1. Introduction

Walking is fundamental to our existence: it is not just how we move around but also is a primary form of exercise and social activity. Whether taking transit, walking the dog, or heading to the front door after parking the car (to one's work, the grocery store, post office, etc.), nearly everyone is a pedestrian for some portion of their day.

The Public Works Department's mission is to operate, maintain, and improve San Mateo's infrastructure.

Over the last decades, however, it is clear that fewer people walk on a regular basis. Due to the way most cities and towns have grown, with sprawling land use patterns assisted by large freeways and automobile-oriented roads, the ability of most people to safely and comfortably walk has diminished. As a result there is more air pollution, more traffic congestion on neighborhood streets, more health care issues and costs associated with a lack of physical activity, and a sense that driving is the "only" option available to many individuals. Further impacts of driving and its related infrastructure on wildlife habitat, water quality, and climate change are also by now well documented and well understood by researchers and scientists.

Current planning and policy efforts throughout the U.S., San Francisco Bay Area, and in the City of San Mateo seek to reverse the trend away from walking. Despite being the least expensive form of travel, decision-makers are increasingly aware that to get more people on foot requires proactive efforts to build and maintain high-quality infrastructure, provide comprehensive planning, and commit to long-term funding. To reestablish walking as a viable everyday option also demands working with community members and neighbors to build a shared vision for how to accommodate growth and identify what is most achievable in the short-, medium-, and long-terms.

Studies have shown that these efforts are also good for a community's economic and social stability. Highly walkable downtowns, employment centers and community-serving nodes help reduce the need for new streets and improvements and are essential to the long-term ability to attract jobs and preserve existing single-family neighborhoods. Such locations also encourage more affordable new development and/or greater community benefits as more space can be devoted to people rather than (storing) cars. Lastly, walkable communities are inclusive communities; seniors, children, and the mobility-impaired have greater access to services and are able to lead more independent, productive lives. Several benefits of walking are discussed in greater detail in Section 1.4 of this Chapter.

1.1. Purpose of the Plan

The City of San Mateo recognizes the value of walking and has developed the Citywide Pedestrian Master Plan to establish itself as a more walkable, livable, and healthy city. The Citywide Pedestrian Master Plan is one of a spectrum of plans with varying scopes the City has developed to guide its land use and transportation development. The General Plan guides future development citywide and sets a foundation for master and specific plans to follow. Master Plans, such as this Citywide Pedestrian Master Plan, are focused on a particular planning initiative that influences a large area of the City. Specific Plans provide guidelines for the distribution and location of land use. Capital Improvement Plans identify capital projects for the City to construct within the next five years.

Downtown San Mateo

This Citywide Pedestrian Master Plan provides a broad vision, strategies, and actions for improving the pedestrian environment in San Mateo. This Plan's recommendations are built on and consistent with local and regional goals and policies for increasing the number of people who walk in San Mateo. These goals include specific recommendations for streets, sidewalks and multi-use paths and also include policies to make San Mateo more sustainable by reducing the City's carbon footprint.

While walking is the least expensive transportation mode, building and maintaining a high quality pedestrian infrastructure requires comprehensive planning and long term funding. The recommendations in this Plan will help the City reach goals adopted in the General Plan as well as the Sustainable Initiatives Plan by creating an environment and programs that support walking for transportation and recreation, encourage fewer trips by car, and support active lifestyles.

The City is expected to add over 17,000 new residents in the next two decades. While San Mateo is actively pursuing infill development that will accommodate this forecasted growth, infill development alone will not encourage walking. Approximately 29 percent of those surveyed for this Plan indicate they drive for trips under one mile. Trips within this range, made by car, are a prime target of this Plan. The survey also reveals there are obstacles in San Mateo that prevent walking from being more convenient.

This Citywide Pedestrian Master Plan will be a blueprint for the City to improve the pedestrian environment, secure funds dedicated to pedestrian safety and livable communities, and increase the number of walking trips.

1.2. Citywide Pedestrian Master Plan Process

The City of San Mateo initiated the process to develop this plan in November 2010 through its Public Works Department. To fully engage the City and residents, the City hosted two public workshops, conducted a survey, and presented to numerous city commissions and committees to seek input and to inform the community of the project status and recommendations.

