To: Kim Wever, C/CAG

From: Alta Planning + Design

Date: October 12, 2022

Re: San Mateo Micromobility – Final Plan DRAFT

Source: Alta Planning + Design

I. Executive Summary

Introduction

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.[1] 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 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.

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

- **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.

Program Vision & Goals

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.

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**

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 negative 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, and 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 & 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 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[2], 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 have a minimum of 500 vehicles and 50 stations/hubs (if a docked or hybrid

[2] Equity Focus Areas are consistent with the methodology used in the 2021 C/CAG San Mateo County Comprehensive Bicycle and Pedestrian Plan and includes metrics such as share of the population that is non-white, median household income, housing and transportation cost burden, and share of households who do not own cars.

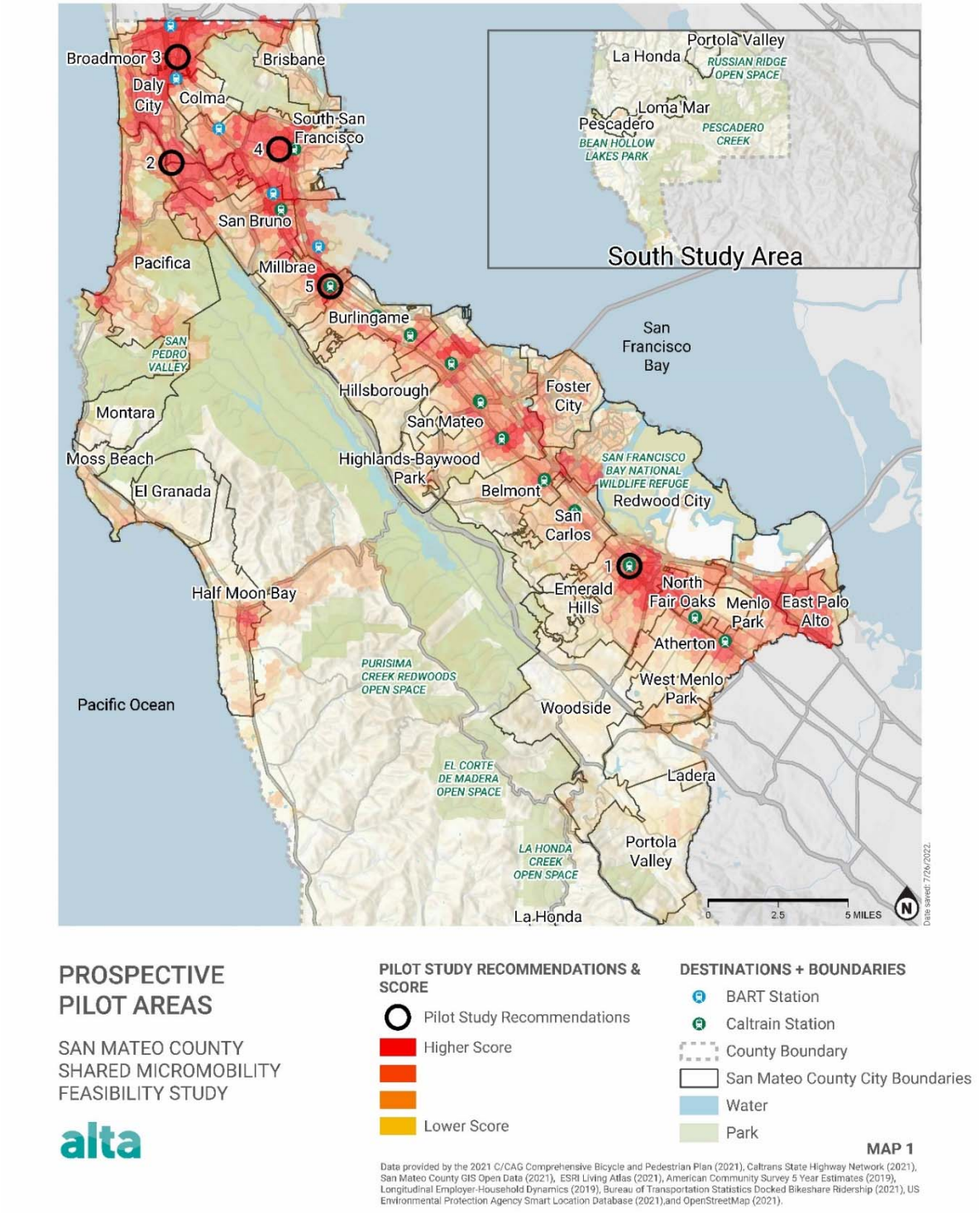
system is chosen). This would include 1.6-2.0 designated parking spots per bike and 16 hubs per square mile in high density locations. The three additional areas identified as candidates for a pilot program include: Pacifica, South San Francisco, and San Bruno; South San Francisco and Unincorporated 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

An 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.



