SAN MATEO AVENUE

CONCEPTUAL STREETSCAPE PLAN

City of San Bruno, CA | October 22, 2019

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CHAPTER 1: INTRODUCTION

A. CONTEXT

B. PROJECT BACKGROUND

C. PROJECT OVERVIEW

D. SCOPE AND PURPOSE OF THE SAN MATEO AVENUE STREETSCAPE PLAN

E. PLANNING CONTEXT

F. CEQA COMPLIANCE

G. PROCESS

H. GOALS

A. CONTEXT

The City of San Bruno, an ethnically and culturally diverse city, maintains a small-town atmosphere within a large metropolitan area. It is uniquely located on the San Francisco Peninsula in San Mateo County, about twelve miles south of San Francisco. Located along Highway 101 and Interstate 280, accessible by Bay Area Rapid Transit (BART), Caltrain and the San Mateo Transit (SamTrans) bus system, San Bruno is a transit hub for the bay area. Adjacent to the San Francisco International Airport, the City has easy accessibility to the vast cultural, educational, and recreational opportunities within the San Francisco Bay Area.

San Mateo Avenue, from Huntington Avenue to El Camino Real, serves as San Bruno's downtown central business district. A two-lane, low-speed roadway lined with shops, restaurants and services, it functions as a pedestrian-oriented shopping district, where visitors may park once and visit multiple destinations.

One of the most striking and valuable assets of San Mateo Avenue is the diverse community that is served by businesses along the corridor. In a region where cultural diversity is not uncommon, San Mateo Avenue stands out because of the varied mix of restaurants, shops and services that line the street. There are very few vacancies, the existing business seem to be thriving. Many businesses have been in their locations for some time, while several new businesses are finding success. Not only are these shops and restaurants ethnically diverse, but a range of ages and stages of life are served, from toddlers at daycares to children learning to swim, newlyweds at the wedding chapel and wedding photo shop, to new parents. The range of businesses and services is striking, including restaurants; fitness, yoga, martial arts and dance classes; the Volunteer Firemen's Hall; grocery stores; hair salons; dry cleaners; laundromats; a leather supply store; a notary; an auto parts store; banks; bakeries; and more. A surprisingly large number of these businesses are sole-proprietor, locally owned businesses.

B. PROJECT BACKGROUND

In 2013, the City adopted the Transit Corridors Plan which articulates the community's vision for revitalized commercial corridors in proximity to the San Bruno Caltrain Station. The vision includes fostering dynamic architecture and welcoming gateways, convenient transportation connections, pedestrian-oriented "green" streets, and additional housing, jobs, retail, and restaurants, while maintaining a sense of the City's history. The Transit Corridors Plan identifies five character areas for public realm improvements: Station Area, El Camino real, Central Business District, Huntington Avenue and Civic Center. San Mateo Avenue is the main corridor of the Central Business District area. The San Mateo Avenue Streetscape Plan represents the further development of recommendations from the Transit Corridors Plan.

C. PROJECT OVERVIEW

The project location and limits are within the public right-of-way on San Mateo Avenue between Huntington Avenue at the Caltrain Station to the north and the intersection with El Camino Real to the south. San Mateo Avenue is downtown San Bruno's main street. It has a 60-foot right-of-way, with sidewalks approximately eight to ten feet wide, eight foot wide bulb outs at intersections, parallel parking on both sides of the street, and 12- foot vehicle travel lanes. Extending from Huntington Avenue to the north to El Camino Real to the south, San Mateo Avenue stretches approximately 0.65 miles. At the northern entrance to downtown is the Caltrain Station and adjacent, newly renovated Posy Park. Both of these entrances to Downtown San Bruno offer opportunities to be designed as prominent and inviting gateways.

The objective of this plan is to provide design guidance for the public right-of-way to support the City's goals of beautifying the public realm, supporting local businesses, spurring investment within the downtown core, enhancing the downtown's character, and increasing the attractiveness of the downtown as a destination.

D. SCOPE AND PURPOSE OF THE SAN MATEO AVENUE STREETSCAPE PLAN

The San Mateo Avenue Streetscape Plan describes the concept-level design intent that was developed through a community-engagement process. It describes the following:

- Project Vision and Goals: purpose and intent
- Design Character: aesthetic theme, comparable precedents, materials
- Project Scope: area of the project, elements of the design, quantities of the elements, locations of the elements
- Prioritization of Elements: provides a guide for decision-making once a project budget is identified, as the entire scope described may not be funded

As a concept plan, this document will guide the next steps of the design process, while leaving flexibility for future implementation. The ultimate design will depend on the project budget once funding is identified, and on potential technical constraints that were beyond the scope of this study to identify. For example, constraints may be found after a full topographic analysis, dependent on a topographic survey, is complete. The design process subsequent to adoption of this plan and determination of the project funding would typically include the following steps:

- Schematic Design: Define the scope of the project including limit-of-work, included elements, quantities, and basic layout

PROJECT AREA CONTEXT MAP

- Design Development: Selection of materials based on the project budget, and refined layout based on technical factors
- Construction Documentation: Development of contract documents that precisely describe the design to a contractor and are the basis for bidding and procurement

E. PLANNING CONTEXT

This plan is informed by two prior planning studies, the Transit Corridors Plan and the San Bruno Downtown Parking Study. Key recommendations from these plans are described below.

Transit Corridors Plan

Adopted in February 2013, the Transit Corridors Plan defines the San Mateo Avenue study area from the Caltrain overpass to El Camino Real as the city's "Central Business District." It articulates a vision for the corridor as a "pedestrian-oriented and green" street that provides a "pleasant outdoor shopping experience" and a "one-of-a-kind mix of ethnic markets and goods." The future character of the street is described as an "artistic place" with a "whimsical yet handsome combination of old and new characteristics." Beyond serving as a shopping district, the vision for the corridor includes supporting cultural programming, such as a "diverse range of performers and musicians [who] fill up the streets and restaurants." The vision also includes future upkeep of the street, describing it as "well maintained, clean and inviting." And the vision includes the development of "new urban plazas and pocket parks" beyond the street right-of-way.

"Vision Elements" described in the Transit Corridors Plan that are further developed by the San Mateo Avenue Streetscape Plan include:

Downtown as a Day and Night Destination

- Make San Mateo Avenue into an exciting destination for visitors, workers and residents alike.
- Invigorate existing businesses and program activities to support an economically vibrant Downtown that is busy with business and community life.

Local Character and Distinctive Identity

- Cultivate a more distinctive identity for San Bruno while building upon its local character in future growth.
- Integrate San Bruno history into public art and streetscape designs while also developing new themes and motifs for a contemporary identity.
- Install exciting and attractive new gateways to direct visitors and patrons to destinations while creating a welcoming atmosphere.

Sustainable, Mixed-Use Development

- Explore opportunities for "sustainable" infrastructure that beautifies the urban environment with ecological technologies such as "green streets" and drought-tolerant plantings.

Safe and Inviting Pedestrian Realm

- Develop circulation and streetscape improvements that provide highly visible crosswalks, sidewalk plantings, engaging sidewalk design and traffic calming strategies to support a safe and inviting pedestrian realm.

The San Mateo Avenue Streetscape Plan adheres to the Public Realm Design Guidelines described in the Transit Corridors Plan. Specifically, the San Mateo Avenue Streetscape Plan incorporates the following:

A1-1: Reduce crossing distance at crossing locations by utilizing pedestrian safety features such as bulb-outs.

A2-3: Explore using special paving materials, colors, and/or patterns for crosswalks to heighten visibility and lend identity to the area while creating an attractive pedestrian environment.

A3-3: Ensure that planters and tree wells are at least four feet wide.

A3-8: Promote outdoor dining and display of selected goods on sidewalks.

A3-9 Ensure at least a 12-foot tree canopy clearance.

A3-10 Place new street trees in appropriate locations to avoid blocking views and access to building entrances or signage.

A3-11 Ensure that trees do not obstruct ADA access, or infringe on pedestrian and/or bicycle circulation.

A4-1: Provide both pedestrian-oriented and

automobile- oriented street lighting within the whole Transit Corridors Plan area, with first priority to the Pedestrian Emphasis Zones designed to meet established lighting standards to provide safe and comfortable pedestrian environment.

A4-2: Provide pedestrian-friendly streetscape amenities.

A4-3: Provide bicycle racks.

A4-4: Explore opportunities for artistic design of street furnishings.

A4-5: Install public art pieces.

A4-7 to A4-9:

Provide shelters at bus stops where possible; provide a minimum six-foot sidewalk clearance; design visually iconic bus shelters.

A5-1: Develop consistent thematically branded wayfinding and signage.

A5-3: Design and install gateway amenities.

A5-7: Provide visually attractive, easy-to-read and well-located signage to direct vehicles to Downtown parking areas.

A6-1&2: Install stormwater planters where possible.

A6-3: Encourage the use of permeable pavers around tree wells.

A6-5: Explore the use of permeable paving materials along parking lanes.

B4-4: Retain bulb-outs at street crossings.

B4-5: Plant street trees in tree wells with grates rather than in pots.

B4-6: Install raised crosswalks at all key intersections.

B4-7: Install attractive and creative pavement materials.

Three recommendations from the Transit Corridors Plan were studied and excluded from the scope of the San Mateo Avenue Streetscape Plan:

- Provide, where feasible, angled parking (Guideline B4-3)

Angled parking was studied as part of the San Mateo Avenue Streetscape Plan process and found to be unfeasible due to the limited width of the street (see Appendix).

- Raised Crosswalks at all Key Intersections (Guideline B4-6)

The potential to include raised crosswalks was discussed during stakeholder meetings and was determined not to be a priority for further study. Raised crosswalks could conflict with stormwater drainage and are generally not desired by transit agencies.

- Reconfiguration of the intersection of San Mateo Avenue and El Camino Real (Guideline B4-8)

City staff determined that the reconfiguration of the intersection of San Mateo Avenue and El Camino Real should be considered outside the scope of the San Mateo Avenue Streetscape Plan because it is likely to be a longer-term implementation project than the rest of the streetscape plan (requiring property acquisition), and because it would trigger CEQA analysis by altering the traffic operations of both streets. The San Mateo Avenue streetscape design allows for the potential future reconfiguration of the intersection by keeping furnishings, trees and the southern gateway monument outside of the realignment footprint described in the Transit Corridors Plan.

El Camino Real Reconfiguration from Transit Corridors Plan

Downtown Parking Management Plan:

Adopted in January 2019, the Downtown Parking Management Plan provides a set of phased parking management recommendations to manage the high afternoon and evening parking demand in the study area (including San Mateo Avenue), help users find and use available parking, improve parking availability for residents, and potentially increase the parking supply. Specifically, the Downtown Parking Management Plan recommends that the city:

- Adjust enforcement hours to better manage the heavy-use evening period
- Adjust time restrictions, primarily to convert 5-hour spaces to 10-hour spaces for employee use
- Install improved signage to help drivers locate available parking
- Improve parking lot maintenance and security
- Explore temporary use of the Sylvan Avenue Caltrain Station as additional public parking
- Explore converting parallel parking on San Mateo Avenue to diagonal parking to increase capacity
- Install parking meters on San Mateo Avenue to encourage short-term parking and direct long-term parkers into lots
- Formalize overnight parking arrangements in public lots to increase supply available to residents
- Begin process of planning and securing funds for a parking garage

The San Mateo Avenue Streetscape Plan supports these recommendations by including:

- Wayfinding signage to off-street parking
- Improved security and wayfinding through the alleyways (or "paseos") that lead from the street to the off-street parking
- Locations and quantity of parking meter kiosks

The San Mateo Avenue Streetscape Plan planning process included the analysis of the potential to install diagonal parking on San Mateo Avenue. Parallel parking was determined not to be feasible due to the limited width of the street. (See Appendix.)

F. CEQA COMPLIANCE

The Transit Corridors Plan completed a program-level EIR that illustrates relevant environmental resources along San Mateo Avenue that would apply to the recommendations described in the San Mateo Avenue Streetscape Plan. The proposed improvements should fall within the classes of projects as defined in the Public Resources Code to have been determined not to have a significant effect on the environment and are thus exempt from CEQA. As this project will make modifications to existing infrastructure but make negligible or no expansion of the existing use, it should qualify for a Categorical Exemption under Section 15301 of the CEQA Guidelines, which applies to minor alterations of existing infrastructure within the public's right-of-way. The City of San Bruno can further support this finding by imposing standard conditions of approval on the project. (See Appendix for further explanation of CEQA compliance.)

G. PROCESS

This plan is the outcome of a public-engagement process that included the following meetings and workshops:

- March 12, 2019 - 'Walk'shop – a walking tour, Community Workshop #1
- March 28, 2019 - Stakeholder Meeting #1
- March 30, 2019 - Drop-in Community Workshop #2
- March 11 - April 10, 2019 – On-line Survey
- May 7, 2019 - Planning Commission Meeting #1
- May 8, 2019 - Stakeholder Meeting #2
- May 15, 2019 - Parks and Recreation Meeting
- May 16, 2019- Arts Commission Meeting
- May 22, 2019 - Community Meeting #3
- August 20, 2019 - Planning Commission Meeting #2

PUBLIC ENGAGEMENT PROCESS

March 12th 'Walk'shop

March 30th Community Meeting

H. GOALS

Goals for the streetscape improvements were developed during the community engagement process by categorizing the community and stakeholders' comments collected during the 'Walk'shop, first stakeholder meeting and from the on-line survey. Draft goals were presented for review and comment at the subsequent community and stakeholders workshops, and Planning Commission, Parks and Recreation Commission, and Arts Commission meetings.

PROJECT GOALS

ACTIVATION

Activate the corridor, alleys (or "paseos"), Posy Park and Centennial Plaza day and night

GREENING

Plant trees, increase vegetation

BEAUTIFICATION

Provide an updated and unified corridor aesthetic, including additional seating opportunities and new paving

SAFETY

Ensure pedestrian safety

WAYFINDING

Provide wayfinding signage to San Mateo Avenue and parking lots and design gateways

IDENTITY

San Mateo Avenue's character should be simple, elegant and unique.

CHAPTER 2: EXISTING CONDITIONS

A. LAND USE

B. CHARACTER

C. STREETSCAPE CONDITION

D. PARKING

A. LAND USE

The land use along the corridor is primarily commercial with a large diversity of business types. Retail stores and restaurants are the primary business types. Service-oriented businesses, such as hair and beauty salons, a laundromat, two banks, an auto-repair shop, a gas station and a yoga studio, also line the street. Several institutional, educational and community-serving businesses also occupy buildings along the corridor, including the Bay Area Entrepreneur Center, the Teamsters Union, and La Petite Baleen Swim School.

At the southern end of the corridor, The Aperture, a new multi-unit mixed-use building, was recently completed. Toward the north end, Artichoke Joe's Casino is a regional draw, and further north is access to the Caltrain Station. Just north of the study area, on Huntington Ave., a new multi-unit residential development is planned.

Open spaces along the corridor are Posy Park on the north end of the study area, the plaza to the north of Chase Bank and Centennial Park across from the Jenevein Ave. intersection.

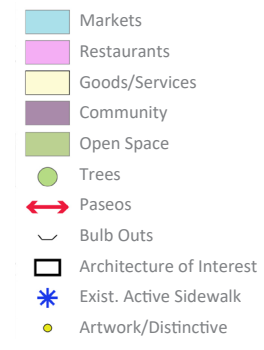
Behind the buildings, many of the blocks contain surface parking lots, which are connected to the San Mateo Avenue sidewalks via alleyways, referred to as "paseos" throughout this document.

B. CHARACTER

San Mateo Avenue is a small-scale corridor, with one travel lane in each direction, parallel parking on both sides of the street, and 10-foot to 12-foot-wide sidewalks. Bulb-outs at the corner and mid-block crossings serve to further reduce the perceived scale of the street.

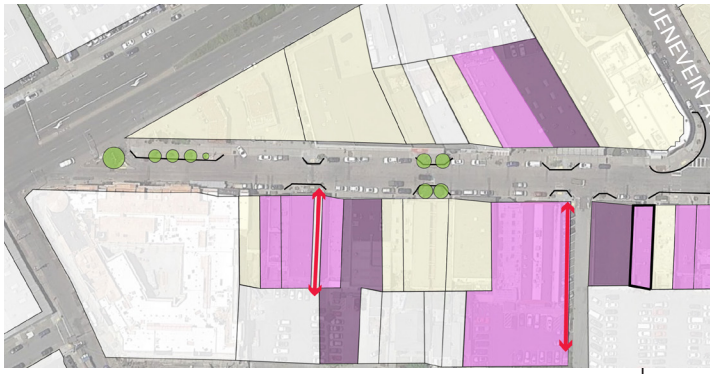
The buildings are primarily one and two stories in height, with an eclectic mix of architectural styles ranging from various historical styles to Art-Deco and Modernist. The eclecticism of the buildings is matched by the diversity of uses and ethnicities and cultures represented by the restaurants, shops and services along the street. This lends the street a fascinating and rich character, and not a sense of consistency or unity.

EXISTING ZONING MAP



Rotary Centennial Clock

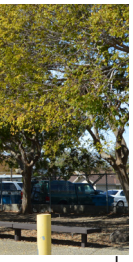
Exist. Low use Op



460 San Mateo Ave Art Moderne, 1940

Fountain

Artwork Viewing



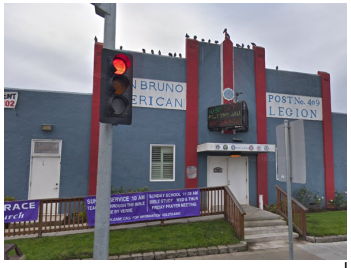
en space

495 San Mateo

Active sidewalk seating

601-605 San Mateo Ave
Mediterranean Revival, 1930

609-617 San Mateo Ave
Mission Revival, 1909



757 San Mateo Ave
Art Moderne, 1935

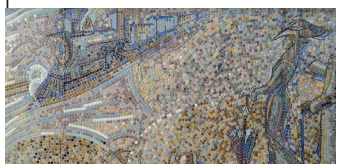
k:
g Plaza, Jenevein Ave

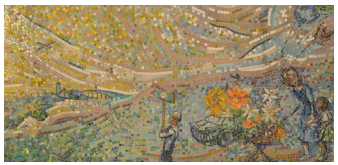
Active sidewalk
seating

588 San Mateo Ave
Mission Revival/Art Moderne 1925

598 San Mateo Ave
Art Moderne, 1932

Active sidewalk seating





Artwork: Posy Park Mosaics

C. STREETSCAPE CONDITION

Despite its assets, the San Mateo Avenue streetscape is considered widely by the San Bruno community to be "run down."