Public outreach included two public workshops and a community survey. The first public workshop was held in January 2011 to gather community input on existing walking conditions, challenges, and opportunities for improvement. The community survey was circulated at this time as well. The survey was distributed to community members in order to identify challenges for and barriers to walking. Over 475 responses were collected. The second community meeting will be held in September 2011. The purpose of the second workshop is to share the Draft Pedestrian Plan, including proposed improvements and programs for public review.

Presentations were also made to at the following city commissions and committees to inform the community of the project status and recommendations:

- City Council on October 4, 2011; April 16, 2012 (Adoption)
- Park and Recreation Commission on December 1, 2010
- Downtown San Mateo Association on January 6, 2011; October 6, 2011
- Planning Commission on January 11, 2011; September 13, 2011; October 11, 2011; March 13, 2012
- Public Works Commission on September 14, 2011; October 12, 2011; March 14, 2012
- Senior Center on March 4, 2011; September 16, 2011
- Senior Citizen Commission on November 16, 2010; November 15, 2011
- San Mateo United Homeowners Association on March 17, 2011; September 15, 2011
- Sierra Club on September 20, 2011

Citywide Pedestrian Master Plan Process

1.3. Citywide Pedestrian Master Plan Goals Summary

The Citywide Pedestrian Master Plan process included development of goals, objectives, and policies that direct the way the public improvements are made, where resources are allocated, and how

programs are operated. This section presents a summary of the Plan's vision and goals.

Goal 1: Mobility

Increase and improve pedestrian access to employment centers, transit, community destinations and recreation across the City of San Mateo for all ages and abilities.

The term mobility describes the state of being in motion. Pedestrian mobility, as used in this Plan, describes the ability for people to walk to their destinations. This Plan supports the Sustainable Initiatives Plan and seeks to increase the mode share of bicycle and pedestrian travel to 30% for trips one mile or less by 2020. This Plan also seeks to eliminate barriers to pedestrian travel, work with transit providers to provide accessible transit, and provide the framework to regularly evaluate pedestrian activity levels, facilities and programs.

Goal 2: Safety

Improve pedestrian safety through the design and maintenance of sidewalks, streets, intersections, and other roadway improvements such as signage and lighting, and landscaping; as well as best practice programs to enhance and improve the overall pedestrian safety.

Safety is a concern for current and potential pedestrians and can be a determining factor in the decision whether or not to walk.

This Plan seeks to reduce the number of pedestrian related collisions, injuries and fatalities by 50 percent from 2010 levels by 2020. To reach this goal, the City will annually review pedestrian complaints and collisions and implement ongoing improvements at intersections and throughout the pedestrian network.

Goal 3: Infrastructure and Support Facilities

Maintain and improve the quality, operation and integrity of the pedestrian network infrastructure that allows for convenient and direct connections throughout San Mateo.

Community outreach conducted for this Plan identified a need for sidewalks free of obstructions, signal timing that allows for a longer crossing time in certain locations, enhanced pedestrian crossings on multi-lane streets, improved connections with Downtown, and a number of other infrastructure and facility needs.

This Plan supports the incorporation of pedestrian facilities and amenities into private and public projects and provides support for maintained walkways that are clean, safe and that encourage use.

Goal 4: Programs

Increase awareness of the value of pedestrian travel for commute and non-commute trips through encouragement, education, enforcement and evaluation programs that support walking.

Encouragement, education, enforcement, and evaluation programs complement engineering improvements. Improvements to and continued support of existing education, enforcement and evaluation programs is critical to increasing the number of pedestrian trips and safety.

This Plan seeks to establish and enhance pedestrian related programs that will enable and encourage more walking trips.

Goal 5: Equity

Improve pedestrian accessibility for all residents through equity in public engagement, service delivery and capital investments.

Walking is the most broadly accessible form of transportation and recreation. Accessibility and economics are inherently tied to equitable transportation solutions, which includes pedestrian travel. The City has a commitment to address issues of race and social justice in the design and implementation of pedestrian projects.

Through implementation of this Plan, the City will assist neighborhoods that desire to improve pedestrian access to, from, and within their neighborhood.

Goal 6: Implementation

Implement the Pedestrian Plan over the next 20 years.

The City is committed to improving the pedestrian network.

The City will seek local, state, and federal funding to implement the projects identified in the Plan. The City intends to incorporate pedestrian projects into the City's Capital Improvement Program (CIP) that will create a walkable environment in San Mateo and support the City's Sustainable Initiatives Plan. The Plan also calls for development of requirements and incentives for private property owners to incorporate pedestrian features into new projects.