Source: Alta Planning + Design

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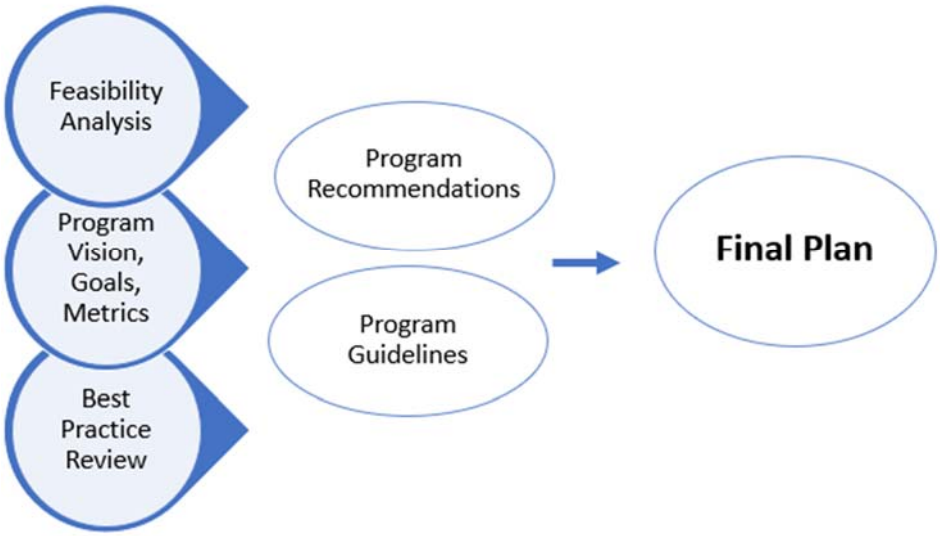
- **What would success look like for a program in San Mateo County?** Working with stakeholders to establish a vision, goals, and objectives that articulate what outcomes a shared micromobility program would need to support.

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

- **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.

This process and its findings are summarized in the following sections of the San Mateo County Shared Micromobility Feasibility Study final plan.



Source: Alta Planning + Design

Source: smccvb.com

IV. 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[4], and 57.7 miles of coastline[5] (**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.

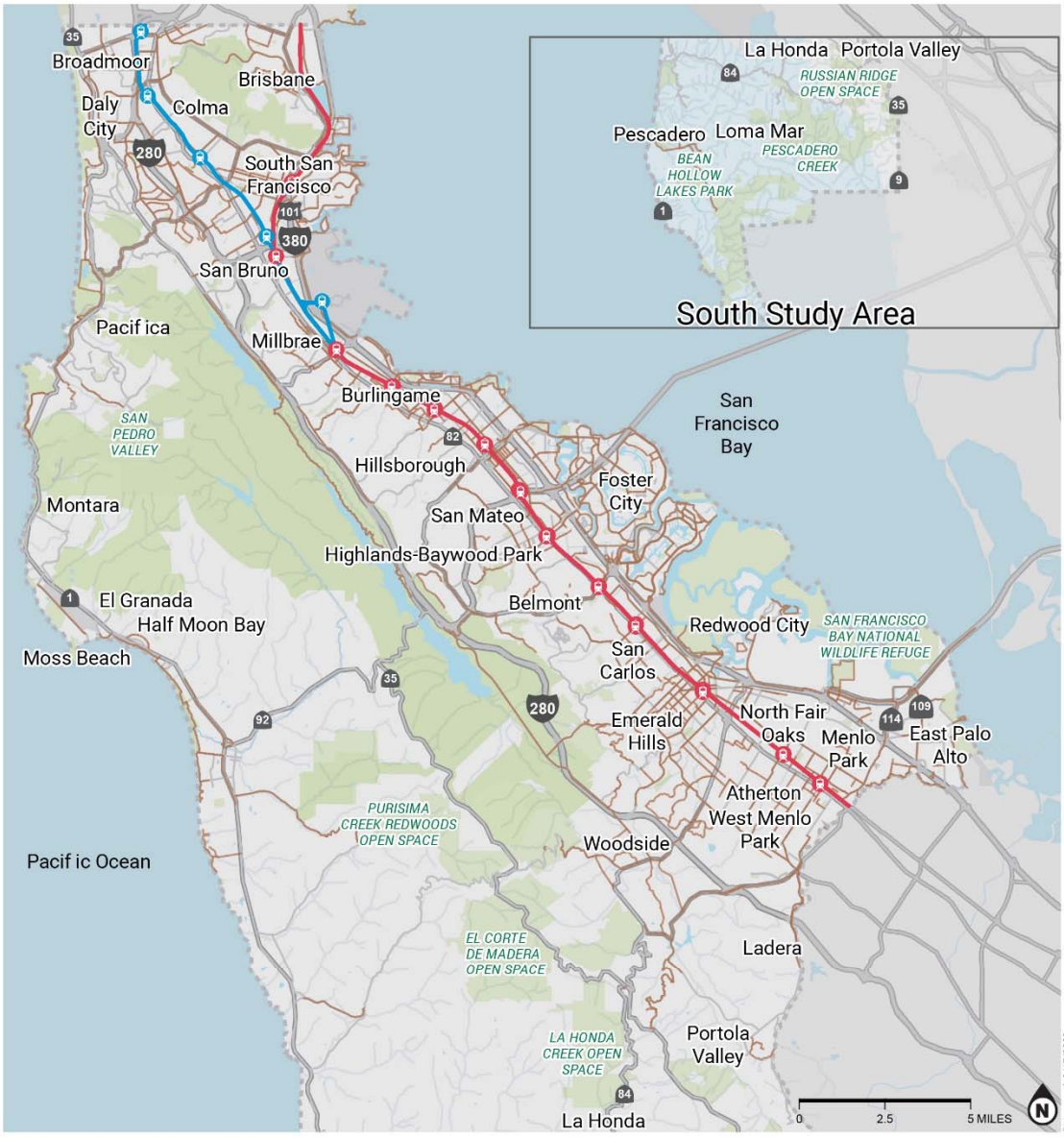
The County has substantial transportation features, including multiple freeways, the San Francisco International Airport, and two commuter rail systems: Bay Area Rapid Transit (BART) and Caltrain. The County also has bus service provided by the San Mateo County Transit District (SamTrans) and a notable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