Pedestrian Realm

The existing street design includes many pedestrian-friendly features, including bulb-outs with code-compliant curb-ramps (in most, but not all cases), high-visibility crosswalk striping, mid-street pedestrian-crossing signs and pedestrian-activated flashing beacons.

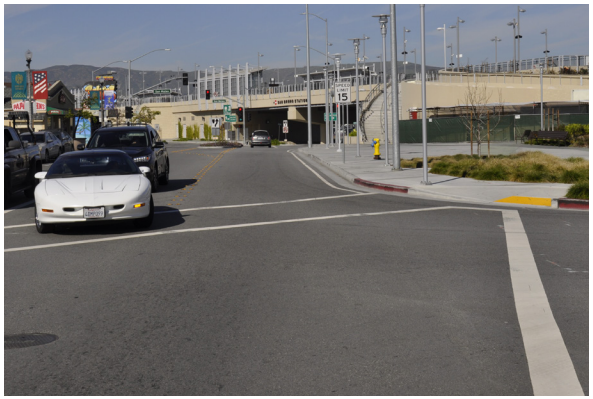
Street furnishings include precast-concrete trash receptacles that are unsightly and do not provide for recycling, as well as several mismatched trash receptacles, newspaper racks that are in disrepair, a few raised planters with overgrown shrubs that prohibit sitting on the integrated benches. There are no existing bike racks and no city-owned benches along the sidewalk. Public benches are located at Centennial Park, the Citibank plaza and Posy Park.

Pedestrian friendly crosswalk

Unsightly trash cans with no room for recycling

Newsracks in disrepair

Paving patchwork



Newly replaced asphalt

Existing Light Poles

Uneven Surfaces

Double parked vehicle off-loading

Wide Light Pole Spacing

Sidewalk Conditions

The sidewalk is continuous along both sides of the street, with adequate width for pedestrian access, however the pavement is a patchwork of concrete that has been repaired over time and there are many locations with uneven surfaces that exceed the CBC maximum unevenness for accessibility. There are code-compliance shortcomings at building entrances and sidewalk cross-slopes exceeding 2%.

Vehicular Roadway

The asphalt pavement in the roadway is in excellent condition, having been replaced recently after a water-line and sewer-line replacement project. Because there are no loading or drop-off zones, deliveries and patron drop-offs depend on double parking. While there is enough roadway width to allow vehicles to pass, curbside-management and roadway striping improvements would improve the street's vehicular function.

Lighting

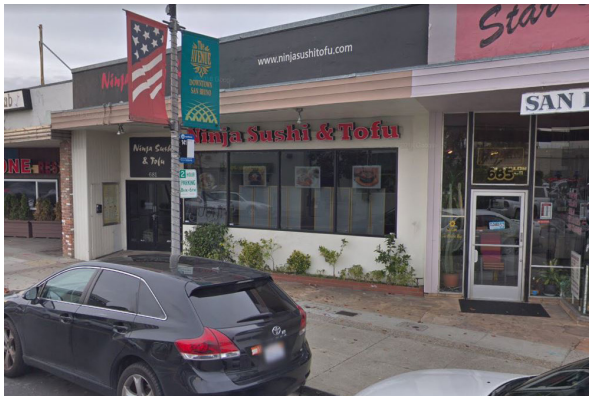
Pole-mounted lights are widely spaced and do not provide adequate light levels.

Bus connecting to San Bruno BART

Transit

There are four bus stops along the corridor. These are not constructed per SamTrans standards and they do not provide adequate accessibility for bus riders with disabilities.

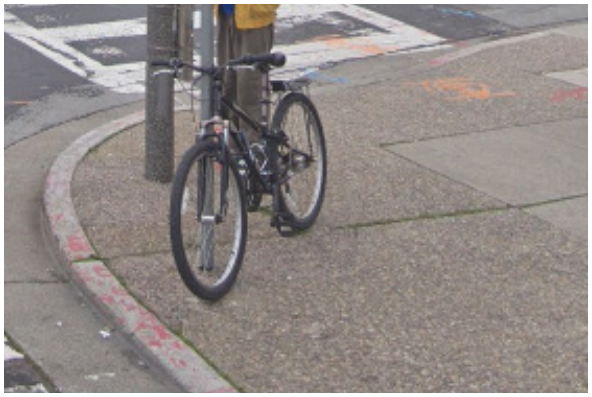
San Bruno Station is located at the northern end of the corridor.



Non-compliant bus stops

San Bruno Station

Bicycle Racks at Posey Park



Bicycle locked up at Sylvan Ave and San Mateo Ave

Bicycle Facilities

There are no bicycle facilities (bike lanes, "sharrows" or signage) in the roadway, and there are no existing bike racks along the street, with the exception of two bike racks and bike lockers at Posy Park.

Trees limited in growth due to pot planting

Planting

Greenery is limited along the street, due primarily to the small size and number of street trees, most of which were planted in raised pots which have limited their growth. Most of the shrubs that are planted at grade or in raised planters are in poor condition or are at the end of their expected life-spans.

Curb Buildout with Planting

Raised planter with overgrown planting

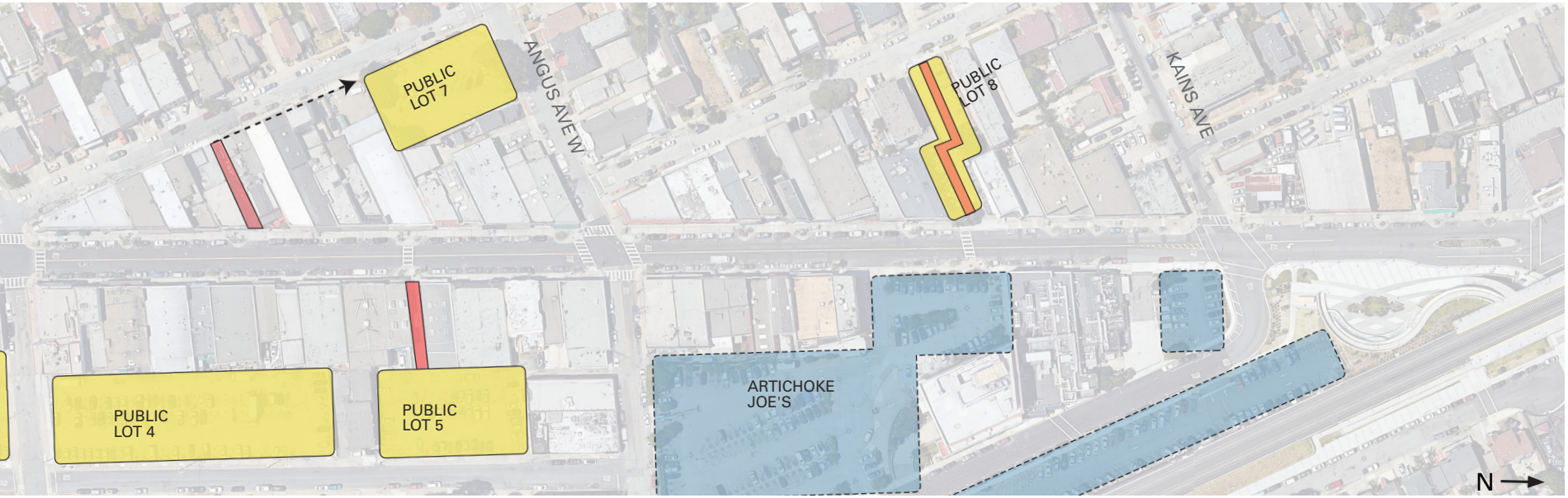
D. PARKING

It is clear from the Downtown Parking Management Plan and from community input that parking is of great value along the corridor. Weekend and weekday peak-hour (8:00 p.m. and 6:00 p.m., respectively) on-street parking occupancy on San Mateo Ave. is 91%. Off-street parking occupancy for these times is 81% and 84%, respectively. Partly because of the relative availability of off-street parking, the Downtown Parking Management Plan recommends other means of managing parking demand instead of increasing on-street parking. These recommendations include pricing and enforcement, and increasing the use of off-street parking resources through better signage, connectivity, and lighting improvements.

The San Mateo Avenue Streetscape Plan follows the Downtown Parking Management Plan's recommendations by including:

- Wayfinding signage to direct drivers and pedestrians to and from the on-street parking lots
- Safety and character improvements in the paseos, which provide critical connections to the on-street parking resources
- Locations for parking-meter kiosks

PASEO CONNECTIONS TO EXISTING OFF-SITE PARKING LOTS


PUBLIC LOT 7
ANGUS AVE W
PUBLIC LOT 8
KAINS AVE
PUBLIC LOT 4
PUBLIC LOT 5
ARTICHOKE JOE'S
N
EXISTING PASEOS
PUBLIC PARKING LOT
PRIVATE PARKING LOT

CHAPTER 3: RECOMMENDATIONS

A. DESIGN OVERVIEW

B. BASELINE FURNISHINGS AND HARDSCAPE

C. OPPORTUNITIES FOR UNIQUE AND ARTISTIC EXPRESSION

D. GREENING AND STORMWATER MANAGEMENT

E. MOBILITY AND PARKING

F. LIGHTING

G. SPECIAL PLACES

H. WAYFINDING AND GATEWAYS

I. ACTIVATION

J. PRIORITIZATION AND COST ESTIMATE

A. DESIGN OVERVIEW

Project Scope

The proposed streetscape design maintains the existing layout of the street and most of the existing curb-line. The proposed improvements will be limited to the public right of way and are focused on the sidewalk and planting areas from the back-of-curb to the property line. The scope of this study does not include improvements to building facades, private properties, or land-use.

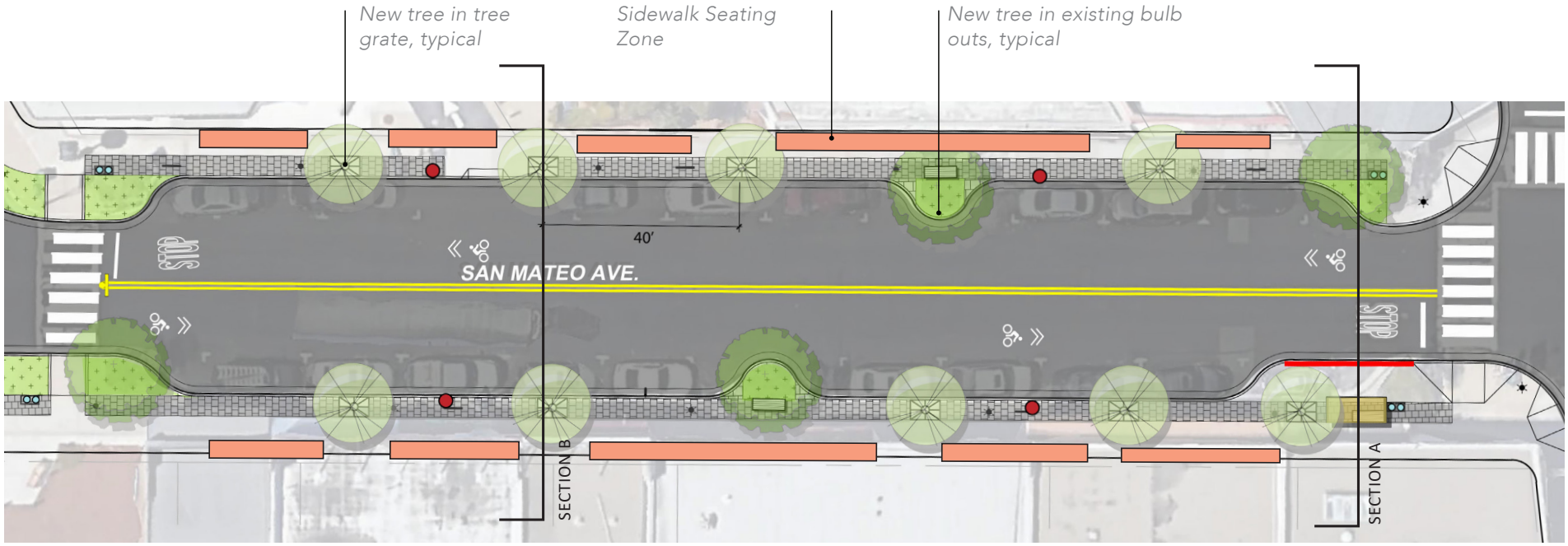
The proposed improvements include:

- Furnishings including benches, bike racks, trash and recycling receptacles
- New sidewalk paving
- Accessibility improvements to bring the public right of way into conformance with current California building code.
- Opportunities for unique and artistic expression, including public art, custom furnishings and special paving
- Improved Planting and Greening
- Stormwater-management features including permeable paving, suspended pavement, and bioretention planting areas
- Mobility and parking improvements including changes to the street and curb striping, improved bus stops, sharrows, and directional signage and lighting to improve access to off-street surface parking
- Lighting improvements, including new streetlights and decorative lighting
- Improvements to special places including Posy Park, Centennial Park, and paseos
- Wayfinding signage and gateways

Design Character

The proposed design character was developed through the community-engagement process. The key words that emerged to describe the preferred character were “simple,” “elegant,” and “unique.” Because the street environment is already diverse and visually complex, the proposed design is intended to be distinguished from its context by being refined, consistent, and simple. At the same time, the design is meant to convey a unique sense of place through the selection of furnishings and materials that are not found on many other streetscapes, and through the implementation of select custom elements and artistic expression in focused locations. The design is meant to be forward-looking and contemporary, while the forms of the furnishings convey a sense of movement related to the city’s connection to transportation.