1.4. Benefits of Walking

The benefits of walking are numerous and include traffic and air quality benefits, increased quality of life, improved public health, and economic benefits.

1.4.1. Why Walking is Important

Walking is important to San Mateo due to its potential for addressing several interrelated challenges including traffic, air quality, creating a sense of community, and public health. Non-motorized transportation infrastructure can also provide economic benefits to the community. By planning a city that is more walkable, San Mateo can affect all of these elements and can collectively influence existing and future quality of life.

1.4.2. Traffic and Air Quality

Brisk walking (≥3.5 mph) has been shown to reduce body fat, lower blood pressure, increase high-density lipoprotein, and even reduce risks of bone fracture.

Dunton, G., et al. 2006. Perceived Barriers to Walking for Physical Activity, Preventing Chronic Disease.

Each time residents in the San Mateo choose to walk, vehicles are removed from the road. As San Mateo becomes more inviting to pedestrians, increasing numbers of work, school, shopping, and recreational trips can be made on foot. Cumulatively, this pattern may reduce traffic in some areas and improve air quality. Measuring environmental improvements by reduction in greenhouse gases allow easy measurement and tracking of real benefits. The measurement of potential environmental benefits of San Mateo's pedestrian network is outlined **Table 1-2**.

1.4.3. Quality of Life Benefits

Fostering conditions where walking is accepted and encouraged increases a community's livability. In areas where people walk, there are more opportunities for chance meetings than where people generally travel by vehicle. While walking, people have greater opportunities to talk and interact on a more human level. Pedestrian activity provides more "eyes on the street" or people looking out for one another. All of these quality of life benefits can enhance San Mateo's sense of place and livability.

1.4.4. Public Health

Walking can improve public health through an increase in physical activity. In recent years, public health professionals and urban planners have become increasingly aware that the impacts of vehicles on public health extend far beyond asthma and other respiratory conditions caused by air pollution. Dependency on vehicles has also decreased the amount of peoples' physical activity.

Public health professionals now partner with transportation planners in identifying the low levels of physical activity resulting from communities designed primarily for vehicles. Although diet and genetic predisposition contribute to these conditions, physical inactivity is now widely understood to play a significant role in chronic diseases in the US, including coronary obesity, heart disease, stroke and diabetes.[1] Improving non-motorized transportation facilities may help alleviate these disorders. As **Figure 1-1** shows, there is a direct link between inactivity and obesity. In comparison to listed European countries and Canada, the US has a higher rate of obesity and a lower percent of walking, bicycling, and public transportation use.

In response to these trends, the public health profession advocates for walkable neighborhoods as an effective way to encourage active lifestyles. As San Mateo and its neighborhoods become more walkable, the population will have more opportunities to exercise and potentially decrease related chronic disease.

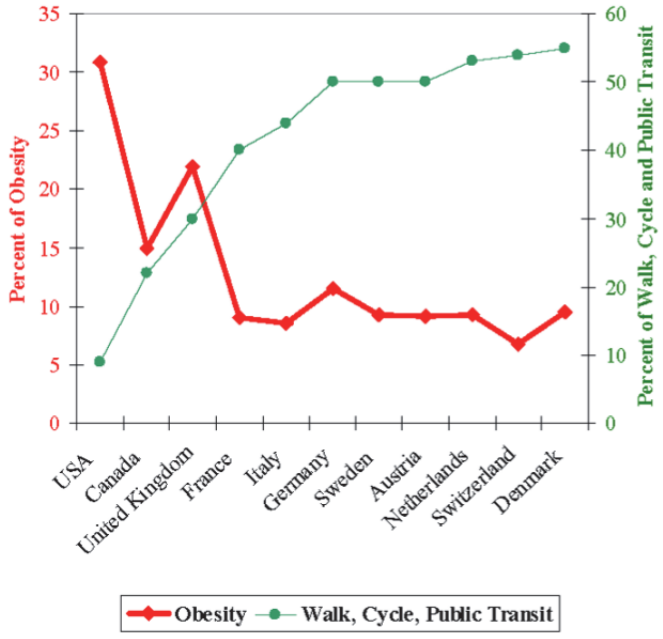

Figure 1-1: Transportation and Obesity Rates[1]

[1] McKenna, M.T., Taylor, W.R., Marks, J.S., & Koplan, J.P., "Current issues and challenges in chronic disease and control" in Chronic Disease Epidemiology and Control, 2nd edition, American Public Health Assn. , 1988.