[4] *https://www.census.gov/quickfacts/fact/table/sanmateocountycalifornia/POP010220#POP010220*
[5] *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

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Gepwerw$Wxexi$Lmkl{e}$Rix{svc$6465-WerQ exis$3syrx}$KMWTirHexe$6465-$
erh$TirWxiixQ et$6465-2$

Planning & 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. Support for shared micromobility in an existing plan, however, does not mean a local jurisdiction is for or against a potential 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	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[6] 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 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.

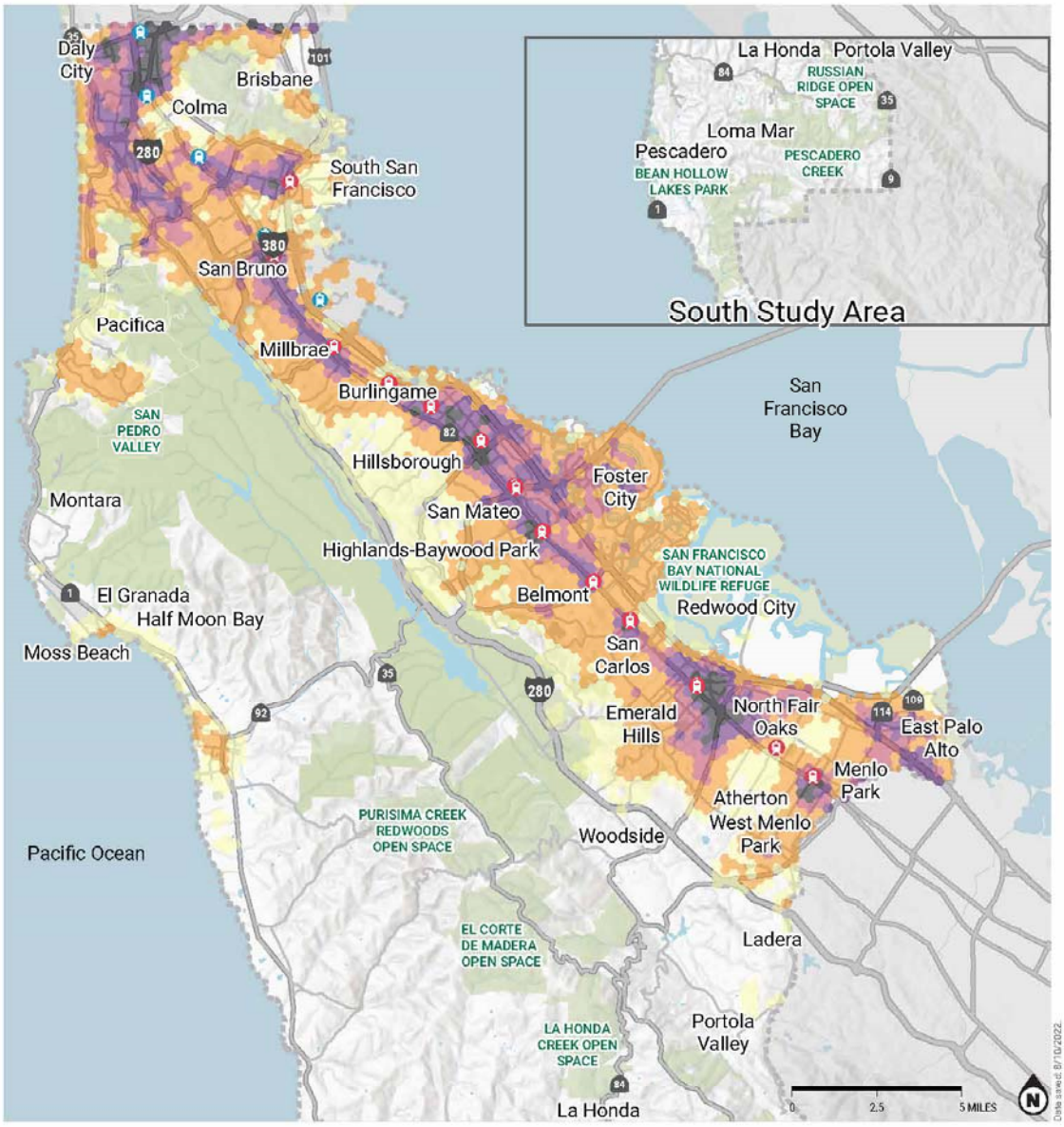
While the majority of high demand areas was found in the populous bayside of San Mateo County, there are other areas of note which should be included in the discussion. These are:

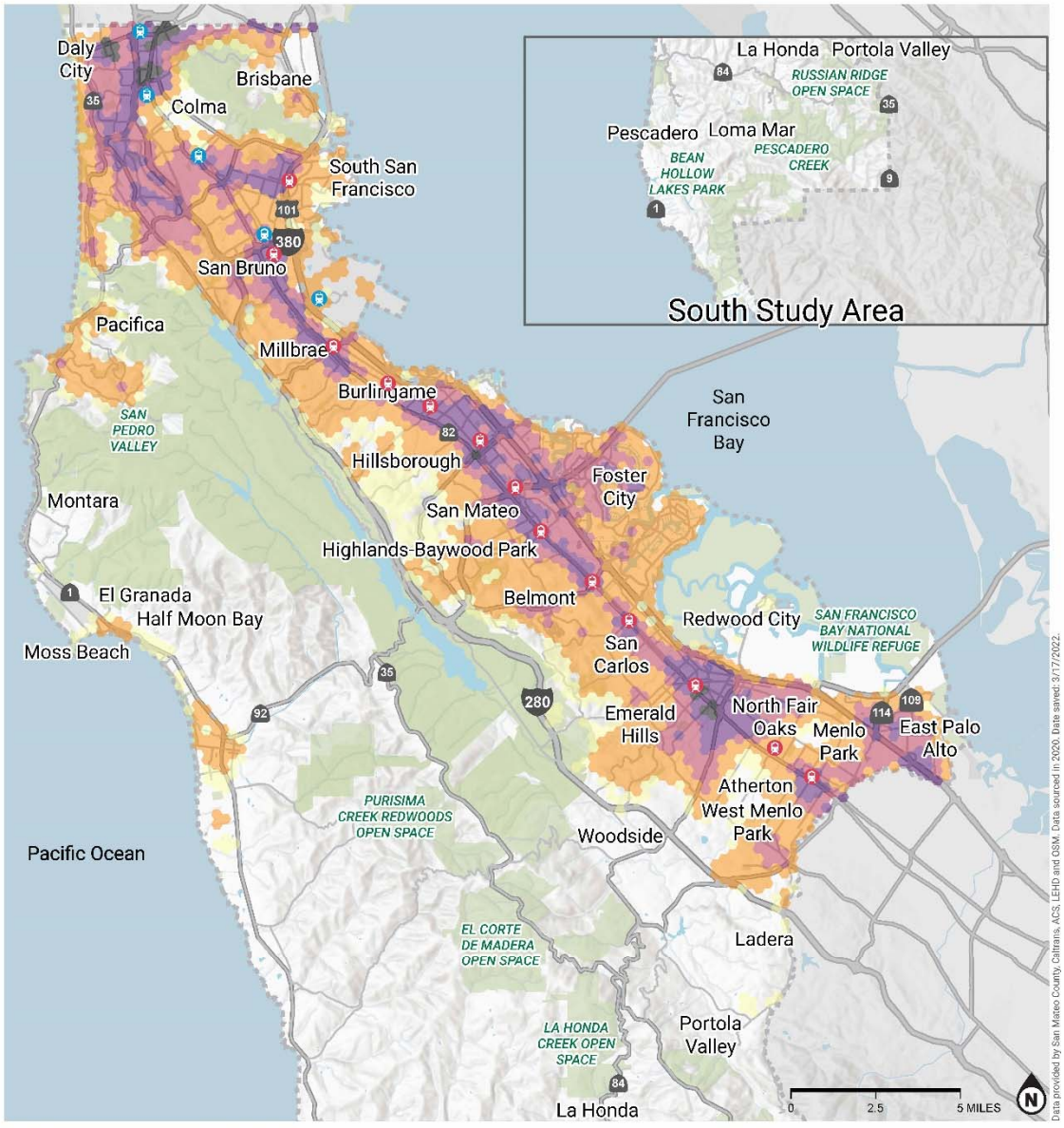
[6] *Modeling the Demand for Shared E-Scooter Services (10/21/2021, TRB). https://journals.sagepub.com/doi/10.1177/03611981211051620*

- **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, 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.


Daly City
Brisbane
Colma
South San Francisco
San Bruno
Pacifica
Millbrae
Burlingame
SAN PEDRO VALLEY
Montara
Hillsborough
Foster City
San Mateo
Highlands-Baywood Park
Belmont
El Granada
Half Moon Bay
Moss Beach
San Carlos
Redwood City
SAN FRANCISCO BAY NATIONAL WILDLIFE REFUGE
San Francisco Bay
Emerald Hills
North Fair Oaks
East Palo Alto
Menlo Park
Atherton
West Menlo Park
Woodside
PURISIMA CREEK REDWOODS OPEN SPACE
Pacific Ocean
EL CORTE DE MADERA OPEN SPACE
Ladera
LA HONDA CREEK OPEN SPACE
Portola Valley
La Honda
La Honda
Portola Valley
RUSSIAN RIDGE OPEN SPACE
Loma Mar
Pescadero
BEAN HOLLOW LAKES PARK
PESCADERO CREEK
South Study Area
0
2.5
5 MILES
N
DOCKED PROJECTED DEMAND MAP
SAN MATEO COUNTY SHARED MICROMOBILITY FEASIBILITY STUDY
alta
PROJECTED DEMAND
More Demand
Less Demand
DESTINATIONS + BOUNDARIES
Caltrain Station
BART Station
Park
Water
County Boundary



NON-DOCKED PROJECTED DEMAND MAP

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PROJECTED DEMAND

More Demand

Less Demand

DESTINATIONS + BOUNDARIES

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

MAP 3

Hexe$tvszmnih$f}kliG3GEK$$sq tvilirwzi$Pmg}gpi$erh$Tihiwxmer$Tmer$6465-$Gepwerw$
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W>exmxmgw$Hsgoih$Fmiwlevi$Vmiwlmt$6465-2$

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 4**. 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

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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

MAP 4

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.