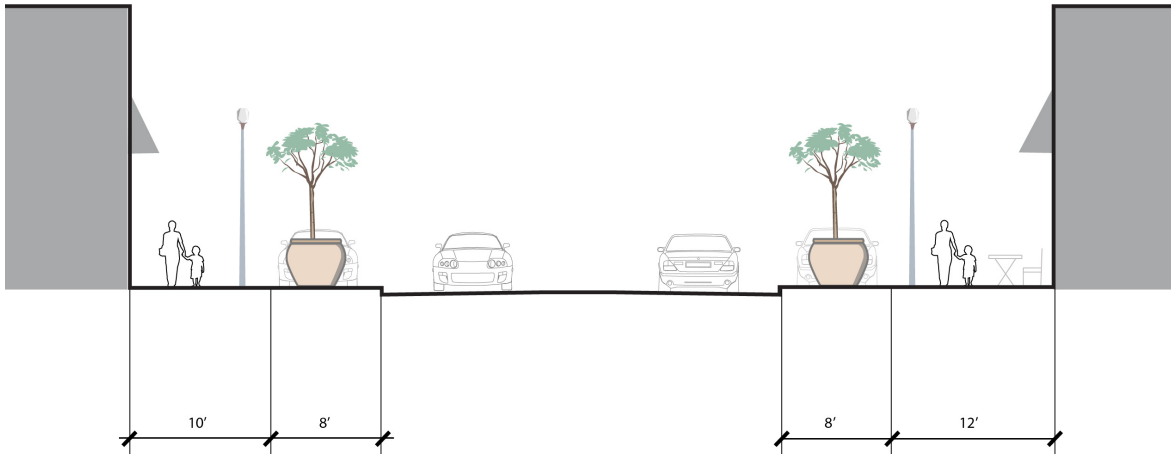
TYPICAL SIDEWALK USE ZONES



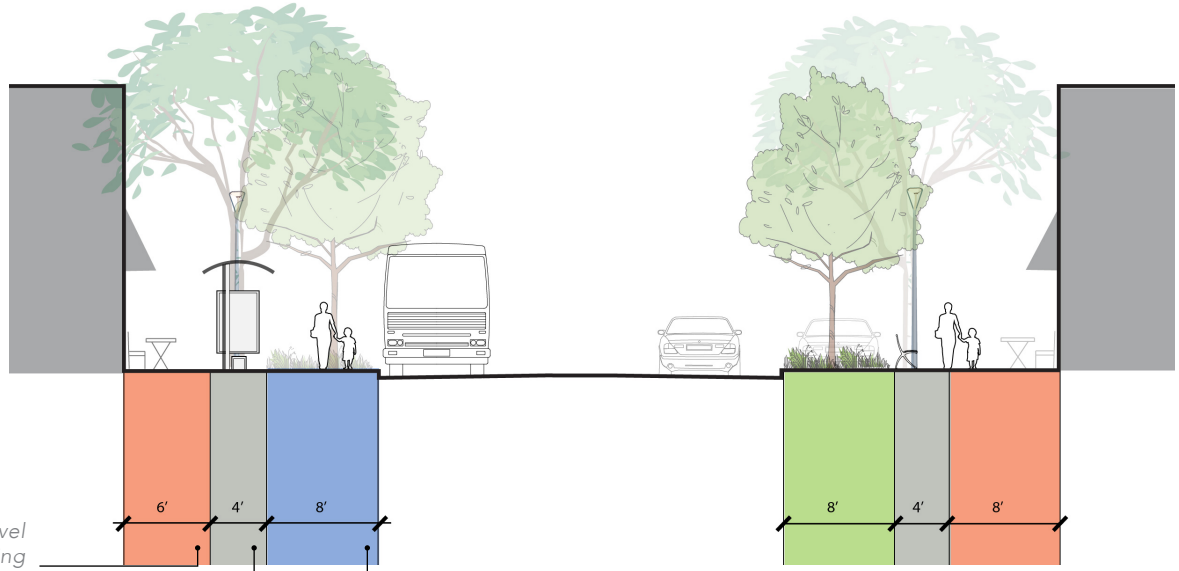
Typical sidewalk use zones plan

TYPICAL STREET SECTIONS

Existing Street Section A



Proposed Street Section A:
Bus stop and corner bulb-out

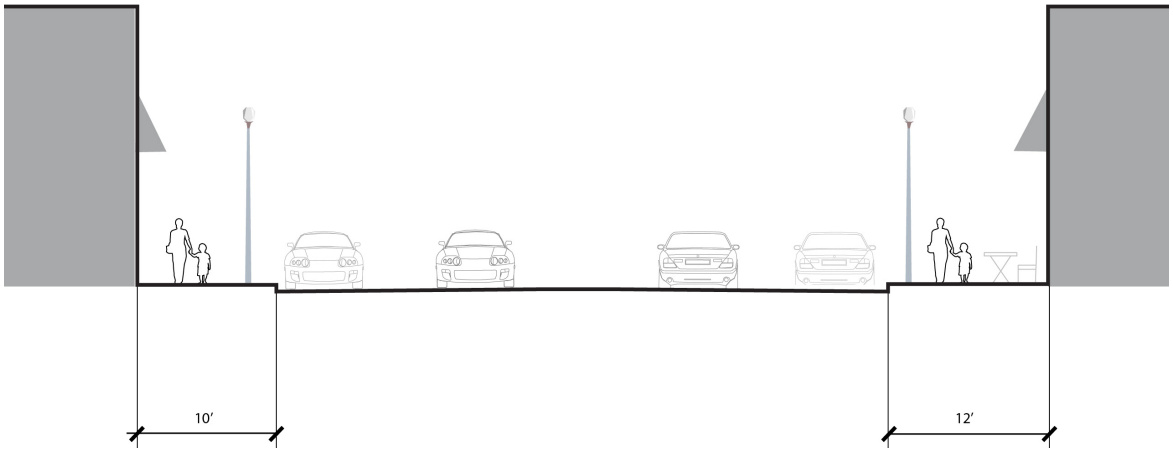


6′ (west) - 8′ (east) path of travel and intermittent cafe seating

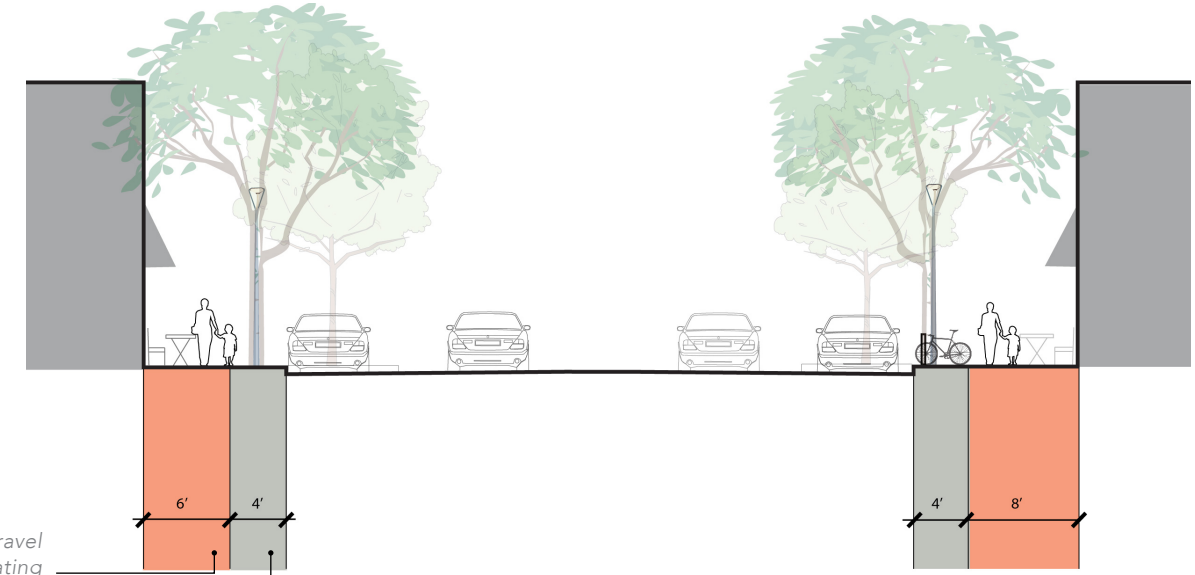
4′ tree and amenity strip

8′ parking and bulb out (for bus and planted zones)

Existing Street Section B



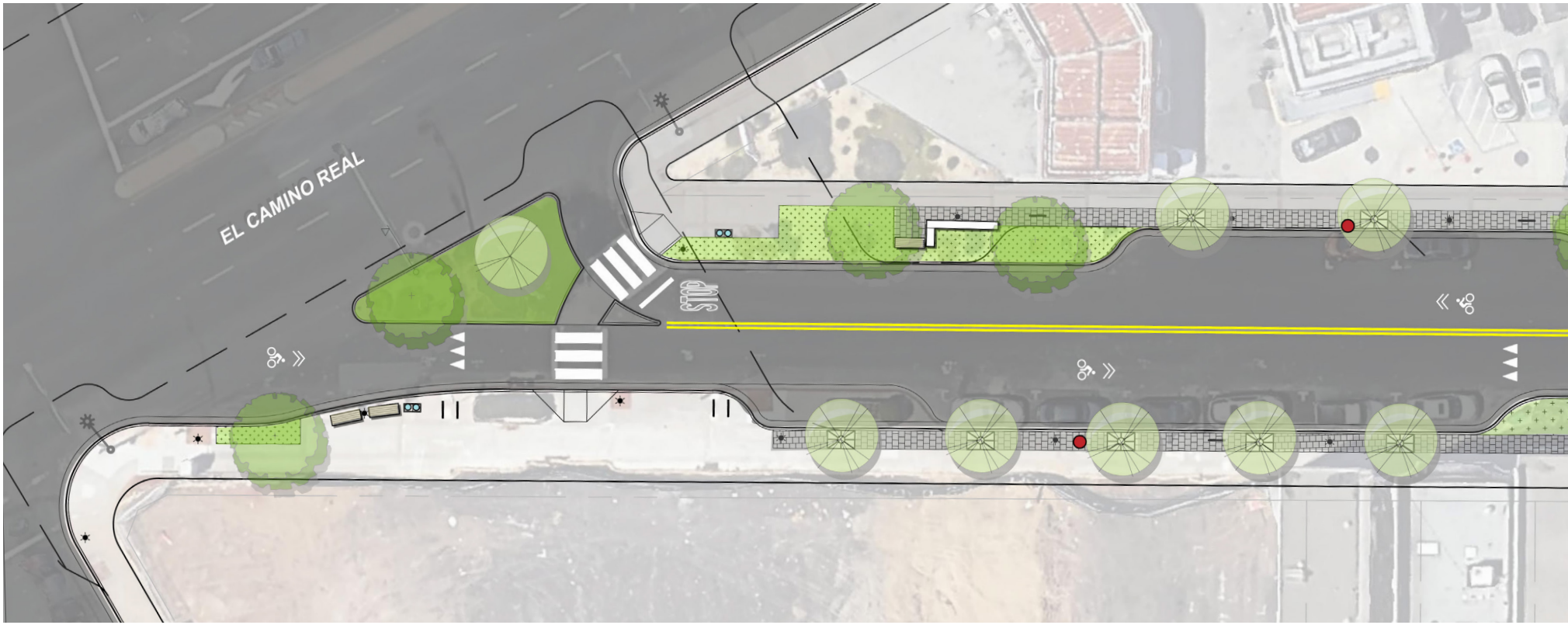
Proposed Street Section B: Midblock



6' (west) - 8' (east) path of travel and intermittent cafe seating

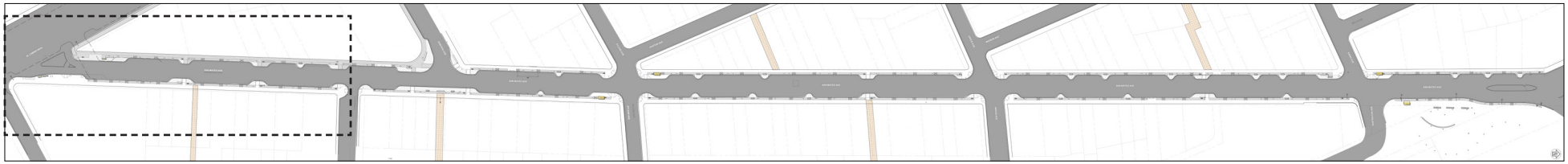
4' tree and amenity strip

DESIGN OVERVIEW: ILLUSTRATIVE PLAN



LEGEND

- LIGHTPOLE
- BIKE RACK
- PARKING METER
- BENCH
- SEATWALL
- TRASH AND RECYCLING
- BUS SHELTER
- PASEO
- ULMUS PARVIFLORA
- KOELREUTERIA BIPINNATA
- PLANTING

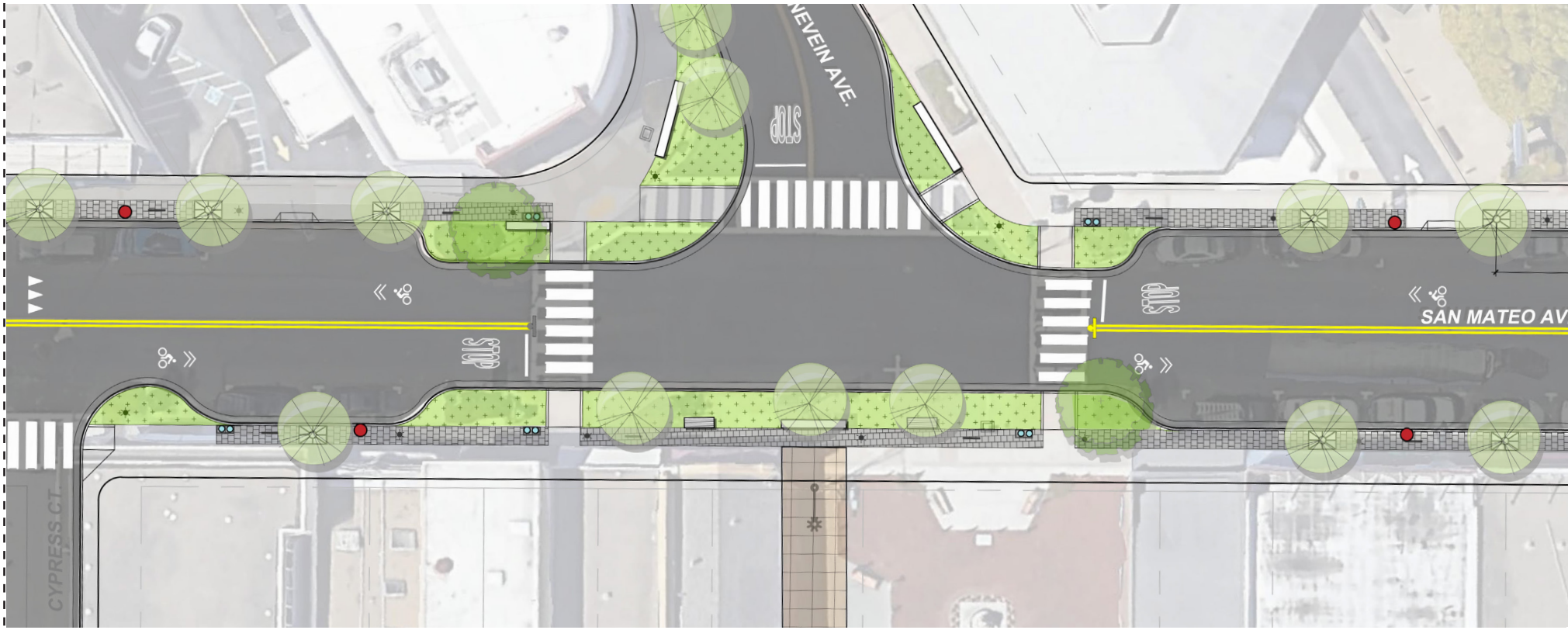


KEY PLAN

MATCHLINE, SEE PAGES 30-31

N

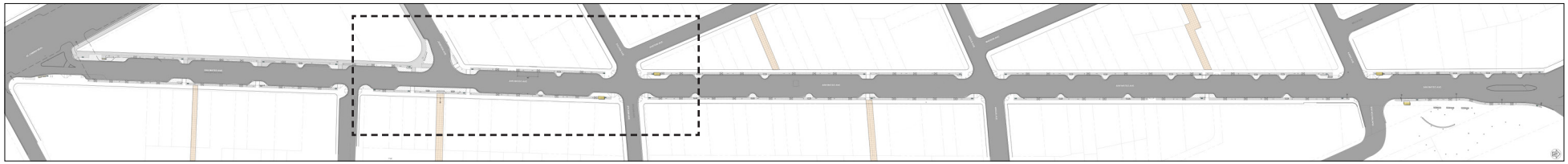
DESIGN OVERVIEW: ILLUSTRATIVE PLAN



MATCHLINE, SEE PAGES 28-29

LEGEND

- LIGHTPOLE
- BIKE RACK
- PARKING METER
- BENCH
- SEATWALL
- TRASH AND RECYCLING
- BUS SHELTER
- PASEO
- ULMUS PARVIFLORA
- KOELREUTERIA BIPINNATA
- PLANTING



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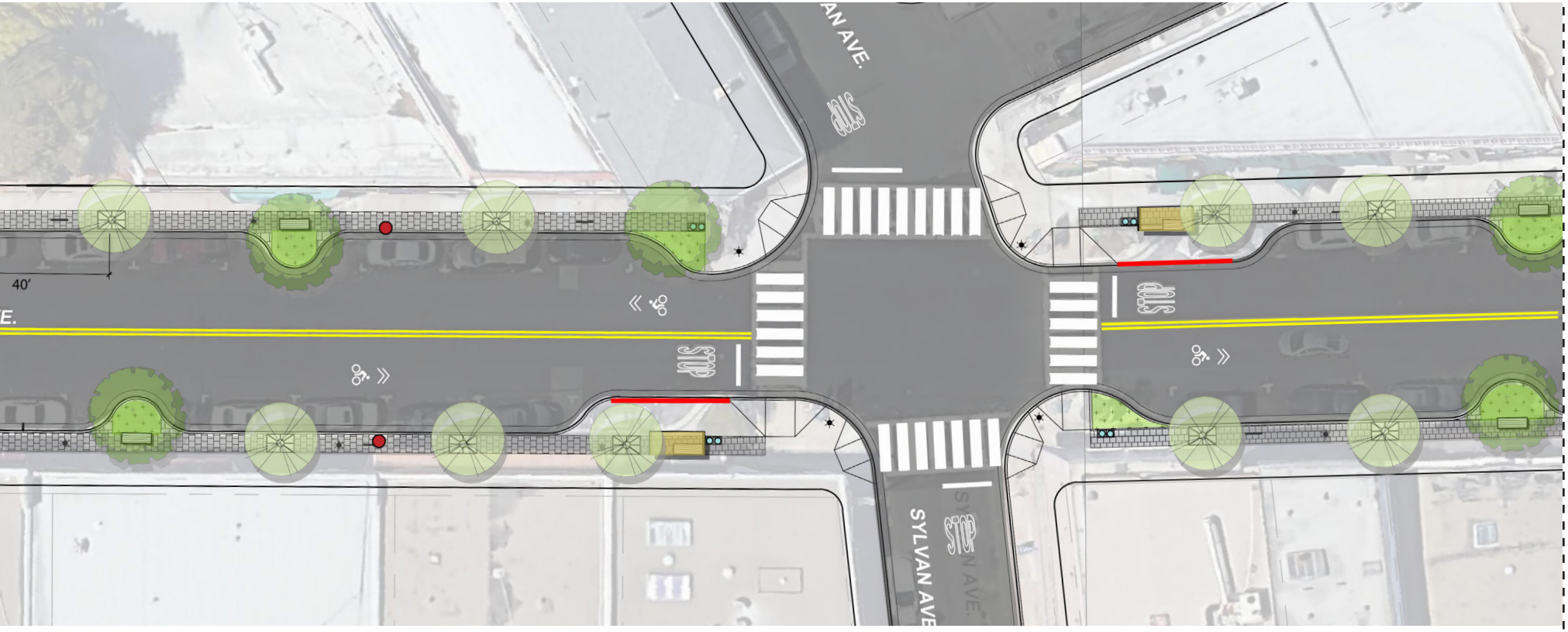
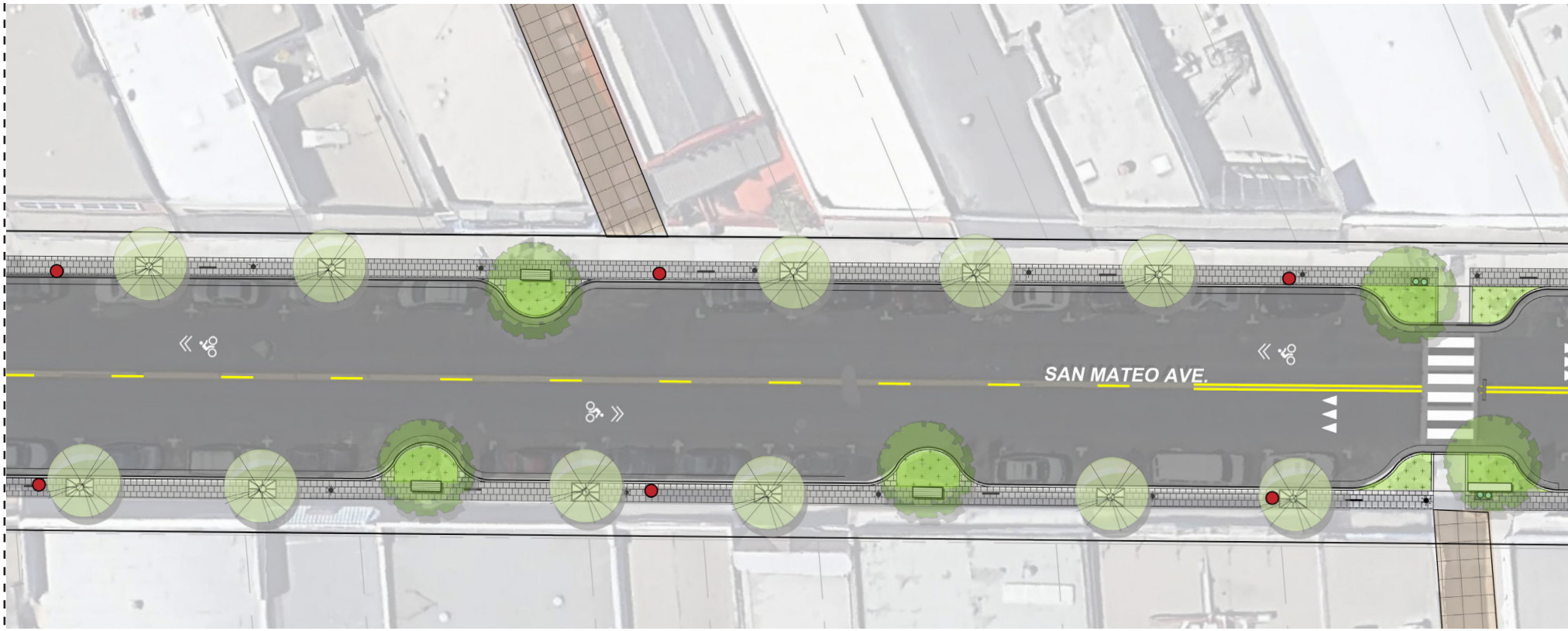