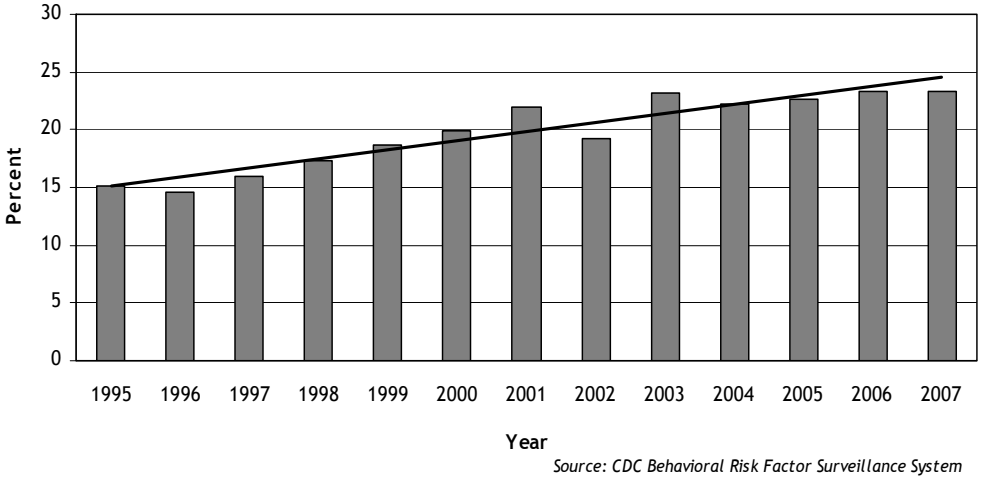

Figure 1-2: Annual Obesity in California by Body Mass Index

Physical inactivity can lead to the growing trend of obesity. As **Figure 1-2** shows, in California obesity or body mass index (weight in kilograms divided by height in meters squared, abbreviated to BMI) has been rising for the last twelve years. Obesity can lead to chronic diseases such as heart disease and diabetes. By providing a pedestrian-friendly environment, more people may stay fit by walking and help reverse these health trends.

A 1999 study by the Urban Land Institute of four new pedestrian-friendly communities determined that homebuyers were willing to pay a $20,000 premium for homes in walkable communities.

Eppli, M. & Tu, C. 1999. "Valuing the New Urbanism. The Impact of the New Urbanism on Prices of Single Family Homes." Urban Land Institute.

In addition to individual health benefits, physical activity provides fiscal rewards to the entire community by reducing health care costs and lost days of work. A report prepared for the Centers for Disease Control and Prevention found that the annual per capita cost of building and maintaining trails was $209.28 per person, whereas the per capita annual direct medical benefit of using the trail was $564.41 per person. This indicates that every $1 spent on building non-motorized transportation facilities returns $2.94 in medical benefits.[2]

1.4.5. Economic Benefits

With the fluctuating expense of gasoline, walking can be a more economically efficient mode of transportation than driving a vehicle for residents in the area. According to 2004 data from AAA estimates and US Census surveys, ownership of one motor vehicle accounts for more than 18 percent of a typical household's income.[3] By encouraging walking, residents will save money on gas, car maintenance, and repairs. Residents may likely spend monies saved through walking

[2] Wang, Macera, Scudder-Soucie, Schmid, Pratt, and Buchner. 2005. A Cost-Benefit Analysis of Physical Activity Using Bike/Pedestrian Trails. Health Promotion Practice 6(2) 174-179.
[3] www.walkinginfo.org/why/benefits_economic.cfm

elsewhere in the local economy. For example, one study found that households in automobile-dependent communities devote 50 percent more to transportation (more than $8,500 annually) than households in communities with more accessible land use and more multi-modal transportation systems (less than $5,500 annually).[4]

