based on the value of their proposed low-income discount.

5) RFP respondent is encouraged to propose additional equity programming as part of their total value proposition, including, but not limited to, equity-focused community engagement and marketing, rider education, and workforce development programs.

Enforcement Requirements

The best guarantee of operator compliance is selecting a vendor through the RFP process that will be a constructive and responsive partner for the program manager. Unfortunately, sometimes things go wrong, and any operating contract needs to include some sort of enforcement mechanism to guard against non-compliance. There are several common approaches to vendor enforcement:

- **Fines:** Several jurisdictions to the Bay Area levy fines on micromobility operators that fail to meet operating standards. Most commonly fines are applied to improperly parked vehicles. For example, Redwood City charges operators a $99/hour impound fee for any vehicles impounded for being improperly parked. Oakland states that upon request, the operator must pass at least 50 percent of any parking fines on the responsible user.

- **Levy Damages:** Many jurisdictions require the operator to provide a security deposit or performance bond from which the jurisdiction can deduct the cost of any damages caused to public property. For example, the City of San Jose requires operators to provide a deposit of $10,000 and the City of Palo Alto requires a performance bond of $130 per vehicle. San Francisco previously required micromobility vendors to fund a $25,000 public property repair and maintenance endowment fund, paid in $2,500 annual installments over 10 years. The City eliminated the endowment requirement as it had not been used and was costly to administer.

- **Fleet Reduction or Suspension of Operations:** Some communities reserve the right to reduce an operator's permitted fleet size or suspend operations entirely if the operator is out of compliance with regulations. Ideally, for the San Mateo County, this would be a move of last resort as any reduction in vehicle availability would also hurt the user.

Some elements of program enforcement will need to be undertaken by the program manager and/or the governance committee; however, other entities within each participating jurisdiction may also have a role to place. Local police forces, for example, could have authority to ticket people riding a vehicle recklessly or on the sidewalk or for citing vehicles parked illegally. Other local agencies, such as a parking authority, may also support enforcement activities based on local rules and regulations. Before a program is launched, the program manager should engage with local police forces to ensure they understand the existing rules regulating micromobility and the means to coordinate effectively with the program manager and operator.

Recommended Enforcement Strategy

1) The program will require the selected operator to provide a $10,000 deposit or performance bond to cover the cost of any damage to property or the right-of-way caused by their operations.

2) The operator will be fined for any illegally parked vehicles that are removed by the program manager or staff from participating jurisdictions. The fine will include $99 initial fine, with $99/hour levied until the vehicle is retrieved by the operator.

3) The program manager and participating jurisdictions reserve the right to suspend operations in one or more of the participating jurisdictions if the operator violates their agreement.

   a. The operator has 10 calendar days to file a written appeal to a review panel consisting of the members of the program's governance committee
   b. A hearing of the appeal must be scheduled within 10 days of the filing
   c. The program governance committee must issue a decision within 10 days of the hearing.

Program Fees

Charging operator fees helps offset the cost of administering a micromobility program. In developing a program fee structure, San Mateo County should consider the total value proposition of a vendor. For example, a vendor may pay high fees but not offer in-kind services such as a discount equity program. Higher fees may also be passed onto consumers in the form of higher costs. Generally, a community's ability to set

higher program fees is tied to the total ridership potential. The City of San Francisco for example has comparatively high fees compared to San Jose, reflecting in part differences in micromobility ridership demand.

Program fees can take several forms:

- **Application Fee:** Many jurisdictions charge applicants a fee to cover the cost of applicant review and permitting. This type of fee is likely not appropriate for the regional micromobility program envisioned as a vendor would be acquired through an RFP process.

- **Fixed Permit Fees:** Some communities charge a fixed permit cost regardless of the number of vehicles provided. These fees can take the form of a security deposit (see "Enforcement Requirements" section) or as a non-refundable fee. For example, San Francisco charges each operator a $38,340 program fee and an additional $100 per vehicle bike rack fee and Oakland charges vendors an annual $30,000 permit fee; these fixed costs are likely much higher than what the market would bare in San Mateo County.

- **Per Vehicle Fees:** Per vehicle fees are the most common fee structure in the Bay Area. Some jurisdictions (e.g., Oakland) charge a per vehicle fee in addition to a fixed permit fee. More commonly a per-vehicle fee is charged in lieu of permit fee. The per-vehicle fee should be based on the maximum number of permitted vehicles. The benefit of a per-vehicle fee is that it is scalable. If the program manager and operator agree to increase the fleet size, the fee would increase in tandem. Examples of local per-vehicle annual fees include San Jose ($97), Oakland ($64), Berkeley ($64),

- **Per Ride Fee:** A few local jurisdictions, including Redwood City, levy fees on operators on a per-ride basis. A per-ride fee reduces the sunk cost of operating in a jurisdiction. If a program underperforms ridership expectations, the operator in turn would have to pay fewer fees. The downside of a per-ride fee is that it reduces revenue certainty for the jurisdiction.