MATCHLINE, SEE PAGES 32-33

N

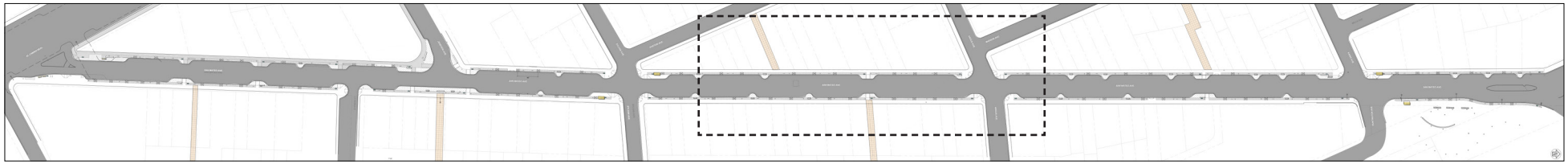
DESIGN OVERVIEW: ILLUSTRATIVE PLAN



MATCHLINE, SEE PAGES 30-31

LEGEND

- LIGHTPOLE
- BIKE RACK
- PARKING METER
- BENCH
- SEATWALL
- TRASH AND RECYCLING
- BUS SHELTER
- PASEO
- ULMUS PARVIFLORA
- KOELREUTERIA BIPINNATA
- PLANTING



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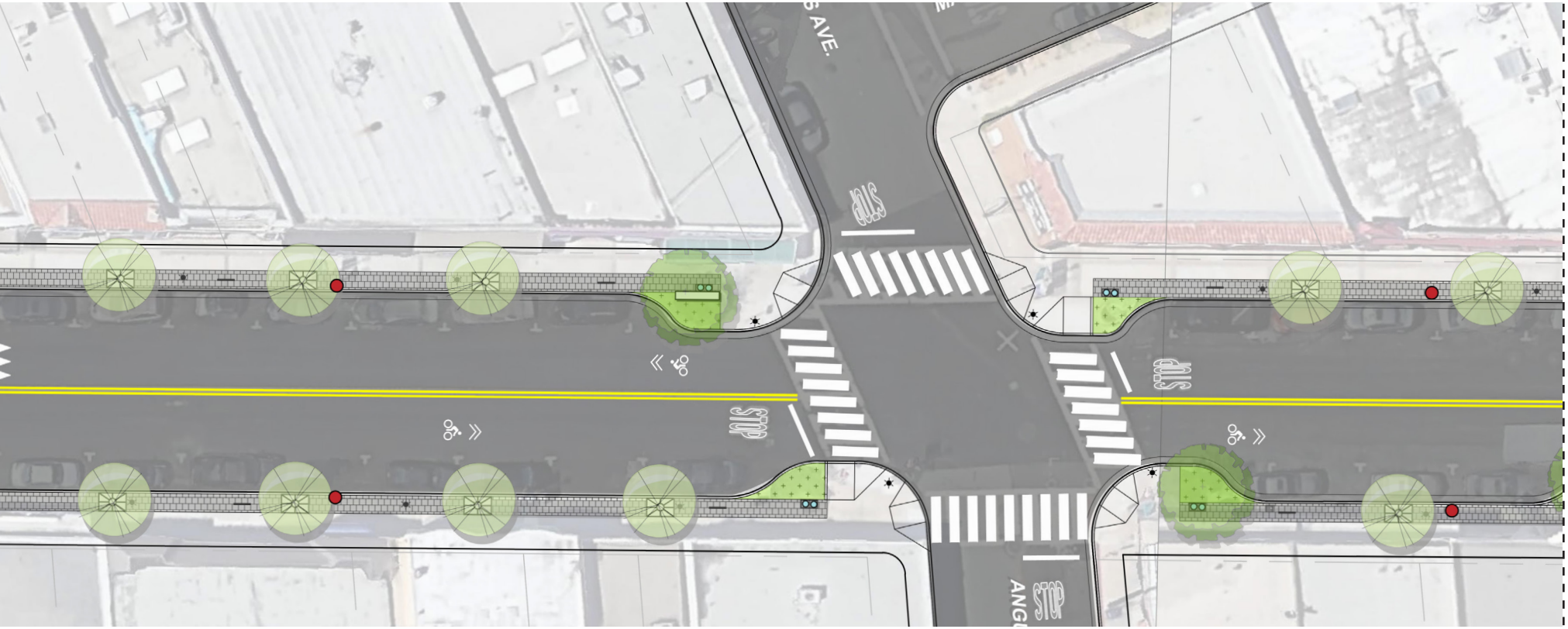
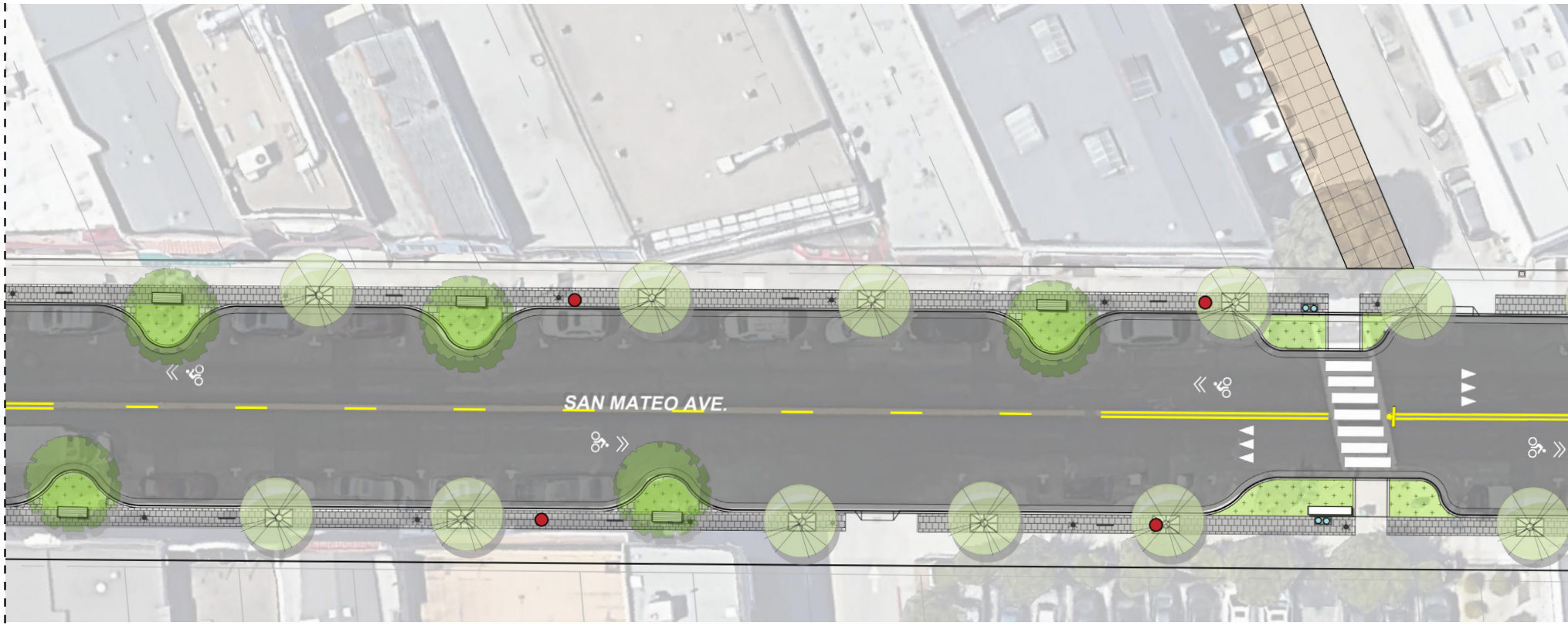


MATCHLINE, SEE PAGES 34-35

N

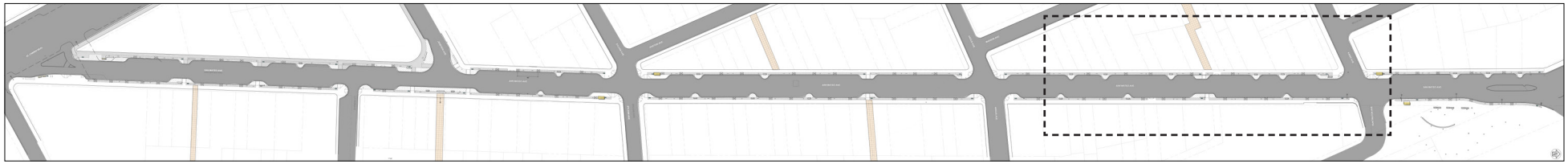
DESIGN OVERVIEW: ILLUSTRATIVE PLAN



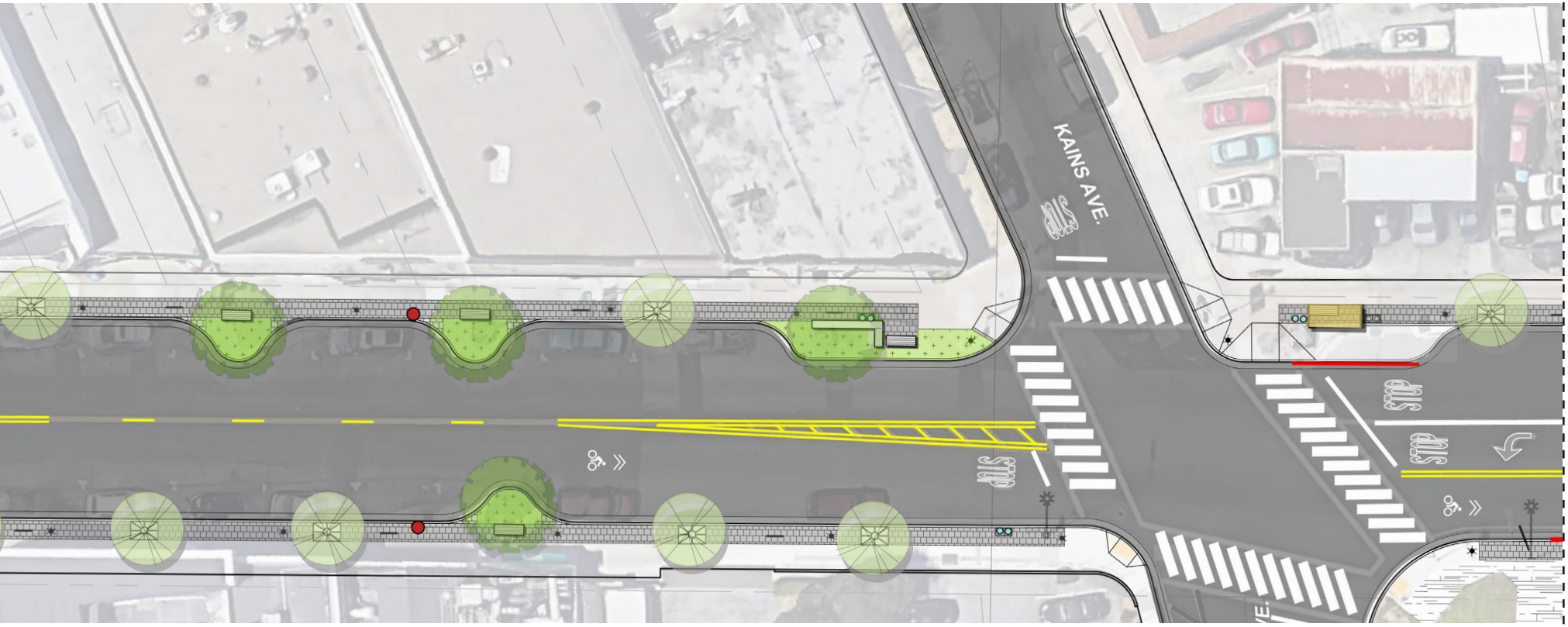
MATCHLINE, SEE PAGES 32-33

LEGEND

- LIGHTPOLE
- BIKE RACK
- PARKING METER
- BENCH
- SEATWALL
- TRASH AND RECYCLING
- BUS SHELTER
- PASEO
- ULMUS PARVIFLORA
- KOELREUTERIA BIPINNATA
- PLANTING



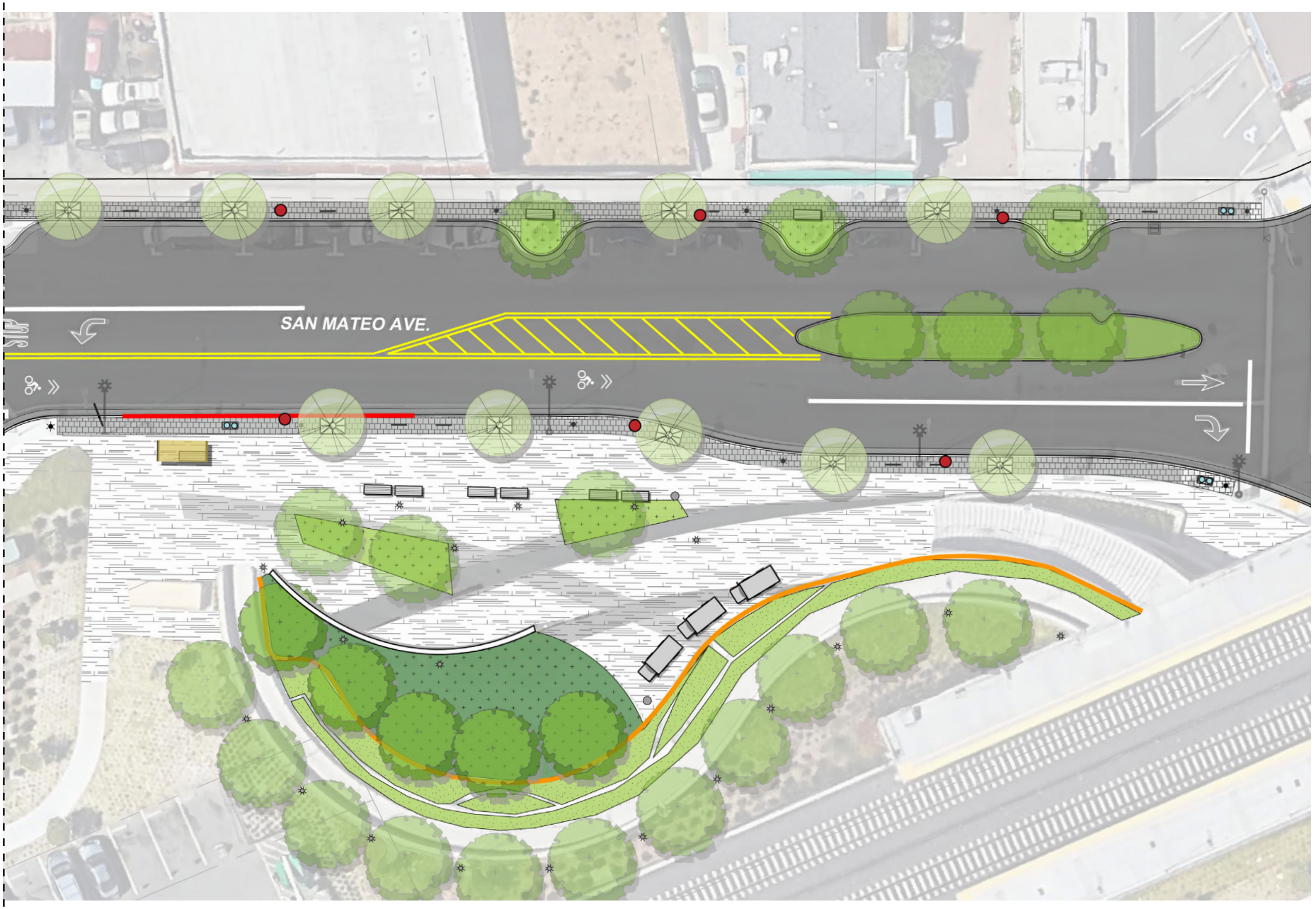
KEY PLAN



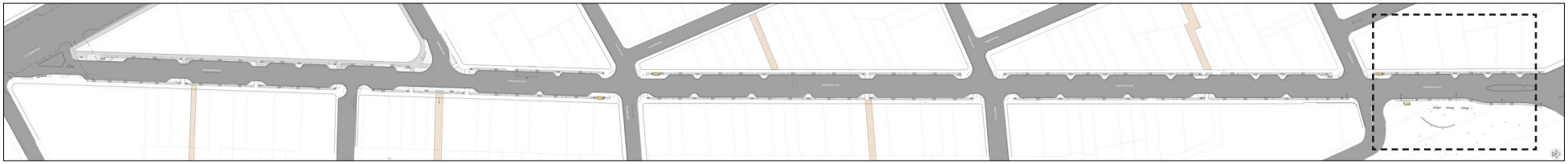
MATCHLINE, SEE PAGES 36-37

N

DESIGN OVERVIEW: ILLUSTRATIVE PLAN



MATCHLINE, SEE PAGES 34-35



KEY PLAN

LEGEND

- LIGHTPOLE
- BIKE RACK
- PARKING METER
- BENCH
- SEATWALL
- TRASH AND RECYCLING
- BUS SHELTER
- PASEO
- ULMUS PARVIFLORA
- KOELREUTERIA BIPINNATA
- PLANTING

B. BASELINE FURNISHINGS AND HARDSCAPE

Baseline palette

The baseline furnishings and hardscape palette creates the "simple and elegant" backdrop for both the existing character of the street and the proposed opportunities for unique and artistic expression. Key features of the proposed palette are described below.