There are many precedents showing economic benefits to improving the environment for walking in residential and commercial districts. A shopping center or office complex may become more economically competitive if walking conditions improve. As an example, a $4.5 million investment in streetscape and pedestrian improvements on School Street in Lodi, California, as well as economic development incentives, are credited with attracting 60 new businesses, decreasing the vacancy rate from 18 percent to 6 percent and increasing downtown sales tax revenue by 30 percent.[5] Retail areas often subsidize vehicle parking on the assumption that customers need to drive to make large purchases. However, retail districts worldwide, such as the SoHo neighborhood in Manhattan, have realized commercial gains by increasing pedestrian space and reducing space dedicated to vehicles.[6] One study of consumer expenditures in British towns found higher weekly expenditures by consumers who travel by walking than those who drive or ride transit to downtown shopping districts (see **Table 1-1**).[7]

A $4.5 million investment in streetscape and pedestrian improvements on School Street in Lodi, California, as well as economic development incentives, are credited with attracting 60 new businesses, decreasing the vacancy rate from 18 percent to 6 percent and increasing downtown sales tax revenue by 30 percent.[1]

Table 1-1: Consumer Expenditure by Mode

Mode	Weekly Expenditures
Bus	£63
Car	£64
On foot	£91
Train/tube	£46
Other (taxi, cycle)	£56

Source: Accent Marketing and Research

Additionally, building local pride and regional recognition for San Mateo's non-motorized infrastructure can attract tourism, conferences and other special events that will in turn enhance San Mateo's

[4] Victoria Transport Policy Institute. Economic Value of Walkability. February 1, 2011. www.vtpi.org/walkability.pdf
[5] Local Government Commission for the California Department of Health Services. The Economic Benefits of Walkable Communities.
[6] www.transalt.org/files/newsroom/reports/soho_curbing_cars.pdf
[7] http://www.vtpi.org/walkability.pdf

economy. For example, tourists coming to Vermont to walk and bicycle in the scenic and compact, pedestrian-friendly town centers have generated an economic benefit. In 1992, an estimated 32,500 visiting cyclists spent $13.1 million in Vermont.[8]

1.4.6. Future Usage and Benefits

Alta has developed a walking model that estimates usage and benefits. This is the first model of its type to be based on empirical data. **Table 1-2** quantifies the estimated reduction in vehicle miles traveled and estimated reduction in air pollutants in San Mateo following implementation of pedestrian improvements presented in this Plan.

[8] Local Government Commission Center for Livable Communities. The Economic Benefits of Walkable Communities. http://www.lgc.org/freepub/docs/community_design/focus/walk_to_money.pdf

Table 1-2: San Mateo Future (Year 2030) Pedestrian Activity and Benefits

Data	Source and Assumptions	
Future Commuting Statistics		
Future study area population	119,800	2030 General Plan (based on ABAG 2007 projections)
Future employed population	48,512	Based on 2030 General Plan number of employed residents (Assumes 4.7% (2010 data) of employed residents work at home)
Future walk-to-work mode share	4.8%	Based on increase from previous mode split due to improvements in the pedestrian network
Future number of walk-to-work commuters	2,323	(employed persons) * (walking mode share)
Future work-at-home mode share	4.8%	Same as 2006-2008 ACS mode split
Future number of work-at-home walk commuters	1,161	Assumes 50% of population working at home makes at least one daily walking trip.
Future transit-to-work mode share	1.0%	Based on increase from previous mode split due to improvements in the pedestrian network
Future transit pedestrian commuters	412	Assumes 85% of transit riders access transit by foot.
Future school children, ages 6-14 (grades K-8)	19,553	Same as 2006-2008 ACS mode split
Future school children walking mode share	29.0%	Portland Safer Routes to School Survey, 2007
Future school children walk commuters	5,670	(school children pop.)* (walking mode share)
Future number of college students in study area	7,098	Same as 2006-2008 ACS population proportion
Future estimated college walking mode share	60.0%	National Bicycling & Walking Study, FHWA, Case Study No. 1, 1995.
Future college walking commuters	4,259	(college student pop.) * (walking mode share)
Future total number of walk commuters	13,826	(walk-to-work trips) + (school trips) + (college trips) + (utilitarian trips)
Future total daily walking trips	27,652	Total walk commuters x 2 (for round trips)
Other utilitarian and discretionary trips		
Ratio of "other" trips to commute trips	2.73	National Household Transportation Survey, 2001
Estimated non-commute trips	75,490	
2030 Estimated Daily Pedestrian Trips:	103,142	
Existing Vehicle Trips and Miles Reduction		
Reduced Vehicle Trips per Weekday	8,959	Assumes 73% of walking trips replace vehicle trips for adults/college students and 53% for school children
Reduced Vehicle Trips per Year	2,338,274	Reduced number of weekday vehicle trips multiplied by 261 (weekdays in a year)
Reduced Vehicle Miles per Weekday	10,433	Assumes average round trip travel length of 1.2 miles for adults/college students and 0.5 mile for schoolchildren
Reduced Vehicle Miles per Year	2,723,016	Reduced number of weekday vehicle miles multiplied by 261 (weekdays in a year)
Existing Air Quality Benefits		
Reduced PM10 (tons/weekday)	192	Daily mileage reduction multiplied by 0.0184 tons per reduced mile
Reduced NOX (tons/weekday)	5,204	Daily mileage reduction multiplied by 0.4988 tons per reduced mile
Reduced ROG (tons/weekday)	757	Daily mileage reduction multiplied by 0.0726 tons per reduced mile
Reduced CO2 (lb/weekday)	2,141,907	Daily mileage reduction multiplied by 0.916 lb per reduced mile
Reduced PM10 (tons/year)	50,103	Yearly mileage reduction multiplied by 0.0184 tons per reduced mile
Reduced NOX (tons/year)	1,358,240	Yearly mileage reduction multiplied by 0.4988 tons per reduced mile
Reduced ROG (tons/year)	197,691	Yearly mileage reduction multiplied by 0.0726 tons per reduced mile
Reduced CO2 (lb/year)	2,494,339	Daily mileage reduction multiplied by 0.916 lb per reduced mile