- **Revenue Sharing Agreement:** Revenue sharing agreements are less common than the other fee types mentioned but are utilized by some other systems. The agreements entitle the jurisdiction to a share of operating revenue once ridership or revenue receipts exceed a certain value. Due to the reporting complexities and rarity of this model, the study team does not recommend pursuing a revenue sharing agreement as part of the pilot.

While ideally San Mateo County could recover their program management costs through operator fees, a higher fee could run counter to other program objectives. In other markets, providers have struggled to provide bike share at no cost. While the economics of scooters is better for private operators, a desire for robust equity programs or reasonable fare levels will reduce somewhat to make a profit. San Mateo County may be better served by setting a lower operator fee to exchange for things like program equity requirements.

Recommended Operator Fees

The study team recommends that San Mateo County keep program fees low in exchange for in-kind services like a discounted equity program and provision of adaptive vehicles. While the final pricing can be adjusted to help meet any program funding needs.

1) San Mateo County will require the selected operator to provide a $10,000 deposit or performance bond to cover the cost of any damage to property or the right-of-way caused by their operations.

2) The program operator would pay an operating fee of $50 per vehicle per year. A lower cost is recommended compared to neighboring jurisdiction because of the desire to minimize any necessary subsidy, a recognition that the San Mateo market is not as big as San Jose or San Francisco, and a desire for strong equity investments by the operator.

User Fees

A community's ability to dictate user pricing for micromobility typically depends on the business model. While publicly owned or subsidized systems may control their program's user pricing, privately owned and operated programs typically retain the right to set their own prices based on market conditions. In many markets, competition between vendors provides some check on increasing user costs. As the pilot programmed envisioned for San Mateo County would only have one vendor, the county should consider the proposed user cost as part of the total value proposition of an RFP. This would establish user pricing as one of the competitive factors determining the winning bidder.

Table 8: Comparison of Single Ride User Fees among Bay Area Micromobility Programs

Jurisdiction/Program	Pricing
Bay Wheels (e-bikes), regional	$3.49 to unlock and $0.30 per minute to ride. $2.00 fee when parking outside a Bay Wheels station. Note that annual or monthly members do not pay a fee to unlock and receive a 33% discount on per-minute ride costs.
LINK (e-scooters), Oakland	$1.00 to unlock and $0.39 per minute to ride
Lime (e-scooters), San Jose	$3.15 for first seven minutes, then $0.33 per minute
Lime (e-bikes), Sacramento	$1.00 to unlock and $0.32 per minute to ride

Recommended User Fee Policy

1) As part of the RFP response, operators shall propose their user fee structure, including (but not limited to), refundable deposit costs, unlock fees, cost per minute, and any subscriptions or long-term passes.
    a. The average cost per trip to the consumer will be an evaluation factor in the RFP.
    b. The operator commits to keep the specified user fees unchanged for the first year of operations, with a 3 percent escalation for any option years.
        i. The operator can retain the right to introduce any additional pricing options as long as they do not conflict with the user fees established in the contract.
    c. Changes to the contract-specified fee structure or pricing can only be made with joint agreement between the program manager and operator.

2) Vendor should propose a low-income discount program for individuals at or below 200% of the federal poverty level. At a minimum, qualifying low-income applicants should have any applicable customer deposits waived. Respondents will be evaluated against one another based on the value of their proposed low-income discount.

Subsidy and Revenue Sharing

The operation of a large regional micromobility program may require some level of public subsidy to support its long-term viability. Offering a subsidy is beneficial for a few reasons:

■ Provides public-sector partners with more leverage to place requirements or extract commitments from the operator.

- Increases the long-term sustainability of the program by establishing a predictable source of funding of the operator.

- Can be used the reduce the price of the program to the consumer, when tied to an overall price cap or equity program.