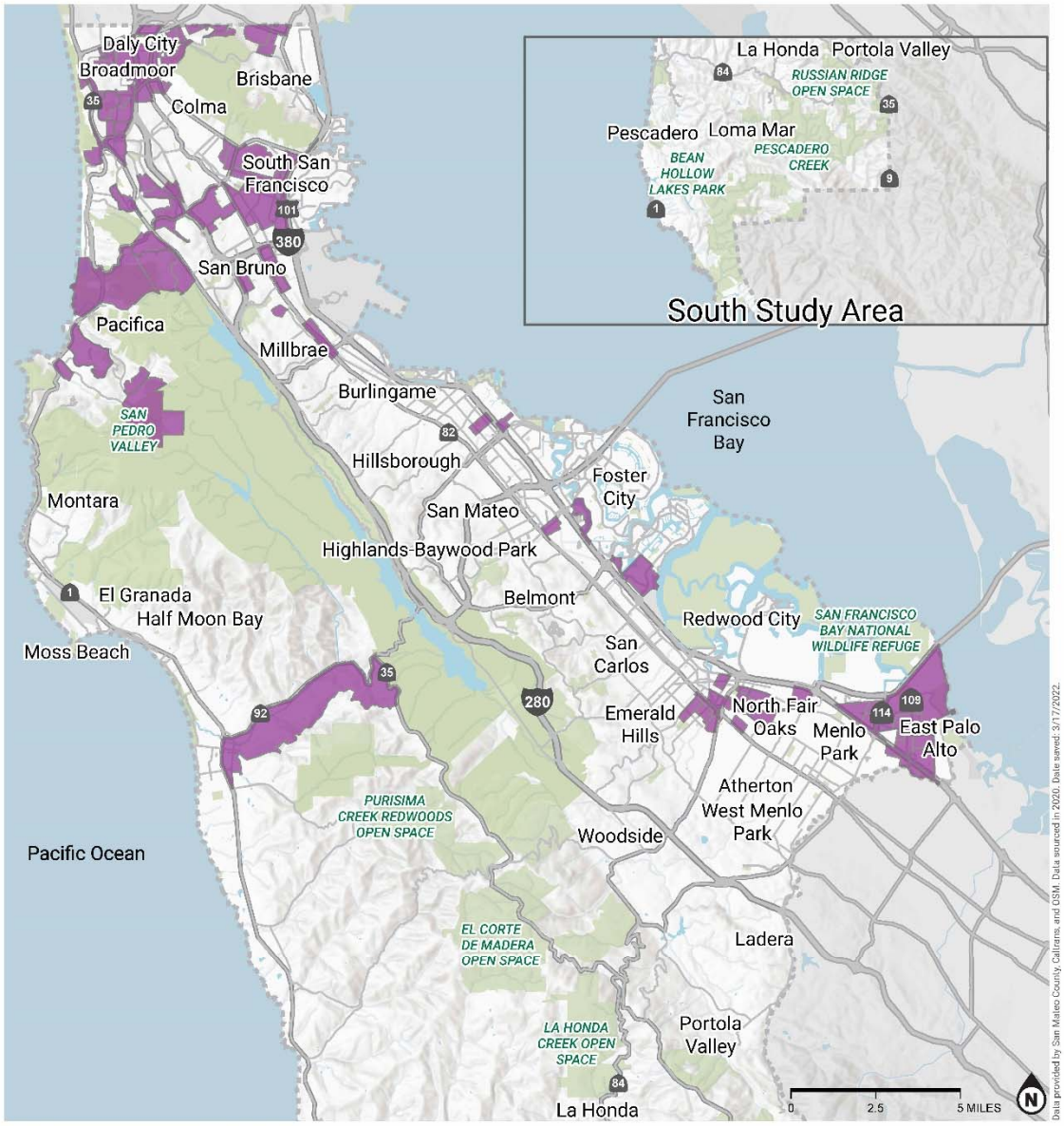
The collision analysis used collision data analyzed for the San Mateo County Safe Routes to School (SRTS) Strategic Plan, in which collisions from 2014-2020 were agglomerated to the closest roadway. While all traffic-related collisions were reviewed within San Mateo County, collisions were weighted more 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.[7] The high-collision corridors are also useful to compare with the equity focus areas.

Results

Maps 5 and 6 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.