1.5. Overview of the Plan

The San Mateo Citywide Pedestrian Master Plan contains the following chapters:

Chapter 1 – Introduction

Sets the context for the Plan including purpose and structure.

Chapter 2 –Vision, Goals, Objectives and Policies

Summarizes the vision, goals, objectives and policies guiding the implementation of the Plan.

Chapter 3 – Existing Conditions

Presents existing pedestrian conditions, including setting, land use, and pedestrian facilities and programs in order to identify where new facilities are needed and what programs will better support pedestrian activity in San Mateo.

Chapter 4 – Needs Analysis

This chapter reviews the relationship between pedestrian attractors and generators commute patterns, and collisions, and estimates potential pedestrian activity within the City. This chapter also includes a review of community outreach and input.

Chapter 5 – Pedestrian Network Improvements

Presents recommended improvements, including engineering and policy improvements, and projects and studies.

Chapter 6 – Programmatic Improvements

Describes proposed pedestrian encouragement, education, enforcement and evaluation programs.

Chapter 7 – Implementation

Outlines a strategy, including cost estimates for projects presented in this Plan.

Chapter 8 – Funding

Provides potential funding sources for implementing the Plan's projects and programs.

Appendix A – Pedestrian Design Guidelines

Provides guidelines for the design of pedestrian enhancements that incorporate street design best practice guidance and enhance the safety, convenience, and mobility for pedestrians. Potential treatments include different design options for pedestrian crossings, pedestrian

amenities, and community vitality, as well as requirements for compliance with Americans with Disabilities Act (ADA).

Appendix B – Survey

Presents the Citywide Pedestrian Master Plan survey used to collect information from San Mateo residents. Respondents were asked to identify their existing travel behavior, what they see as obstacles and/or barriers to pedestrian travel, their preferred pedestrian facilities or amenities, and their most and least favorite places to walk and walking routes.

Appendix C – Planning and Policy Review

Reviews planning and policy documents relevant to the Citywide Pedestrian Master Plan. The review is organized by City, County, Regional, State, and Federal documents and policies. The review focuses on those sections and specific policies from each document that are most relevant to the Citywide Pedestrian Master Plan.

Appendix D – Walking Audit Memo

Summarizes the discussions that occurred during each of three day-long walking audits and includes the site-specific recommendations for pedestrian improvements at the locations visited. A walking audit is a walking workshop that examines a focused cluster of intersections in a neighborhood or along a corridor.

Appendix E – PEDIndex Methodology

Summarizes the indicators used to estimate walking activity.

Appendix F – High Visibility Crosswalk and Pedestrian Scale Lighting Corridors

Presents the recommended locations for high visibility crosswalks and pedestrian scale lighting locations in San Mateo.

Appendix G – Summary of Recommendations

Summarizes the recommendations contained in the plan for quick and easy reference.

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