There are a few examples of state and local funding being used to subsidize operations of a private micromobility program. In Sacramento, for example, Lime, which operates both scooters and e-bikes in the city, is subsidized by the Sacramento Area Council of Governments (SACOG). SACOG provides a monthly per bike stipend when the trips per vehicle per day falls below a certain threshold. This stiped only applies to Lime's fleet of e-bikes, not scooters. In addition, Lime shares revenue with SACOG and its partners when the trips per vehicle per day rises above a certain threshold. SACOG and Lime entered into this agreement in late 2020, when ridership was particularly uncertain and unstable due to the COVID-19 pandemic. This model helps incentive a micromobility operator to stay in a market, even if ridership dips. Details on SACOG and Lime's agreement are shown in **Table 8.**

Table 9: SACOG-Lime Subsidy and Revenue Sharing Details

Payment Type	Trips per Vehicle per Day (TVD)	Payment Amount
Subsidy Payments (From SACOG to Lime)	0.5 TVD	$0.70 per active vehicle in service per day
	1.0 TVD	$0.62 per active vehicle in service per day
	1.5 TVD	$0.55 per active vehicle in service per day
	2.0 TVD	$0.38 per active vehicle in service per day
Revenue Sharing (From Lime to SACOG)	3.5 TVD	$0.05 per trip

In addition to incentivizing a vendor to continue operation, public funding can subsidize an equity pass program. This ensures that a micromobility program in the region is accessible for all potential customers. Tying public funding to equity passes relieves the private operator from providing reduced cost passes and helps maintain public involvement in the program.

Finally, public funding could also be used to subsidize infrastructure for micromobility. This includes the construction of bike lanes as well as the purchase and installation of micromobility parking corrals. Improved infrastructure indirectly supports the micromobility program, helping make it more appealing and viable for users.

It is unclear whether a subsidy or revenue sharing agreement is necessary or warranted for a pilot micromobility program in San Mateo County. Unlike a no-cost system, providing a subsidy introduces new administrative complexities to a multi-jurisdictional program, such as the need to determine how costs are allocated among jurisdictions and the program manager.

Recommended Subsidy and Revenue Sharing Guidelines

1) As part of their RFP response, vendors should indicate whether a subsidy would be required to meet the contract terms.

a. Any request for subsidy should be evaluated as part of a vendor's total value proposition.
b. As an alternative to relying on the RFP to solicit feedback on subsidy requirements, San Mateo County could implement a two-step procurement process, starting with a request for information (RFI). The RFI would be used to determine the feasibility of proposed operating requirements and whether additional public fundraising is needed to support the system. RFI respondents can be invited to then bid on the subsequent RFP.

2) The vendor should propose a detailed description of how they will use the subsidies from the participating jurisdictions, including how the subsidy can support the implementation of an equity program.

3) Ideally San Mateo County would avoid a subsidy or revenue sharing agreement as part of the pilot to reduce the program's overall complexity. Most privately owned and operated micromobility programs (notably scooter programs) are able to sustain operations without a public subsidy. Minimizing the need for revenue or cost sharing among participating jurisdictions would simplify things in the case of a jurisdiction departing or joining the system.

Program Rollout and Expansion

The study team envisions that San Mateo County would implement a multi-jurisdictional micromobility program initially as a pilot. The benefit of this approach is that a pilot allows the program manager and participating jurisdictions to tweak their procurement, program management, and governance structure in the face of changing real-work circumstances. The pilot could also serve as a proof of concept for any jurisdictions that are interested yet hesitant to participate. Developing the program as a pilot does raise a few questions that this section seeks to answer:

1) How can jurisdictions join the program the program once it is established?
2) How can a jurisdiction exit the program? What implications does an exit have on the viability of the rest of the system?
3) How does San Mateo County evaluate the pilot program?

Adding or Eliminating Jurisdictions from the Program

The study team envisions that the pilot program would last a minimum of one-year, with the option to extend the agreement in 12-month intervals. All participating jurisdictions should commit to remaining within the program for the entire one-year period. At the end of the one-year period, each participating jurisdiction can choose to remain within the program or exit the partnership. In the case that a jurisdiction leaves the program, it will be up to the remaining jurisdiction and operator to decide whether to execute a modified option year, initiate a new procurement, or halt the program.

While participating jurisdictions are expected to participate in the pilot for at least its one-year minimum duration, they do reserve the right to suspend micromobility operations if the vendor fails to meet the contract terms and conditions.

Jurisdictions are invited to join the regional program as well. Similar to the scenario of a jurisdiction departing form the program, the program manager and operator will have to come to a joint agreement on whether the existing contract can be expanded to include a new jurisdiction. An operator may balk at operating in a new community based on its relative geographic isolation from the rest of the program, overall ridership potential, and financial performance of the existing pilot.