Because the final selection of materials and furnishings will occur during future design and construction documentation phases and are dependent on the project budget, this plan provides some alternatives that express the design intent. The exception to this is the trash and recycling bins, which have been vetted with City staff and Recology (the waste-management company providing trash and recycling collection services) for their suitability. Trash receptacle replacement may be a near-term project that is completed prior to the overall streetscape implementation.

Cast-in-place Concrete

Unit Paving

Paving

- Simple cast-in-place concrete pavement with a broom finish and a rectangular grid of scorelines in the walkway zone. Though cast-in-place concrete is a common material, the pavement should be finished and scored with attention to craftsmanship and detail. The finish and color should be consistent throughout the site, and the scorelines should be deep, straight and crisp.

- Permeable unit pavers of a consistent gray color aligned with the tree-planting zone, in a running-bond pattern. The unit pavers should be rectangular or square, with a crisp edge.

Lightpole: (top) Lunaria Light, Sternberg Lighting; (bottom) FGP Area Light,
Bench: (top) Parc Vue bench, Landscape Forms (bottom) Lily bench, Victor Stanley. Bike Rack: (top) Bike Rack: Ring Bike Rack, Landscape Forms, (bottom) U Bike Rack, Conceptual Site Furnishings.
Tree Grate: (top) Rain Tree grate, Iron Age Designs, (bottom) Cascade Tree Grate, Urban Accessories.
Trash and Recycling: Universal Litter and Recycling Receptacle, Forms + Surfaces.

Lightpole

Bench

Bike Rack

Tree Grate

Trash and Recycling Receptacles

Furnishings and Light Fixtures

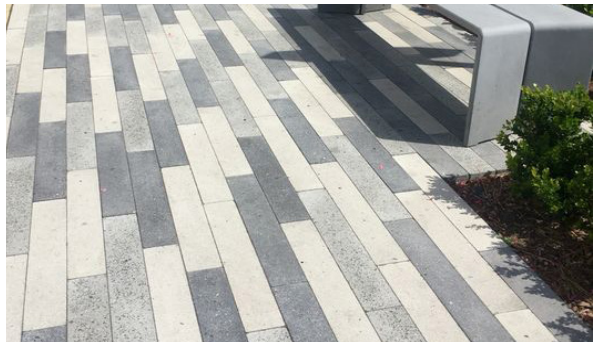
- Modern/contemporary furnishings and light fixtures with a motif of curving forms expressive of movement and flight.
- Stainless-steel or silver-colored metal (e.g., aluminum or powder coated steel) is the primary material for the furnishings and light fixtures.

C. OPPORTUNITIES FOR UNIQUE AND ARTISTIC EXPRESSION

Within the simple and elegant framework, the plan proposes select locations and features for artistic expression. Because the existing streetscape environment is so varied and visually complex, it is important that the locations and quantities of artistic elements don't conflict with their context. An overall theme for these elements should be adhered to, such as one artistic paving pattern applied to all of the paseos and potentially at Posy Park and Centennial Park as well. Similarly, one artistic or custom seatwall design or bench should be implemented throughout the corridor, and one unique crosswalk design. If the crosswalks are constructed of unit pavers, the pattern and material could be the same as in the paseos to further unify these artistic elements throughout the streetscape.

The images included in this section are examples of similar elements that illustrate some of the possibilities; they are not meant to represent the final design concept for San Mateo Avenue. Refinement of the overall design would occur during the Design Development process, during which stage the materials and patterns of all of these elements would be selected.

Through the community-engagement process, the following opportunities for unique and artistic expression were identified:



Paving

Paving at Paseos, Parks and Plazas

Paving at the paseos (or alleyways), parks and plazas. This would ideally be a type of unit paving similar to the "baseline" permeable pavers, but in different colors and/or sizes, arranged in a custom-design pattern. Alternatively, cast in place concrete with special colors, finishes and scoring patterns could be utilized.

Artistic Crosswalks

Artistic Crosswalks

Artistic crosswalk striping or crosswalk materials. Crosswalks can be simply painted in creative ways (given they conform to the functional safety requirements of standard crosswalks), or they can be constructed out of unit paving or cast-in-place concrete.

Custom Seatwall and Lighted Bench

Seatwalls and planter walls

Custom cast-in-place concrete or custom precast concrete seatwalls and planter walls could be located in certain locations throughout the streetscape, as indicated on the overall plan. Alternatively, there is a range of prefabricated precast seatwall products that would fit with the overall design theme.

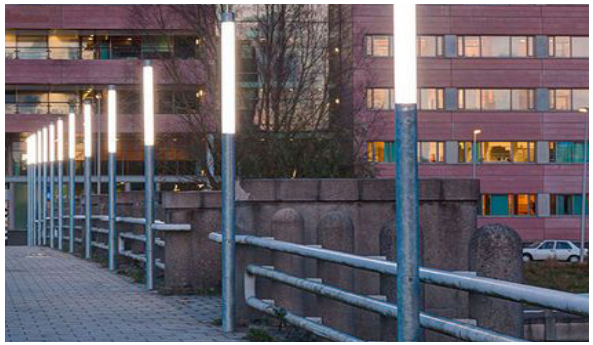
Custom, artistic benches could be located in the parks, plazas and paseos to emphasize the uniqueness of those spaces. Alternatively, budget permitting, a custom bench could be designed and fabricated for use along the entire corridor.

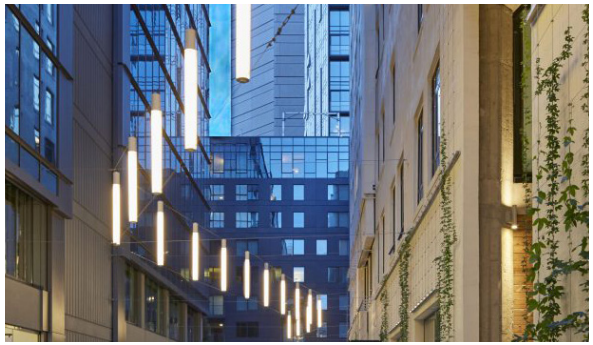
Seasonal Lighting

Custom Lighting

Custom designed lighting features or uncommon lighting products could be incorporated throughout the design. Opportunities include:

- Lighting incorporated into benches and seatwalls. (These should be durable LED fixtures, recessed such that they are difficult to tamper with.)





Paseo Lighting

- Lighting at the paseos
- Seasonal lighting
- Gateway elements (see below)
- All custom lighting elements should be designed and engineered to withstand wind-loads. Further study would be required to determine the suitability of cable-suspended lighting fixtures, for example.

D. GREENING AND STORMWATER MANAGEMENT

Greening

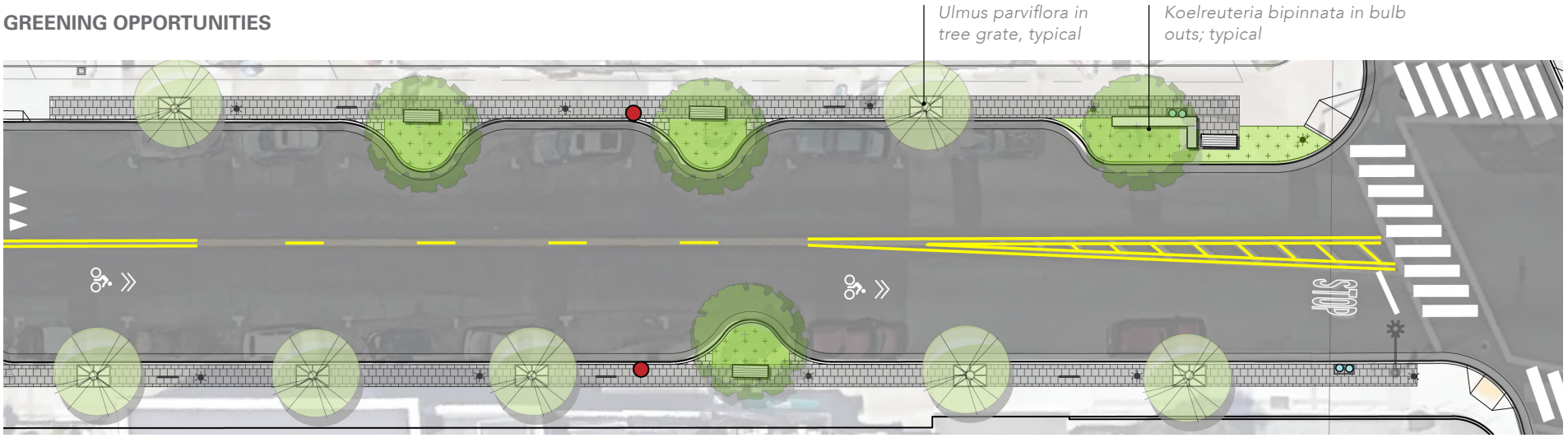
One of the principle recommendations of this plan, as well as the Transit Corridors Plan, is to plant regularly spaced street trees in at-grade tree wells. This plan recommends trees in tree wells with tree grates at approximately 40-foot on-center spacing. (Final tree spacing will need to be coordinated with underground utilities and other potential conflicts.) Trees should also be planted in the existing mid-block and corner bulb-outs (where sight-lines would not be blocked), which provide the opportunity to remove the pavement from the bulb-outs to provide a larger soil volume. Currently, there are 45 trees in pots, and 11 trees planted in-grade. This plan recommends 118 trees planted in-grade, and 7739 square feet of planting area.

Soils and Pavement - Planting Construction Considerations

In order to prevent sidewalk damage as well as promote tree health, it is critical that the tree wells are large. The majority of sidewalk damage is due to the pavement being placed too close to the root-flare of the tree. This plan recommends 4' x 6' tree wells; this should be considered a minimum. This plan recommends additional improvements to the soil under the sidewalks, such as structural soil or suspended pavement, which also help to prevent sidewalk damage and are beneficial to the trees.

Suspended pavement is the best option, and it can be cost-competitive with structural soil if considered on the basis of planting-soil volume (as opposed to total volume).

GREENING OPPORTUNITIES



Ulmus parvifolia

Koelreuteria bipinnata

Mid-block bulb-out opportunity

Trees

Two tree species are recommended. The trees planted in new tree wells along the corridor (i.e., not in the bulb-outs) should be *Ulmus parvifolia* (Chinese elm), while the summer-flowering *Koelreuteria bipinnata* (Chinese flame tree) is indicated in the existing bulb-outs.

Ulmus parvifolia is a large-scale shade tree with a relatively open branching habit that will provide ample dappled shade and will be an appropriate scale for the street. At maturity, the branches will be high enough to provide visibility to shop signs for pedestrians and from vehicles. Koelreuteria bipinnata will be a contrasting, smaller ornamental tree which flowers in the summer. Both species are climate-appropriate for San Bruno; the Ulmus parvifolia was recently planted at The Aperture development, at the south end of the project area.

Understory

All planting and irrigation will be required to meet MWELO water-use requirements. Shrubs and groundcovers should be drought-tolerant and low-water-use.

Corner bulb-out opportunity

Stormwater Management

SMCWPPP C.3 stormwater treatment requirements provide an exclusion for projects that are limited to "sidewalk replacement." If this streetscape project is determined to fall under that category, no stormwater management features would be required.

If additional elements of the project are implemented such that the project is determined not to fall under the "sidewalk replacement category," then the use of a permeable pavement strip in the sidewalk, sized to act as self-retaining areas, combined with the proposed new trees planted along the corridor, meets the SMCWPPP C.3 stormwater-treatment requirements to manage runoff from the replaced sidewalks within the project area (assuming that the roadway pavement itself is not replaced).

Budget permitting, this plan recommends additional stormwater-management features including:

- Suspended pavement under the parking lane and sidewalks to treat stormwater and provide additional planting soil to support healthy, large and long-lived trees. (Where necessary, underground utilities can be routed through the suspended pavement structure.)
- Permeable pavement in the parking lane
- Creating bioretention planting areas or flow-through planters in existing bulb-outs where existing drain inlets and/or grades allow. There is not enough potential planting area within existing bulb-outs to treat stormwater for the entire project area watershed to comply with C.3 requirements, however this recommendation is based on the principal of providing as much stormwater treatment as possible. (In order to treat the stormwater from the entire project area to meet C.3 requirements, approximately 3,300 additional square feet of bioretention area would be required – however this would require the removal of on-street parking spaces, which the plan does not recommend.)
- Creating a bioretention planting area at the southwest corner of Jenevein Ave. and San Mateo Ave. (This would treat stormwater flowing from Jenevein Ave., not San Mateo Ave.)

Potential Constraints to greening and stormwater management

Three underground utilities are potential constraints to planting trees and constructing sub-grade stormwater-management features such as bioretention planters and suspended pavement. They are:

- A 44-inch steel storm-drain pipe that runs along the east side of the street from El Camino Real to mid-block between Sylvan and Angus Avenues. The top of this pipe is approximately 3-4 feet below grade. This plan recommends planting trees above this pipe, as the steel material is not likely to leak or need replacement in the foreseeable future. The depth to the top of the pipe is more than adequate to allow for the trees' roots.
- A 20-foot-wide concrete box culvert that runs from midblock between Syvan and Angus Avenues to the southeast corner of Angus Ave. with its eastern edge under the sidewalk. The exact depth from finish grade to the top of the box culvert is unknown, but it is likely to be between 1 foot and 3 feet deep. If it is equal to or greater than 2 feet below grade, this plan recommends planting trees on top of the structure. If it is less than 2 feet below grade, it may be possible to provide planting in raised planters.
- An 8-inch water line on the east side of the street from Sylvan Ave. to Angus Ave. (The water line continues north, past Angus, but at this point, it jogs away from proposed amenity and planting areas.) This plan recommends moving this water line to the back-of-sidewalk in order to make more room for tree planting in this area.

Green infrastructure

Jenevein Greening Opportunity

At-grade planting opportunities are shown throughout the plan. These include primarily the existing mid-block and corner bulb-outs. In addition to these, the intersection of Jenevein Ave. and San Mateo Ave. represents a significant opportunity to increase planting by shortening the corner radii as shown. The proposed layout accommodates a 40-ft bus to make a right turn from southbound San Mateo Ave. onto Jenevein Ave. completely within its lane, and a 30-ft box truck to make a right turn from Jenevein Ave. onto San Mateo Ave. while encroaching slightly into the opposite lane. (These 30-foot box truck types use this street only ocassionally.) It also accomodates street sweepers. At the southwest corner (in front of the Bank of America), there is an existing drain inlet such that the planting area is an opportunity for a significant stormwater-management feature (see pages 50-51).

JENEVEIN AVENUE RAIN GARDEN OPPORTUNITY

E. MOBILITY AND PARKING

While this plan essentially retains the existing mobility design for all transportation modes, the following modifications are recommended:

Curbside Management and Business Loading

- Convert the center stripe from "no passing" (double solid yellow line) to "passing allowed" (single dashed yellow line) where possible.
- Provide a white-curb loading zone in front of La Petite Baleen Swim School. Community input indicated that this business requires pick-up and drop-off of children, which is currently done unsafely from double-parked vehicles. This would require the removal of two on-street parking spaces.
- Provide three loading zones (yellow curbs) in widely-spaced locations along the street. This would require the removal of six on-street parking spaces. City Council can adjust the loading-only schedule from the times specified in the Municipal Code to provide customer parking during peak hours.

Public Transit

- Improve the existing bus stops along the project area by extending three bulb-outs 20 feet (two at Sylvan Ave and one at Kains Ave). This would bring these bus stops into compliance with SamTrans and accessibility requirements, and it would remove three parking spaces from the project area. (Bulb-out extensions shall be designed to accommodate street sweepers.) Additionally, SamTrans requested that bus shelters be installed at all four bus stops.

Pedestrian Safety and Accessibility

- Improve and maintain sightlines at crosswalks for pedestrian safety. For this reason, trees are not proposed in the bulb-outs on the approach sides of the crosswalks.
- Where sidewalk cross-slopes are in excess of 2% from the property line to the back-of-curb, provide a 2% maximum cross-slope in the path of travel and a slope greater than 2% in the furnishings zone.
- At a minimum, reconstruct non-compilant curb ramps as necessary to provide code-compliant curb-ramps. (All of the curb-ramps in the project area may be replaced to match the adjacent new paving.)
- Install high-visibility continental crosswalk striping and yield striping ("sharks teeth"). If artistic or unique crosswalk markings or paving are installed, they should comply with crosswalk striping safety standards.

Bicycle Facilities

- Paint "sharrows" in the travel lanes along the project area.
- Provide bike racks along the sidewalk at approximately 100-foot spacing. Regularly spacing bike racks along the sidewalk, rather than grouping them in limited locations allows cyclists to lock their bikes closer to their destinations.

Parking

- Provide wayfinding signage, including signage directing drivers to the off-street surface lots.
- Improve the paseos that lead to off-street surface parking lots, especially with additional lighting and wayfinding signage.
- Install parking meters, as recommended by the Downtown Parking Management Plan.
- Provide on-street accessible parking as recommended by the Accessibility Transition Plan, which is being developed concurrently with the San Mateo Avenue Streetscape Plan. There are two potential options for on-street accessible parking. If on-street accessible parking is to be provided on San Mateo Ave., then additional curb-ramps will be required, either at the inside of the bulb-outs closest to the parked car, or mid-block (see example photographs to the right). This would require the deletion of recommended planting areas, trees, seatwalls, benches, and other amenities where they conflict with the curb-ramp. A potential alternative would be to provide accessible parking stalls on the side streets, at the parking stalls closest to San Mateo Ave. In that case, the existing corner curb-ramps could serve those parking stalls, since the bulb-outs do not extend into the side streets. There are five parking stalls on side streets that might serve this purpose. Further study is required to determine if

these locations could meet the need for accessible parking stalls given accessibility standards and guidelines.