[7] *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

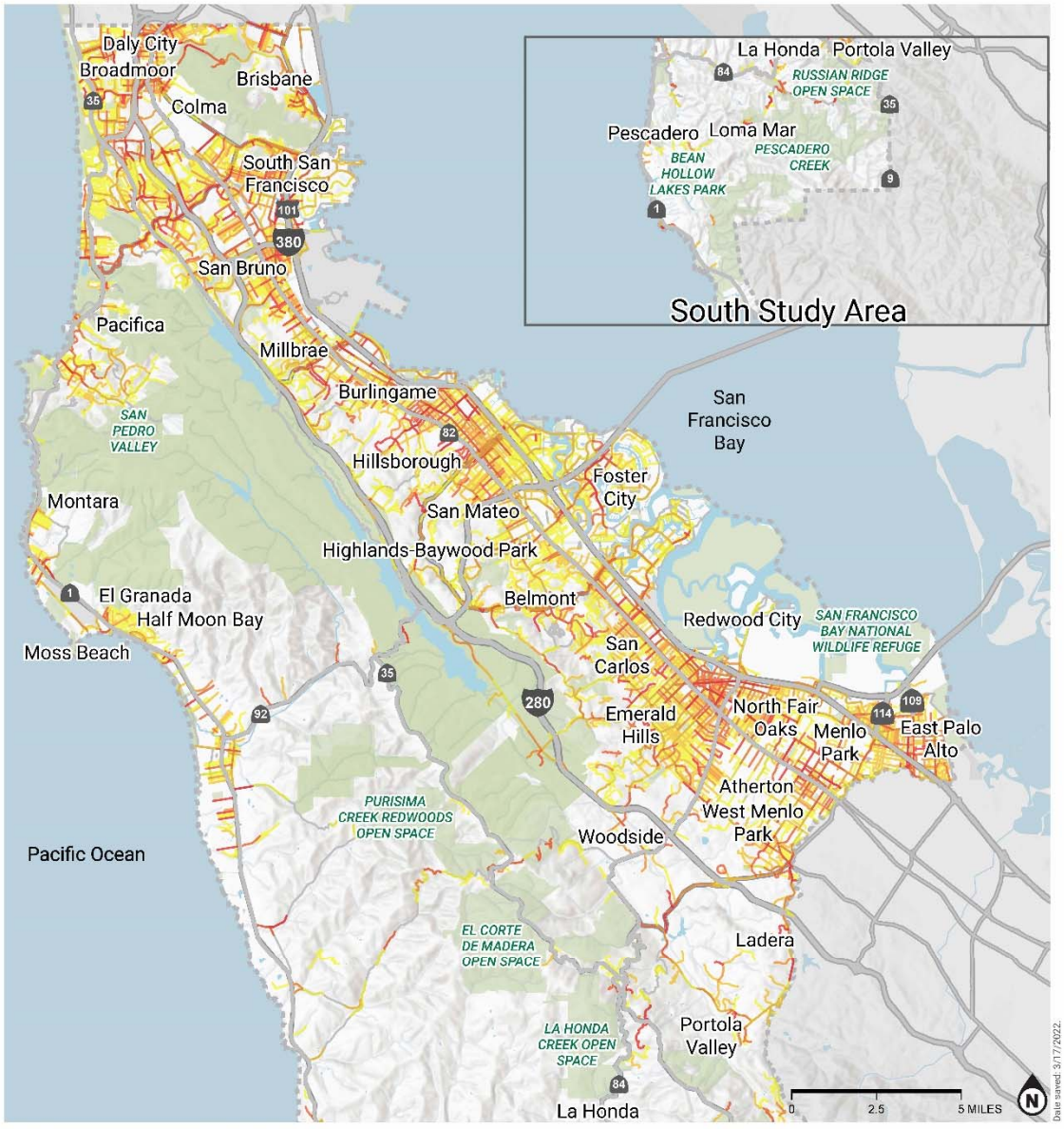
DESTINATIONS + BOUNDARIES

Water

County Boundary

MAP 5

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

alta

SEVERITY WEIGHTED COLLISION INTENSITY

High

Low

DESTINATIONS + BOUNDARIES

Park

Water

County Boundary

MAP 6

V. Vision & 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 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. 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 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

Goal	Objectives	Indicators	Data Collection
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

Goal	Objectives	Indicators	Data Collection
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.	*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

Goal	Objectives	Indicators	Data Collection
	• 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.	*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 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		Value of service to community	Annual Survey

Goal	Objectives	Indicators	Data Collection
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.	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 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.*

VI. 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

Location	SF Bay Area, CA • San Francisco ▪ San José • Oakland ▪ Berkeley • Emeryville
Population[8]	• 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

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

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.

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

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

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.

Source: mobilemarketingmagazine.com

VII. 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. 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 2. 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 andintegration 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.

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. 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 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:

- 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 limited infrastructure for parking locations/hubs. 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; $62,500 for 25 mobility hubs) • 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 - $220,000 for program management and oversight, net of permit revenue. • $50,000 annually per year for program evaluation	• $62,500 up front for installation/construction of hubs
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 • Subsidies of $100,000 annually to the vendor to cover costs associated with operations and maintenance of the program[9] • 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 - $320,000 for program management and operator subsidies, net of permit revenue • $50,000 annually for program evaluation	• $62,500 up front for installation/construction of hubs

[9]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)[10] • $50,000 annually for program evaluation	• $250,000 in annual state-of-good repair costs • $1.6 million in start-up capital costs

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 one 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.*

[10] 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).