In the case of a jurisdiction joining or leaving the program, the following factors need to be considered:

- **Fleet Size and Distribution Requirements:** Changing the geographic bounds of the system will impact the fleet size and distribution requirements. The program manager, governance committee, and operator will have to come to an agreement on updated fleet minimums, maximums, equity distribution requirements, and jurisdiction distribution requirements.
- **Local Operating Agreement:** The study team envisions that each participating jurisdiction would have a local operating agreement that identifies no-ride zones, no-parking zones, slow-zones, enforcement body with the right to impound vehicles, and local points of contact. Any new jurisdictions would need to prepare their own operating agreement with the support of the program manager,. In the case of a jurisdiction leaving the program, the departure may trigger revisions to other local operating agreements (e.g., banning trips from certain routes linking to the adjoining community).
- **Cost and Revenue Sharing:** The change in the number of participating jurisdictions could impact how costs and revenue are allocated. Unless funded through an external source, participating jurisdictions would be required to cover any administrative costs or operating subsidy that remains after accounting for operator fees and revenue sharing. This could result in the cost per jurisdiction increasing as certain costs, notably administrative cost, do not grow or contract proportional to system size.

Once a pilot is established, the program manager and governance committee may not be able to accommodate any requested changes to the regulatory or management structure of the program made by additional jurisdictions looking to join. The best opportunity to revise regulations, requirements, and the program government structure are at the conclusion of the pilot.

Contractual Relationships Between Participants

There are a wide array of ways that a system can be organized contractually in San Mateo County. The study team finds that in other communities, the contractual model is often driven by local policy and legal concerns that emerge during the program development phase of the project. The study team recommends that San Mateo County try to pursue as simple of a contractual model as possible to reduce contracting and legal complexity. One solution is the following:

- The vendor contract is between the operator and the program manager
- The program manager shall be responsible to a governance body composed of all participating jurisdictions. Each jurisdiction will have an agreement with the program manager outlining their program responsibilities and how decisions are to be made within the governance committee. (see sample governance agreement provided separately)
- The contract with the vendor will deputize jurisdictions with certain powers and responsibilities without requiring them to be party to the contract.

Evaluating Pilot Performance

Micromobility pilots are intended to be temporary and eventually San Mateo County will have to decide whether to transition its pilot to a more permanent program. Other communities have used their pilot program to refine their contracting and management strategies, incorporating lessons from pilot programs into future ordinances and procurements. Before concluding its pilot program, the program manager or partner organization should prepare a pilot evaluation that provides guidance on the future of micromobility in the county. Elements to consider in such an evaluation include:

1) How well did the micromobility program meet initial goals and objectives?

2) How did people utilize the service? Did the program help fill a mobility need in the community?

3) What were common complaints, shortcomings, or issues with the system? How could future procurements or regulations address these issues?

4) How well did the governance structure function? Did the pilot raise any concerns around the sustainability of the governance model, especially if the program were to expand to more jurisdictions?

5) Did program administrative needs and costs differ from expectations? What additional resources would need to be identified to effectively staff a larger multi-jurisdictional system?

6) Did any issues arise from relying on a single operator in the pilot program? Is there a need to shift to a multi-operator permit program?

7) Did the pilot raise any concerns around market or operator viability? Were any regulations or requirements found to be burdensome on the operator and threaten overall program viability? Did the market produce sufficient demand for the operator or would a future program require a subsidy to sustain operations?

8) How effective was the user fee structure at attracting and retaining ridership? Should a future contract take a more, less, or similarly proactive role in setting user fees/pricing?

9) How effective was the operator fee structure. Should a future program adjust the fees, including operating fees and security deposits.

10) How should enforcement policies be adjusted?

The pilot evaluation report should establish specific recommendations around how governance, program management, cost sharing, and revenue sharing can be adjusted based on lessons learned. San Mateo County could elect to replace the pilot with a second pilot to continue to refine management policies or establish a permanent program. For example, the City of Alexandria, Virginia established a Phase II pilot in 2020 that introduced several program revisions based on lessons learned from their Phase I micromobility pilot, which operated during 2019. At the end of 2021, the city adopted a permanent micromobility program.

Mitigating Risk

Developing a micromobility program generates risks that the program manager and participating jurisdictions will need to work toward addressing and minimizing. This section describes possible risk scenarios and mitigation strategy.