- Maintain the existing on-street parking, with the exception of the removal of eleven spaces total: one at each of the three bus stops, as required per SamTrans and accessibility code; two at La Petite Baleen Swim School, to provide a safe loading zone for children using that facility; and two at each of the three yellow-curb loading zones.

Striping Plan

The Proposed Striping Plan on the following pages illustrates the street and curb markings described above, with the exception of the yellow loading zones which will be determined through a separate engagement process.

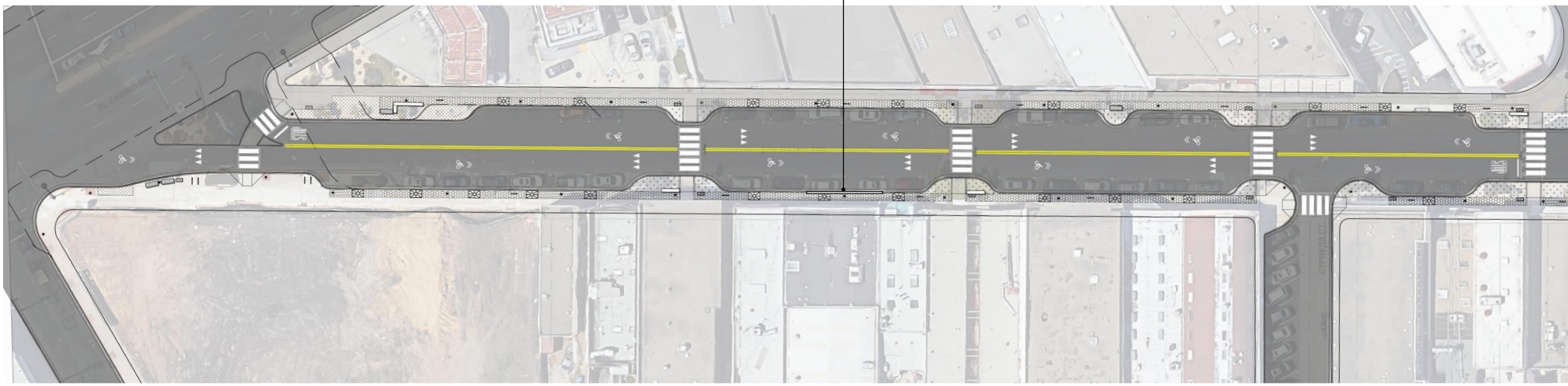
ACCESSIBLE CURB-RAMP DESIGNS FOR ON-STREET ACCESSIBLE PARKING

Curb ramp at bulb-out

Mid-block curb ramp

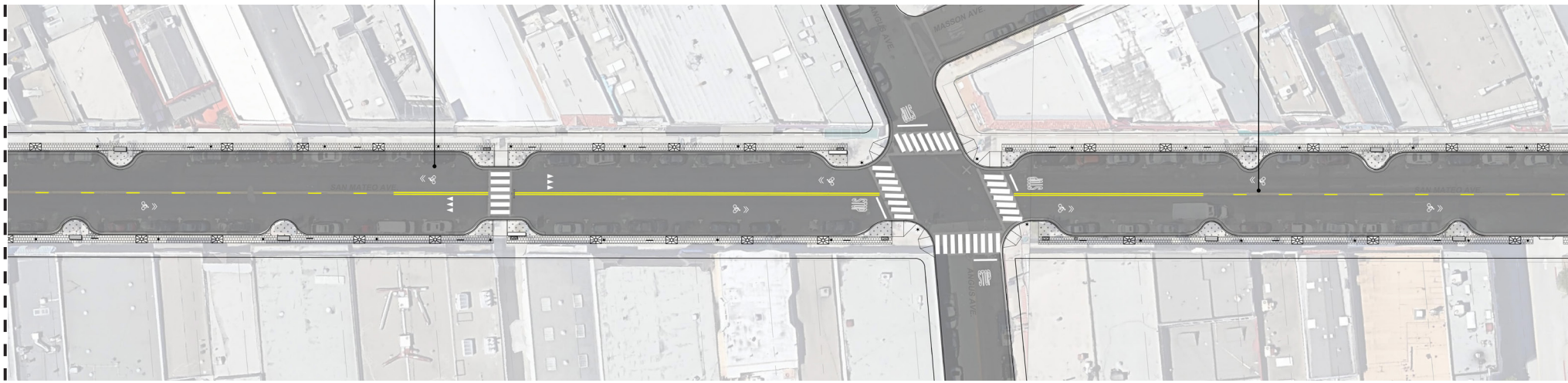
PROPOSED STRIPING PLAN

Proposed white painted 'passenger loading only' curb zone

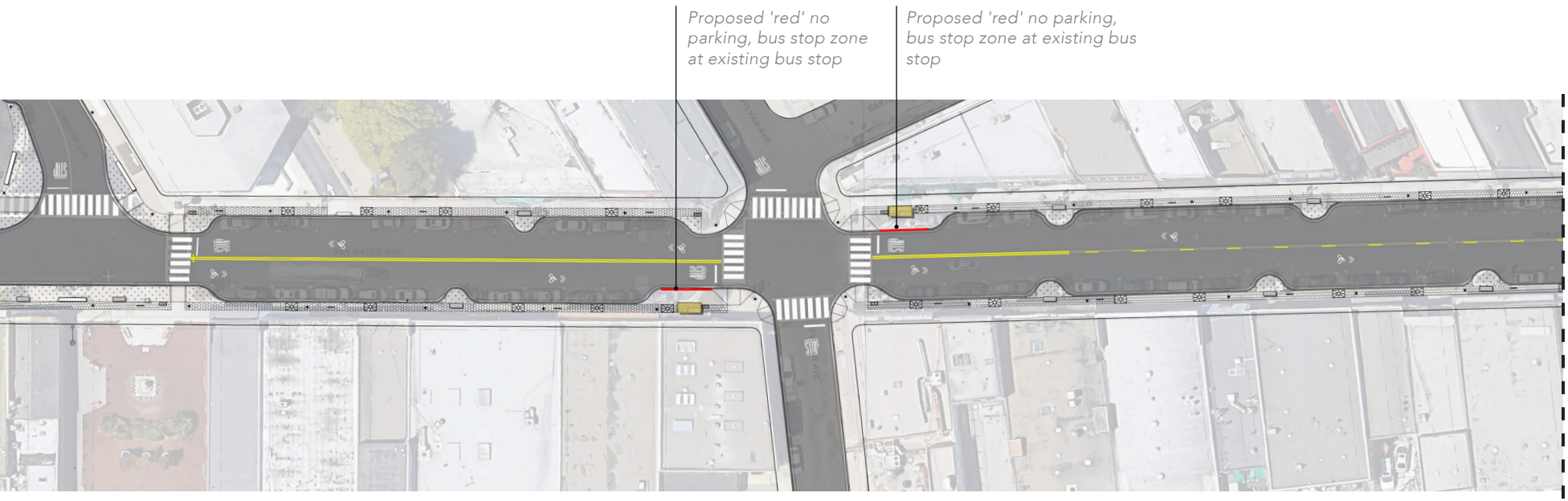


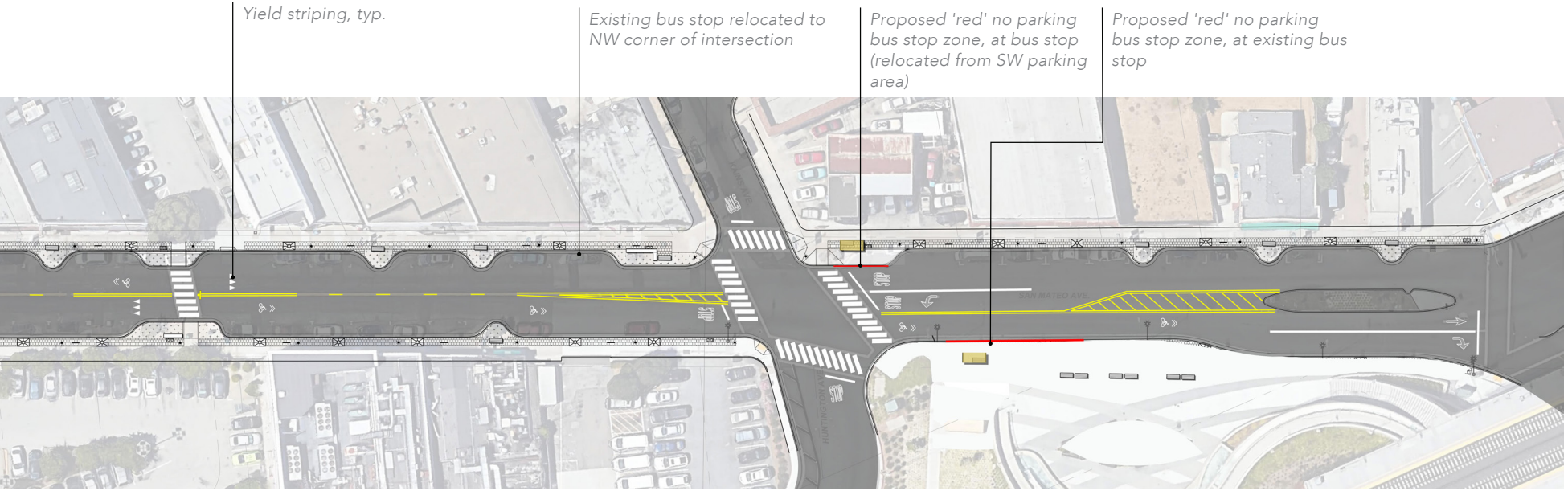
Sharrows, typ.

'Passing allowed' dashed yellow striping, typ.



MATCHLINE, SEE ABOVE


Proposed 'red' no parking, bus stop zone at existing bus stop
Proposed 'red' no parking, bus stop zone at existing bus stop
MATCHLINE, SEE BELOW


Yield striping, typ.
Existing bus stop relocated to NW corner of intersection
Proposed 'red' no parking bus stop zone, at bus stop (relocated from SW parking area)
Proposed 'red' no parking bus stop zone, at existing bus stop

F. LIGHTING

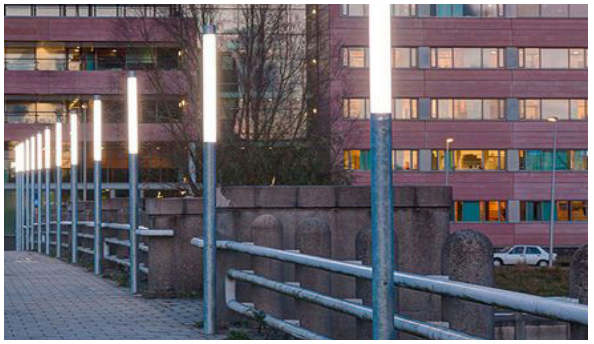
A broad consensus emerged through the community-engagement process that improved lighting should be a priority of the design. A photometric analysis confirms that the existing streetlights do not provide adequate light levels or uniformity. Improved lighting will help activate the street at night, when many community members feel the street is under-utilized. The proposed lighting design serves two functions: First, pedestrian-level pole-mounted light fixtures and lighting in the paseos will provide safety and overall illumination. Second, accent lighting will provide visual interest at night, enhancing the unique character and attractiveness of the street.

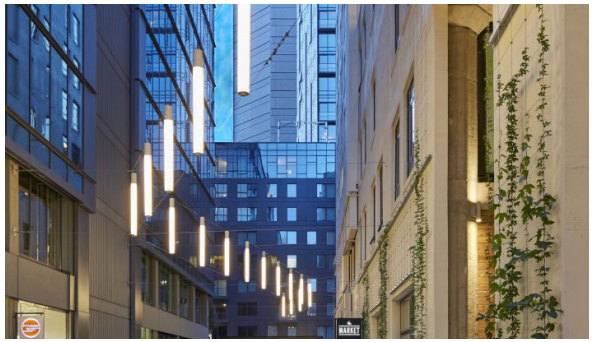
Pole-Mounted Streetlights

All of the existing streetlights along the corridor are recommended to be removed, and new pole-mounted streetlights are proposed at approximately 60-feet on-center. The streetlights should be approximately 16 feet high. This mounting height provides a pedestrian scale, while the spacing provides adequate light for vehicular as well as pedestrian safety. Taller fixtures at wider spacing tend to create a sense of a vehicular-scaled rather than pedestrian-scaled streetscape and are therefore not recommended. The light fixtures and poles should be metallic silver in color, and should be contemporary in style, with forms that convey the motif of movement. The IESNA standard of 1.2 average foot-candles and a uniformity ratio within 2.0 of the 4.0 IESNA standard is recommended. (The wattage and optics of the light fixtures would be determined during the Design Development stage of the design process, and final fixture layout would depend of photometric analysis.)

LIGHTING TREATMENT CONCEPTS

Pole-mounted streetlights





Paseo lighting

Paseo Lighting

At a minimum, the paseos should be lighted to provide for safety and wayfinding to and from the off-street parking lots. As discussed earlier (see "Opportunities for Unique and Artistic Expression"), the lighting scheme for the paseos could also be unique and artistic.

Accent lighting

Accent Lighting

To provide an additional lighting element along the streetscape, the plan recommends incorporating lighting into the benches and seatwalls throughout the corridor. This accent lighting should be consistent and visible as a series of elements that "flows" along the sidewalk. These lighting elements should be durable, long-lasting LED fixtures; and they should be recessed into the seatwalls and benches to prevent tampering.

Seasonal lighting

Seasonal Lighting

Seasonal lighting should be accommodated with electrical outlets and planting of deciduous trees with an open branching structure (Ulmus parvifolia is recommended, see "Greening"). Seasonal lighting during the winter can encourage shopping and brighten the evenings during the short days.

Gateways lighting

Gateways Lighting

The gateways should be considered part of the overall lighting scheme, with lighted elements an integral part of their design. See "Wayfinding and Gateways" below.

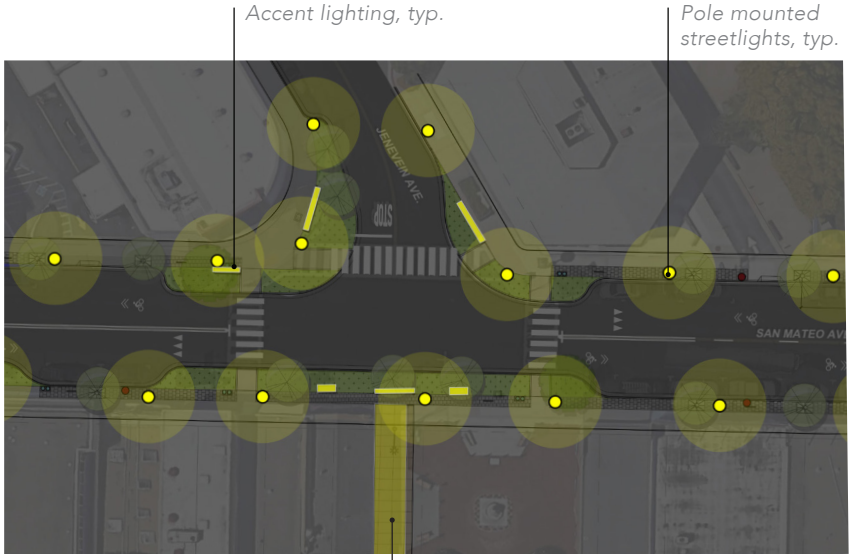
Note: all custom lighting elements should be designed and engineered to withstand wind-loads. Further study would be required to determine the suitability of cable-suspended lighting fixtures, for example.

EXISTING LIGHTING LAYOUT

PROPOSED LIGHTING LAYOUT

ENLARGEMENT PLANS

Existing lighting layout



Proposed lighting layout

G. SPECIAL PLACES

This plan recommends improvements to the following "special places": Posy Park, Centennial Park and the paseos (alleyways) that connect the sidewalk to surface parking lots behind the buildings. Of these, the paseo improvements should be considered a priority, as they are integral to the parking demand-management strategy by increasing the visibility and safety associated with using the off-street parking lots. Depending on funding and the broader citywide priorities for park improvements, Posy Park and Centennial Park improvements may be incorporated into the streetscape construction project, or they may be considered separate projects.

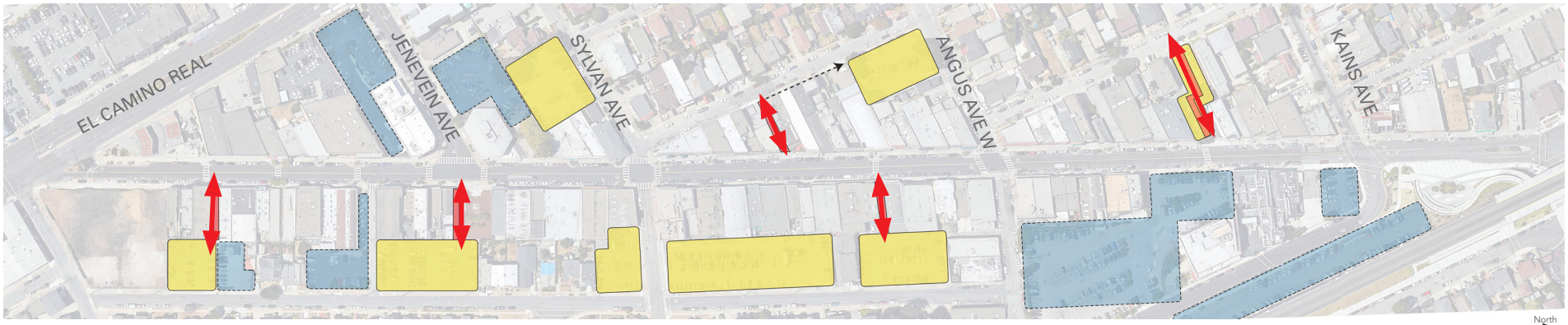
Paseos: Artistic Expression

In addition to their essential role in providing access to the off-street parking lots, the paseos are an opportunity for unique artistic expression along the corridor. During the community-engagement process, excitement emerged for the possibility that the paseos could be sites for artists' installations. Artists could be selected through a competition, potentially with a preference for local artists. Because the paseos can be a refuge from the wind, seating should be incorporated. The paseos are also opportunities for special paving, potentially designed as part of the art installations. So that they serve as connections to the off-street parking lots, lighting and signage are essential components of the paseo improvements.