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 Error! Reference source not found.**Table 4.** 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.[11]

Table 4. Pilot Study Characteristics and Scoring

Characteristic	Method + Scoring of Association of Hexagon	Weight
Equity Focus Areas (EFA)[12]	• Hexagon in EFA = 1 • Hexagon not in EFA = 0	25%
Proximity to Transit[13]	• Within ½ mile of commuter rail = 1 • Within ¼ mile of high frequency transit = 0.5	15%

[11] 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.
[12] Equity Focus Areas are consistent with the methodology used in the 2021 C/CAG San Mateo County Comprehensive Bicycle and Pedestrian Plan.
[13] Commuter rail includes Caltrain and BART. High frequency transit includes buses with 15 minute headways.

Characteristic	Method + Scoring of Association of Hexagon	Weight
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%

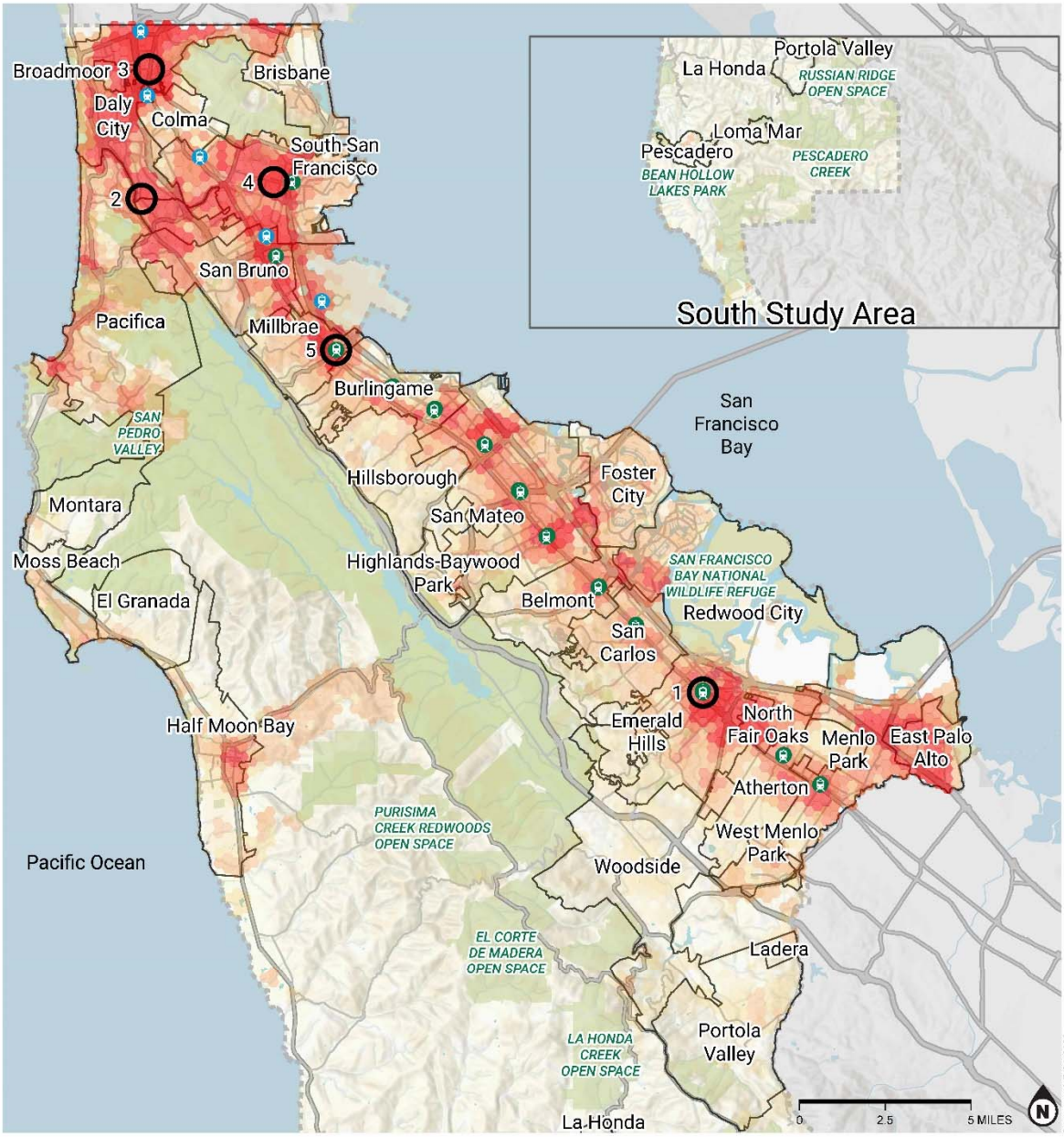
Once the hexagons were associated with each characteristic, an overall score was calculated for each hexagon using the weights shown in Error! Reference source not found. **Table 4**. These results are visualized in **Map 7,** which demonstrates the relative score of each hexagon. The potential pilot program services areas show the highest concentrations of high scoring hexagons.

Potential Pilot Program Service Areas

Map 7 shows the five top scoring locations 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:

1. **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.
2. **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.
3. **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.
4. **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.
5. **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.