Liability Risks

Legal liability is a frequent concern raised by communities looking to establish a micromobility program of their own. The insurance requirements outlined in this report follow standard language used by systems across California. Any operator must meet or exceed these insurance requirements and agree to indemnify the participating jurisdictions, their staff, and elected officials from legal liability. Fortunately, San Mateo County can rely on the micromobility industry's decade plus of operating in the United States. Communities, including the county's Bay Area neighbors, have already successfully navigated the issue of jurisdiction liability.

Operator Exit

The abrupt departure of an operator is another common risk. The micromobility industry is still young and there have been several examples of operators ceasing business or pivoting to a new business strategy. While San Mateo County cannot fully eliminate the risk of operator exit, there are several mitigating strategies:

- ■ RFP Due Diligence: The best way to reduce the likelihood of operator exit is to conduct due diligence during the RFP process. Bidders should be able to demonstrate they have the necessary capital to meet and sustain their operating obligations through the life of the contract. Bidders should have a track-record of successful operations in other communities and provide references upon request. The operator's history should be considered when assessing relative risk.
- ■ Ability to Charge Damages or Fines: To deter an operator from exiting a contract before the end of its term, San Mateo County may reserve the right to keep any remaining security deposit or performance bond provided by the operator.
- ■ Multiple Operators: Many jurisdictions permit multiple vendors to operate to reduce their dependency on any one vendor. For San Mateo County, the study team recommends an initial pilot with only one vendor to reduce administrative complexity, but the program should consider allowing at least one other operator to participate in the program once the pilot concludes.

Funding Risk

Another source of risk is the loss of funding to support program administrative and (if applicable) subsidies. There are several strategies that could make the program more resilient in the face of changing funding:

- ■ Minimize Reliance on Annual Appropriations: Annual apportioned funding sources, such as general fund revenue, are intrinsically unstable as their availability is not guaranteed from year to year. Ideally the program can rely on more stable streams of funding, such as multi-year funding commitments.
- ■ Diversification: The more funding sources used, the more resilient a program is to the loss of any single revenue stream. San Mateo County should consider how it can draw revenue from a range of sources, from local jurisdiction contributions to operator fees, development proffers, grants, philanthropic giving, and sponsorships.
- ■ Minimize Costs: By minimizing program management costs and subsidies, San Mateo County can reduce their funding risk as well. A program that costs $200,000 a year to manage, will be easier to fundraise for than one that costs double. Efforts to minimize costs can run counter to other program objectives.
- ■ Establish a Program Endowment: Not every dollar of funding is equal. Some funds might have to be spent within the fiscal year, while others may be restricted to specific program uses. One strategy to establish greater financial self-sufficiency is to rely on the most restrictive funding sources first, and bank unrestricted funds (e.g., operator derived fees) for future needs. San Mateo County could even explore establishing an endowment for surplus revenue that can grow over time to cover future operating shortfalls.

Conclusion

This technical memorandum outlines a set of proposed requirements and strategies to procure and manage an interjurisdictional micromobility program. The study team developed recommendations based on the outcome of previous project deliverables, notably the Task 5 Technical Memorandum, which concluded with a recommendation for a 500-vehicle micromobility pilot.

The study team envisions that the pilot will be established through a competitive procurement process that will select one vendor to own and operate a micromobility program for a one-year term, with additional optional years. The benefit of an RFP is that participating jurisdictions can evaluate bids from several vendors and select one that represents the best value proposition for the county. At the conclusion of the pilot, the study team envisions that San Mateo County will incorporate lessons learned from the pilot into a more permanent program.

The RFP would also be the vehicle to establish operating requirements. The recommended program guidelines represent a minimum scope of services that any RFP respondent would be required to meet. While the final operating requirements will be determined by the program's governance committee, San Mateo County is fortunate to have a wide established body of practice to borrow from. Jurisdictions across the country, including Bay Area neighbors and even San Mateo County communities like Redwood City, have already established program requirements. The study team sought to recommend program requirements that conform with established practice elsewhere.

Even the best designed micromobility program faces unknowns and risks, from jurisdictions departing from the program, to funding shortfalls or vendor bankruptcy. To help address these concerns, the study team has provided a range of mitigation strategies for consideration.

The final recommendation of the study team is that any future micromobility program in San Mateo County should strive for simplicity where possible in its final program requirements. Even among Bay Area jurisdictions, the length and complexity of micromobility ordinances and regulations vary widely. Even the most complex regulations do not guarantee against negative program outcomes. A successful micromobility program is a partnership between the community and operator. As such, effective program regulations should be matched with a productive relationship between the program manager and operator. To ensure such a relationship, the program should seek out operators with a positive track record of performance. The program requirements should provide the operator predictability and the opportunity to generate sufficient revenue.