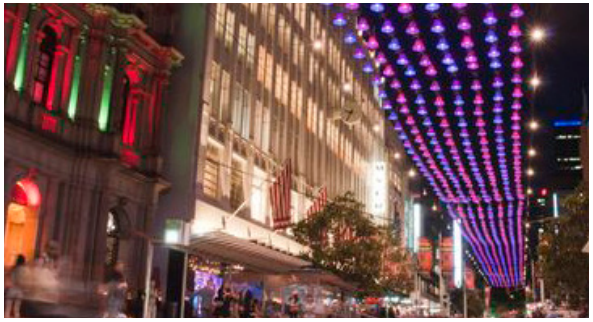
Note: all custom lighting elements should be designed and engineered to withstand wind-loads. Further study would be required to determine the suitability of cable-suspended lighting fixtures, for example.

PASEO ACTIVATION OPPORTUNITY

PASEO CONNECTIONS TO EXISTING OFF-SITE PARKING LOTS

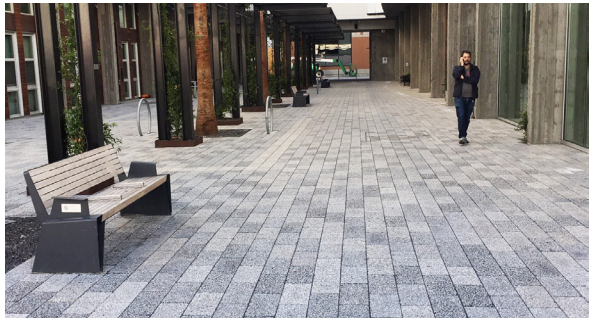


PASEO ACTIVATION CONCEPTS



Artistic Lighting

Shade Structure and Overhead Treatments



Murals and Distinctive Paving

Posy Park: A Green Gateway

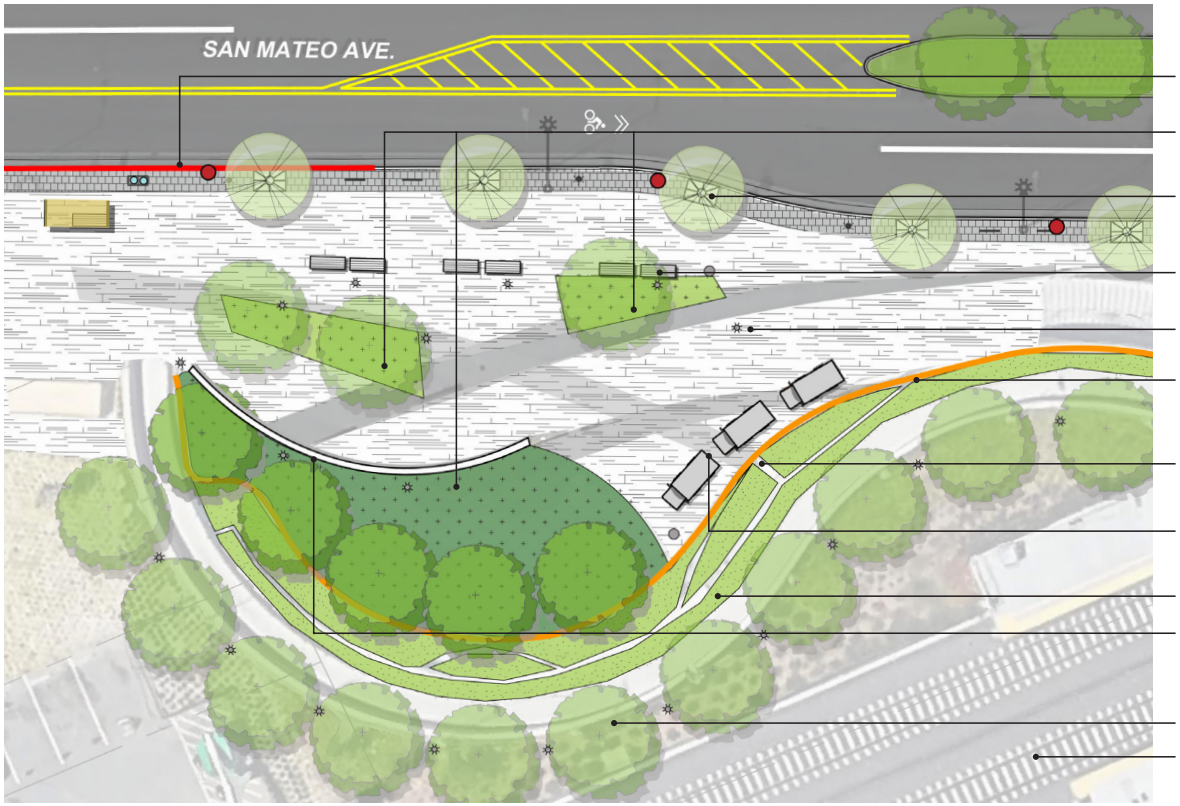
Posy Park is part of the gateway experience for visitors approaching the corridor from the north. Currently, the park does not serve either as a visual gateway or as a well-functioning open space. Constructed as part of the Caltrain station and grade separation, the park is dominated by large, gray retaining walls. There is little shade. The central water feature has been turned off because it never served its intended purpose. The seating area is hidden from view, doesn't feel safe. The recommendations of this plan are intended to create a visual gateway feature and a more usable space, primarily by increasing the planting area and adding large trees. The sense of safety would be increased by moving the usable seating area closer to the street. And the retaining walls that dominate the space would be re-painted with a beautiful color or pattern, and partially covered with plants. Amenities and programming would activate the space, as will increased foot-traffic as people walk from new residential developments to and from the Caltrain station.

The key recommendations for Posy Park are:

- Reduce the amount of paving to provide more planting area.
- Plant very large shade trees.
- Convert the fountain to planters.
- Paint the existing walls with a bright color or artistic pattern.
- Move the seating zone closer to the street.
- Provide an area for food trucks, carts or kiosks.
- Maintain sightlines by keeping groundcovers and shrubs low and tree canopies high and orient furnishings so that they don't block views.
- Movable tables and chairs should be studied as an option to activate the space.
- A lawn area should be studied as a potential amenity for gathering, picnicking, relaxing, etc.
- While a loading zone was not evaluated within the project scope, it may be considered in the future.

CONCEPT VIEW

CONCEPT PLAN



Potential drop-off zone (to be studied)
New planted areas
New street trees
Benches
Lightpoles
Painted fountain walls (mural option)
Existing mosaics to remain
Food truck space
Planting in fountain
Seatwall oriented towards street
New trees
Existing Caltrain tracks

N

PROGRAM CONCEPTS


Food Trucks / Vendors


Cafe Tables and Seating


Shaded Seating Areas


Lawn

Centennial Park: An Active Event Space

Centennial Park should be made accessible for public use. Currently, the majority of the park is off-limits to people, barricaded with ropes, due to sub-surface rubble from the demolition of a building that once stood on the site. Community input made it clear that this is widely seen as a missed opportunity to provide an active space that would support many uses. One notable outcome of the community-engagement process was the need for children-oriented spaces. A play area would serve the children and families that come to San Mateo Ave. to patronize the cluster of child-oriented businesses including the swim school and tot play center. Also, Centennial Park provides an opportunity to create a performance space that would support arts programming along San Mateo Ave . and attract people during festivals, a farmers market, or for regular small concerts at lunchtime or on weekends

Program elements that should be considered include:

- Large, flexible event space
- Performance area (a stage is not recommended, as it would reduce the flexibility of programming)

CENTENNIAL PLAZA ACTIVATION IDEAS

- Small seating areas
- Play area with climbing structure

The program diagrams on the previous page indicate the amounts of space recommended for each program zone, illustrate three possible layouts with different relationships between the zones and the street, and show different circulation patterns through the park between the street and the off-street parking.

CENTENNIAL PLAZA ACTIVATION IDEAS

Nightlife/food vendors

Performance stage

Event space

Pop-up markets

Pop-up amenities

Children's play

H. WAYFINDING AND GATEWAYS

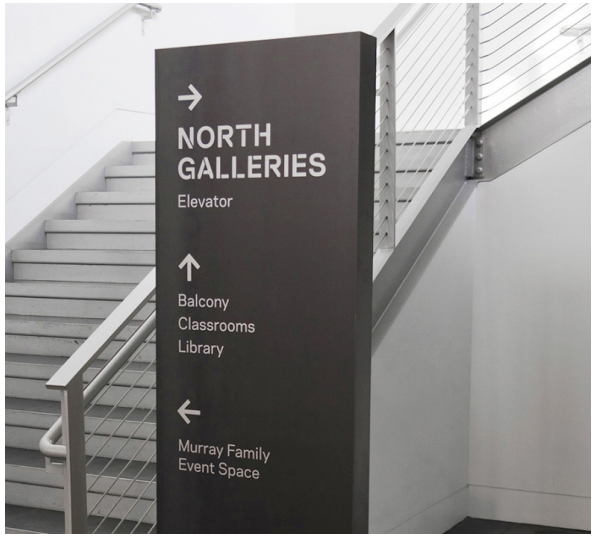
Design Intent

The design intent for the wayfinding signage is to prioritize simplicity and legibility. The color scheme is intentionally minimal: blue backgrounds with white and black lettering and symbols. The signs should be rectangular in shape. Graphic embellishments should be minimized, if not avoided altogether. The typeface should be a modern, sans-serif style. The precedent images to the right show a range of styles from the least embellished, Modernist design aesthetic, to a more graphically complex design. (See "Signage Design Considerations" below for further discussion.)

Branding

A branding exercise will be a necessary stage of the wayfinding and gateways design process. In the past, San Mateo Avenue was branded "The Avenue" on gateway signage and smaller street signs. These gateway signs are no longer in place, however there are still "The Avenue" street signs in place along the corridor. During the community-engagement process, this branding was questioned, as several participants in the process felt that most people think of Burlingame when they hear the words "The Avenue." An alternative brand could be simply "Downtown San Bruno." Other ideas that were discussed include "The Heart of San Bruno."

WAYFINDING PRECEDENTS



Top Left: Tacoma Art Museum, Washington
Top Right: Aotea Square, Auckland New Zealand
Bottom Left: Des Moines, Iowa

SIGNAGE AND GATEWAY LOCATIONS

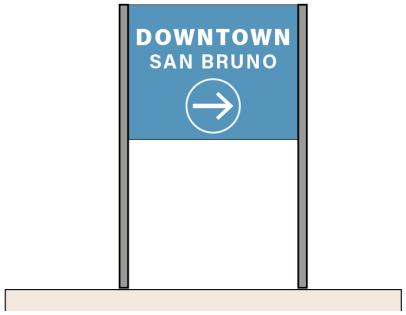
Vehicular Corridor Directional Signage

Vehicular corridor directional signs are intended to direct drivers entering downtown San Bruno from surrounding freeway exits and arterial streets to the San Mateo Avenue commercial corridor. These signs should be located off San Mateo Avenue at key locations. These signs should be positioned and oriented to be read from a vehicle, such as in the medians on San Bruno Avenue.

Parking Wayfinding Signage

To direct vehicular traffic to the off-street parking lots, these signs should be located along the San Mateo Avenue project area at key intersections as indicated. Additionally, "parking" signs should be located at the paseos to highlight these pedestrian paths from the sidewalks to the parking lots.

VEHICULAR WAYFINDING



MEDIAN WAYFINDING

PARKING WAYFINDING

LIGHTPOLE MOUNTED WAYFINDING

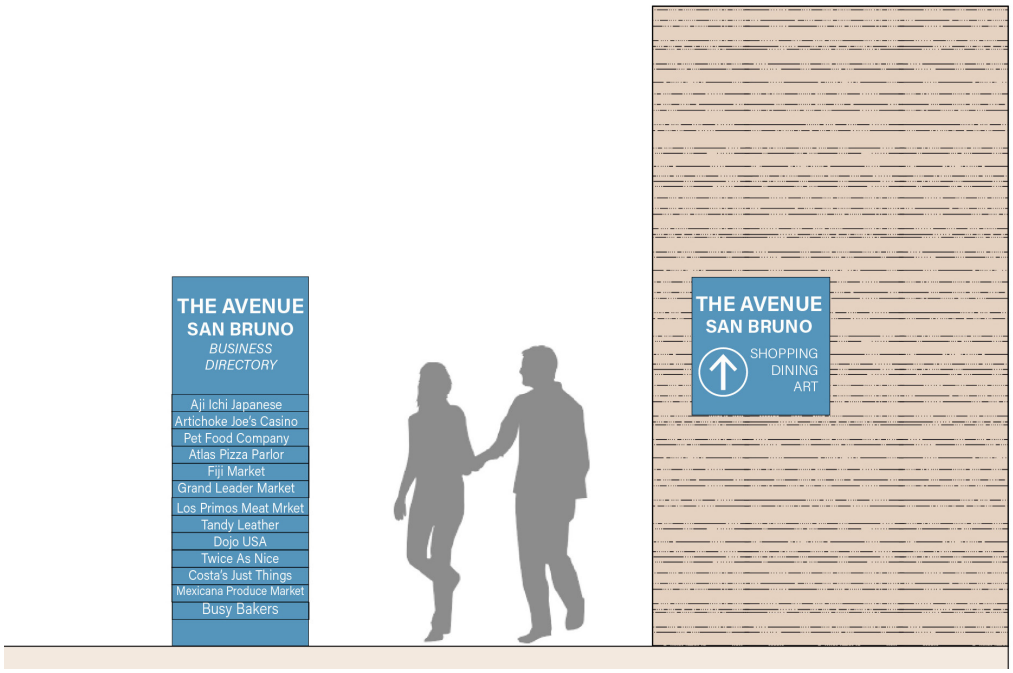
Business Directories

Business directories would indicate which businesses can be found on each block of the corridor. Business directories would be especially valuable at the paseos, as people walking from the parking lots behind the buildings might become disoriented with respect to their destinations. A funding and maintenance/management strategy would need to be developed for these signs. The funding for business directories of this type is typically provided by the businesses that advertise on these signs or by a business improvement district. It would need to be determined what entity (public or private) has responsibility for maintaining these signs, how many spaces for business names would be appropriate for each block, and how to adjust the quantity of businesses that are represented on each sign if there is more or less demand.

Pedestrian Wayfinding Signage

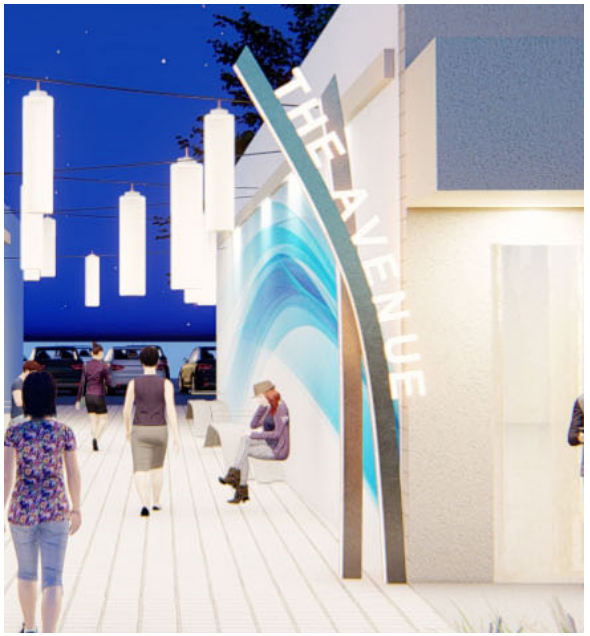
To direct people who have parked their cars in the off-street parking lots to the paseos and on to San Mateo Avenue, pedestrian wayfinding signage should be installed at the parking-lot ends of the paseos. At a minimum, these signs should be similar to the rest of the directional signage described in this section, however they may be replaced by paseo gateway monuments. (See "Paseo Gateway Monuments" below.)

PEDESTRIAN WAYFINDING



Gateway Monuments

As markers of the north and south entrances of the San Mateo Avenue commercial district, one major gateway monument is proposed for each end of the project area. The recommended locations for these monuments are shown on the overall illustrative plan. Several conceptual design alternatives are included in this plan. The final design will depend on budget, engineering, and fabrication and constructability constraints. Lighting should be integrated into the gateway elements, so that they become a key element of the nighttime environment.



Paseo Gateway Monuments

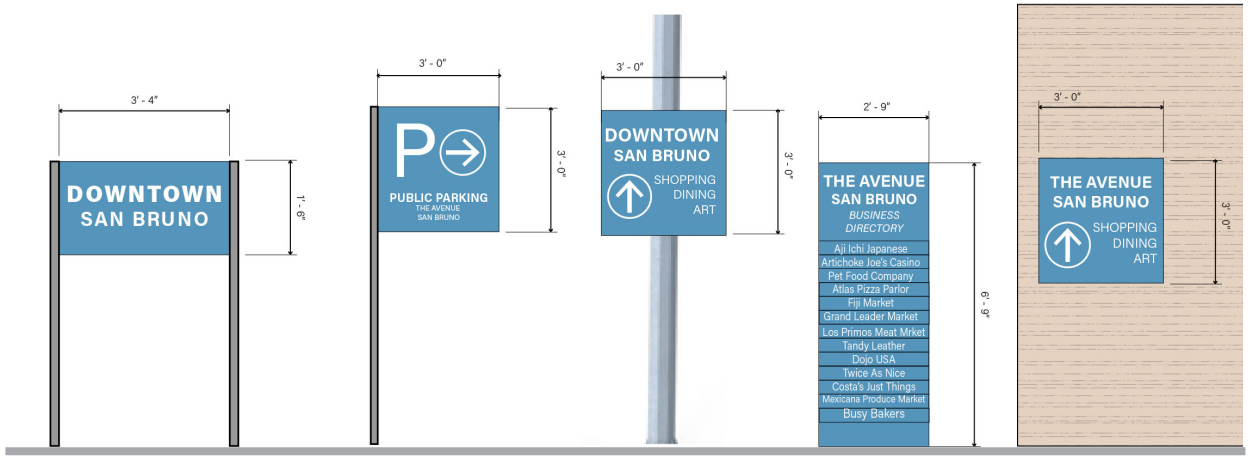
To enhance the wayfinding to the off-street parking lots and the unique place-making character of the paseos, smaller gateway elements are proposed for the entrances to the paseos from the sidewalk. These should be consistent in form and materials with the larger gateway monuments at each end of the corridor, and they should incorporate similar lighting elements. Additonal paseo gateway monuments could be placed at the parking-lot ends of the paseos to provide an iconic directional beacon for people who have parked their cars in the parking lots.