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 7** 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.



PROSPECTIVE PILOT AREAS

SAN MATEO COUNTY
SHARED MICROMOBILITY
FEASIBILITY STUDY

alta

PILOT STUDY RECOMMENDATIONS & SCORE

- Pilot Study Recommendations
- Higher Score
- Lower Score

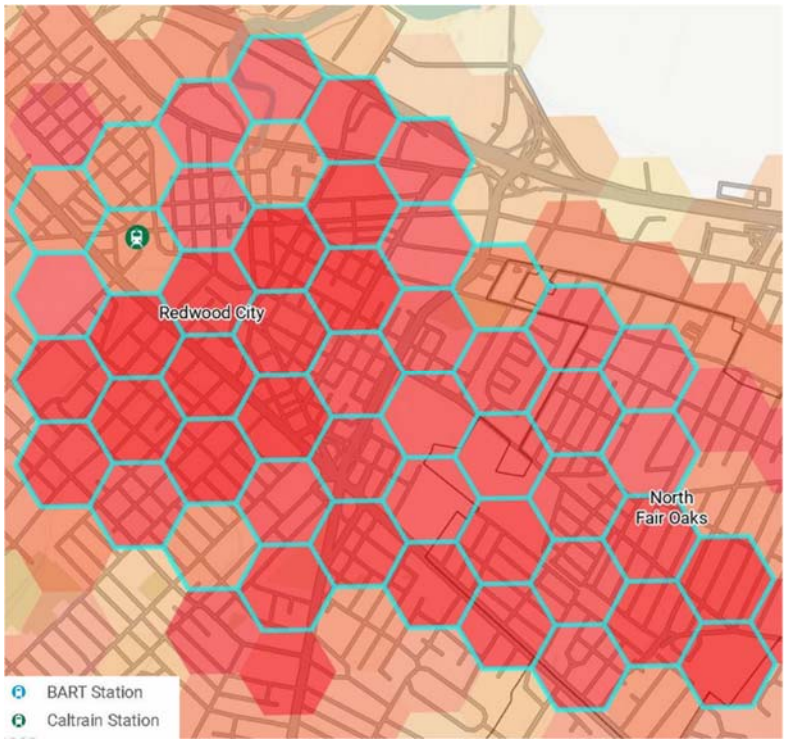
DESTINATIONS + BOUNDARIES

- BART Station
- Caltrain Station
- County Boundary
- San Mateo County City Boundaries
- Water
- Park

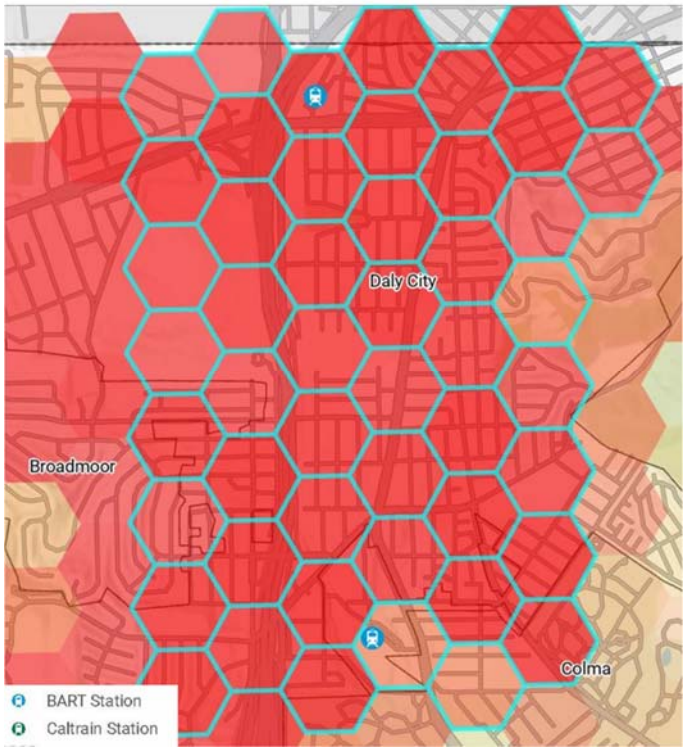
MAP 7

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 Service Area for Redwood City & North Fair Oaks



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 the chosen pilot program service area 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). The **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.

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
- 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

Source: Alta Planning + Design

VIII. 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 Error! Reference source not found.

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.

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 5.** 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. For the full program guideline recommendations, see **Appendix F**.

Table 5: 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. 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.

Topic	Description
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.
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- 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 Error! Reference source not found.)
- 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 Error! Reference source not found..

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.

Next Steps

Immediate next steps for program implementation include the following:

- Identify Program Manager
- Define pilot program geography and establish the Governance Committee
- Establish Governance Committee bylaws, ILAs, and management processes
- Identify seed funding for program
- Finalize program requirements and procure vendor

The table below identifies the estimated timeline for the steps mentioned above.

Table 6: 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

Appendix A: Feasibility Memo
Appendix B: Plan & Policy Review
Appendix C: Vision / Goals / Performance Measures Memo
Appendix D: Best Practices Memo
Appendix E: Program Recommendations Memo
Appendix F: Program Guidelines & Regulatory Framework Memo