Signage Design Considerations

This plan provides specific guidance for the types and locations of wayfinding signs and gateways and general guidance for the aesthetics of the signs and gateways. Further development of the sign designs should be completed with a signage-design consultant. The signage design should consider the full extent of the signage program for downtown San Mateo even if the initial implementation is limited to the San Mateo Avenue project area. Some of the considerations for further signage design development are:

- Legibility and conformance with accessibility requirments: Typeface selection and font size should be determined based on industry standards and requirements.
- Sign sizes and positions: Sizes and positions should be determined based on visibility for drivers and pedestrians as required.
- Aesthetics and design motif: Within the guideline of simple, modernist design, the level of graphic embellishment requires further study. Graphic motifs may reflect the final design for other unique aspects of the streetscape design that will be determined through the design-development process, such as the gateway elements, custom furnishings or art installations.
- Materials: The refinement and craft of the materials and construction techniques will be critical to the successful implementation of a simple, modern and elegant signage program.

SIGNAGE DIMENSIONS



POTENTIAL VARIATIONS

GATEWAY CONCEPT 1

GATEWAY CONCEPT 2

GATEWAY CONCEPT 3

I. ACTIVATION

In addition to the physical design improvements described in this Plan, the community engagement process highlighted the desire to activate the corridor with programming. Ideas that were encouraged during the community and stakeholder workshops included:

Farmers' Market

It was noted that a previous farmers' market was unsuccessful, but there is still interest in creating a better-managed farmers' market. It was noted that the farmers' market could be held in parking lots and plazas without closing the street.

Music Concerts

Music concerts could be programmed in Centennial Park for special events, regular occasions such as weekends, or lunchtimes during the week.

Games

Chess boards could be provided on public tables. A Bocce ball court could be located in Centennial Park or Posy Park. Other games that have become popular in open spaces are corn hole and large connect-four.

Art Events and Competitions

Art fairs could be supported in the plazas. Art competitions could be held to choose temporary art to decorate plazas, the paseos, or participating store fronts, similar to the San Jose Doors program, which selects student art to decorate utility doors.

Street Fairs

Regular street fairs could include a "Sunday Streets" event, which closes off the street to motor vehicles and encourages strolling and bicycling, or "First Fridays," modeled on Oakland's monthly street fair on Telegraph Avenue.

Seasonal Events

Seasonal events could include Halloween trick-or-treating, an Independence Day parade, or a back-to-school shopping promotion event. A scavenger hunt could encourage children and families to explore the street.

Special Dining Events

Dining events could be geared toward parents or senior citizens. Modeled on Oakland's Temescal Business Improvement District's annual Taste of Temescal, San Mateo Avenue's restaurants could organize a "culinary crawl," offering small portions of their food to ticket holders from sidewalk tables.

J. PRIORITIZATION AND COST ESTIMATE

At the time of this writing, a budget has not been identified for the streetscape project. The following ranking and rough-order-of-magnitude (ROM) cost estimates of the proposed improvements are provided to guide budgeting decisions in case funding for all of the recommendations is not available. These costs are for the initial project design and construction; they do not include ongoing maintenance and operations costs. The ranking is based on input during the community-engagement process.

Tier 1

The items listed under Tier 1 should be considered the bare minimum, lowest cost project that would provide the highest value.

Tier 2

The items listed under Tier 2 are the second-highest priority. These items support key goals of the project. Combined, Tiers 1 and 2 represent the "baseline" streetscape project, with each element providing a functional as well as aesthetic value.

Tiers 3 & 4

The items listed under Tiers 3 and 4 are either outside of the strict limits of the streetscape project (Centennial Park, Posy Park), are purely aesthetic in nature (artistic elements), or provide additional environmental benefit (additional stormwater management features).

The costs listed are cumulative. For example the cost to implement tiers 1, 2 & 3 would be the total of the costs listed for each tier. For items that represent add-on features, the cost listed for the add-on feature is the premium, or additional cost, for the additional feature. These are noted "premium." For example, the cost for the custom benches listed under Tier 4 would be the total of the "basic product" bench listed under Tier 1 plus the additional cost for the "custom bench" under Tier 4. This means that subtraction of redundant items is not necessary to use the table.

PRIORITY RANKING OF PROPOSED IMPROVEMENTS

Tier	Recommended Improvement		ROM Cost
1	Sidewalk replacement, ramps	$	1,676,000
	Bus-stop improvements	$	77,000
	Street trees (with tree grates)	$	240,000
	Street lights (pole-mounted, 60' spacing)	$	396,000
	Trash and recycling receptacles	$	114,000
	Benches	$	36,000
	Seatwalls	$	76,000
	Bike racks	$	31,000
	Wayfinding signage	$	90,000
	Planting and Irrigation	$	45,000
	Water Line Relocation	$	225,000
	Demolition and earthwork	$	629,000
	General conditions (mobilization, etc.)	$	394,000
	Subtotal	$	4,633,000
	Contingency (35%)	$	1,622,000
	Design (15% of total)	$	816,000
	Total Project Cost	**$**	**6,254,000**
2	Permeable paving along sidewalks, additional cost (move to Tier 1 if required)	$	338,000
	Curb realignment and planting at Jenevien Ave.	$	65,000
	Suspended pavement for street trees	$	204,000
	Gateway monuments	$	750,000
	Paseo gateway monuments	$	100,000
	Roadway striping	$	15,000
	Planting and irrigation at existing bulbouts	$	111,000
	Paseo improvements/art installation	$	400,000
	Subtotal	$	1,983,000
	Contingency (35%)	$	694,000
	Design (15% of total)	$	402,000
	Total Tier 2	**$**	**3,079,000**
	Total Project Cost (Tier 1 + Tier 2)	**$**	**9,333,000**
3	Centennial Park improvements	$	524,000
	Artistic expression: Lighting at benches and seatwalls	$	41,000
	Additional stormwater management: suspended pavement and bioretention	$	1,383,000
	Soft Costs (design @ 15%)	$	292,000
	Subtotal	$	2,240,000
	Contingency (35%)	$	784,000
	Design (15% of total)	$	454,000
	Total Tier 3	**$**	**3,478,000**
	Total Project Cost (Tier 1 + Tier 2 + Tier 3)	**$**	**12,811,000**
4	Posey Park improvements	$	1,489,000
	Artistic expression: Crosswalks	$	371,000
	Artistic expression: Paving	$	969,000
	Artistic expression: Seatwalls	$	45,000
	Artistic expression: Benches	$	42,000
	Additional stormwater management: permeable vehicular pavement	$	1,136,000
	Subtotal	$	4,052,000
	Contingency (35%)	$	1,418,000
	Design (15% of total)	$	821,000
	Total	**$**	**6,291,000**
	Total Project Cost (Tier 1 + Tier 2 + Tier 3 + Tier 4)	**$**	**19,102,000**

APPENDIX

A. UTILITY ASSESSMENT

B. PHOTOMETRIC ASSESSMENT

C. ACCESSIBILITY ASSESSMENT

D. HYDROLOGY ASSESSMENT

E. COST ESTIMATE

F. TRANSPORTATION ASSESSMENT AND RECOMMENDATIONS

G. ANGLED PARKING EVALUATION

H. NOTES FROM COMMUNITY-ENGAGEMENT AND STAKEHOLDER MEETINGS

APPENDIX A: UTILITY ASSESSMENT

By: CSW/Stuber- Stroeh Engineering Group, Inc

A. UTILITY ASSESSMENT

CSW | ST2

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Novato, CA 94949
www.cswst2.com

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Fax: 415.883.9835

Novato
Petaluma
Sacramento
Redwood City

CSW/Stuber-Stroeh Engineering Group, Inc. Engineers | Land Planners | Surveyors

MEMORANDUM

DATE: July 30, 2019 **FILE:** 2019-20-013

TO: City of San Bruno, Community Development Department

FROM: Julia Harberson, CSW|ST2

RE: **UTILITY ASSESSMENT FOR SAN MATEOAVENUE, SAN BRUNO**

This memorandum addresses the assessment of the existing utility infrastructure within San Mateo Avenue, San Bruno. Below is a summary of the condition and capacity of the existing utilities (Water, Sanitary Sewer, Stormwater & PG&E). The area of interest for the San Mateo Avenue corridor is between El Camino Real and Huntington Avenue. Identified, as well, are suggested near term infrastructure improvements and rehabilitation that must be addressed to support future development along the corridor.

SANITARY SEWER

EXISTING CONDITIONS:

The following information on the existing sanitary sewer system within San Mateo Avenue between El Camino Real and Huntington Avenue was obtained from the *City of San Bruno Sewer Master Plan – February 2014 (SSMP)*. Inspections of the existing sanitary sewer system was performed, with closed-circuit television (CCTV), and determined the structural grade of sanitary sewer pipes and condition assessments. Inspections of the existing sanitary sewer

was performed, with closed-circuit television (CCTV), and determined the structural grade of sanitary sewer pipes and condition assessments. Inspections of the existing sanitary sewer system with CCTV provided data used to develop a statistical probability of pipe "failure" based on sewer age, and using a Weibull distribution, a probability density function was developed to determine the mean pipe lifetime of 90 years. The existing sanitary sewer system was constructed in the 1930's. The existing sanitary sewer system is nearing the end of it's 90-year lifecycle. Modeling of the sewer trunk mains identified the vicinity of the intersection of Kains and San Mateo Avenues as deficient, where overflow and surcharge may occur. The condition and capacity of the sanitary sewer line within San Mateo Avenue between El Camino Real and Angus Avenue and South of Kains Avenue to Kains Avenue were upgraded as a part of **Capacity Improvement Projects (CIPs) C-5A – Kains Avenue Bypass, C5B Kains Avenue Improvements** and **C-7[a] – San Mateo Avenue Bypass** identified in the SSMP. These projects are detailed further below in Table 2.

Included in Table 1, below, are excerpts and references from the *City of San Bruno Sewer Master Plan – February 2014* that have been utilized for this assessment to identify deficiencies in the sanitary sewer system. The current infrastructure within San Mateo Avenue consists of a 24-inch main located within the street between El Camino Real and Kains Avenue. The CIPs above abandoned a 6-inch sewer main in the sidewalk on the westside of San Mateo Avenue between El Camino Real and Angus Avenue.

Table 1: Utilized Existing Conditions Excerpts from the *City of San Bruno Sewer Master Plan – February 2014*

Reference Figure/ Table ID	Reference Figure/ Table Name	Description	Description (In Vicinity of San Mateo Avenue)	Pertinence
Figure 1-2	Existing Sewer System	The sizes of the pipes in the existing sanitary sewer system are illustrated in this figure.	The existing sanitary sewer pipe within San Mateo Avenue is less than 8-inches.	These pipes may have capacity issues.
Figure 1-3	Sewer Installation Dates	This figure shows the decade in which the sanitary sewer pipes were installed.	The sanitary sewer pipes within San Mateo Avenue were installed in the 1930's.	The lifetime of these pipes were found to be about 90-years. The pipes in San Mateo Avenue are approaching the end of their lifespan.
Figure 3-2	Predicted Areas of Sewer Surcharge under Design Storm Peak Wet Weather Flow	Sanitary sewer pipes and manholes where predicted surcharge or overflow are shown. Navy blue shows the modeled sewer. Orange indicates where backwater surcharge occurs. Red indicates where throttle surcharge occurs. The teal circles indicates manholes where overflow occurs.	 Surcharging is predicted within the sanitary sewer pipes within Kains Avenue and Huntington Avenue in the vicinity of San Mateo Avenue. Sanitary sewer overflow is predicted at the manholes in the vicinity of the intersection of San Mateo and Kains Avenue.	The vicinity of the intersection of Kains Avenue and San Mateo Avenue is an area susceptible to overflow and surcharging.
Figure 4-2	Highest Structural Grade of Inspected Sewers	The figure shows the structural grade of the inspected sanitary sewers where five (5) is the most severe. Five (5) is red, four (4) is purple, three (3) is orange, two (2) is pink, one (1) is green, and zero (0) is blue.	 The structural grade of the inspected sanitary sewers within San Mateo Avenue were found to be five (5), four (4) and three (3)	This indicates that based based on structural grade, replacement or rehabilitation may be necessary for the sanitary sewers within San Mateo Avenue
Figure 4-3	Sewer Renewal Decision Analysis Results	The figure show where it is suggested that the pipe be replaced (red), lined (orange), localized repair (purple), replaced or lined for roots (brown) or maintained (green). Black is used to show where the pipe inspection is incomplete and need to be re-inspected.	 Along San Mateo Avenue, the figure above shows red, purple, brown and green.	This indicates that based on the condition assessment it is advised that sections of the sanitary sewer pipe along San Mateo Avenue be replaced, repaired or lined.
Figure 3-3	Overview of Capacity Improvement Projects	The figure shows the locations and IDs of the capacity improvement projects.	 The highlighted segments in the excerpt above show where the capacity improvement projects are located and what the project ID.	These projects have been completed. See Table 2 below for project details.

IDENTIFIED INFRASTRUCTURE IMPROVEMENTS:

The condition and capacity of the Sanitary Sewer Lines on San Mateo Avenue between El Camino Real and Huntington Avenue are addressed in the *City of San Bruno Sanitary Sewer Master Plan – February 2014*. The deficiencies in the condition and capacity of the Sanitary Sewer line within San Mateo Avenue between El Camino Real and Huntington Avenue have been resolved by the CIPs identified in Table 2 above.

The San Mateo Water and Sewer Replacement project abandoned the existing 6-inch sanitary sewer line in the sidewalk on the west side of San Mateo Avenue between El Camino Real and Angus Avenue. Portions of the abandon sanitary sewer will require removal, in the event green and sustainable infrastructure streetscape improvements are implemented along the San Mateo Avenue corridor. The existing abandoned sanitary sewer is identified in Figure 1 below.

Figure 1: Existing Abandond Sanitary Sewer Location

Table 2: Completed Capacity Improvement Projects from the *City of San Bruno Sanitary Sewer Master Plan – February 2014*

CIP ID	Project Name	Location	Description	Deficiency Addressed/ Comments	Resolution
C-5A	**Kains Avenue Bypass**	Kains Avenue from San Mateo Avenue to Huntington Avenue	Install a new 200-foot section of 15-inch PVC bypass pipe to divert flow to the new 18-inch sewer on Huntington Avenue	Addresses capacity deficiencies in existing sewers through Artichoke Joe's parking lot and along Huntington Avenue to Cupid Row that have resulted in Sanitary Sewer Overflows (SSOs).	**This project has been constructed in conjunction with the Caltrain Huntington Avenue Improvement Project.**
C-5B	**Kains Avenue Improvement**	Kains Avenue from Hensley Avenue to San Mateo Avenue; San Mateo Avenue south of Kains Avenue	Replace approximately 1,000 feet of 10-inch pipe with 12-inch pipe in Kains Ave; replace existing sewers in San Mateo Ave south of Kains Avenue with 10-inch pipe flowing north and connecting to the new 15-inch bypass sewer (Project C-5A)	Addresses capacity deficiency in existing sewer in Kains Avenue east of Masson Avenue and allows abandonment of portion of sewer through Artichoke Joe's parking lot (the remaining portion of sewer will become a lateral servicing Artichoke Joe's)	**This project has been constructed.**
C-7[a]	**San Mateo Avenue Bypass**	San Mateo Avenue from Taylor Avenue to Angus Avenue	Install approximately 2,000 feet of new 18-inch pipe; install a weir to divert most flow at Taylor Avenue into the new 18-inch sewer; abandon the existing 6-inch pipe along west side of San Mateo Avenue and reconnect laterals to new sewer; install new pipes to connect flow from sewers in Jenevein Avenue and Angus Avenue to new 18-inch sewer.	Addresses capacity deficiencies in sewers in the Cupid ROW area that have resulted in SSOs, and allows abandonment of existing shallow 6-inch pipes in San Mateo Avenue sidewalk. Will also allow future abandonment of existing 6-inch easement sewers between San Mateo Avenue and Mastick Avenue	**This project has been constructed as a part of the San Mateo Avenue Water & Sewer Replacement Project – Project No. 84151 & 84341. A 24-inch Sanitary Sewer was installed.**

WATER SYSTEM

EXISTING CONDITIONS:

The following information on the existing water system was obtained from the *City of San Bruno Water System Master Plan – November 2012 (WSMP)*. The area of concern in this utility assessment, within San Mateo Avenue between El Camino Real and Huntington Avenue, is located in pressure zone 1/4. The water supply sources for pressure zone 1/4 are San Francisco Public Utilities Commission (SFPUC) (Tanforan (C1) and Whitman (C5) Turnouts), Pump Station 6 (Well 17), and Wells 16, 18, and 20. Storage **Tank T1 – Cunningham Drive**, with a total capacity of 2.5 million gallons, is the only storage tank serving pressure zone 1/4. Generally, the water system pipelines within the City's service area are made of cast iron (CI), asbestos concrete (AC), polyvinyl chloride (PVC) or galvanized steel (2-inch pipelines). The City has standardized on ductile iron cement lined (DICL) pipe. Based on recommendations from the City's 2001 Water System Master Plan, the City's Supervisory Control and Data Acquisition (SCADA) was installed in 2001. No significant issues have been identified from the City's SCADA system.

San Mateo Avenue between El Camino Real and Huntington Avenue is a part of the transit corridor where future development is planned. The predicted water demand (FY 2029/30) is 0.42 million gallons per day (292 gallons per minute) for the Transit Corridor is larger than the likely future demand along San Mateo Avenue between El Camino Real and Huntington Avenue. Pumping capacity evaluation, storage capacity evaluation, and pressure regulating station capacity evaluation analysis were performed for the *WSMP*. The pumping capacity evaluation found the existing total and firm guaranteed) pumping capacity to be less than the required firm pumping capacity. The storage capacity evaluation determined the storage for pressure zone 1/4 is sufficient having a storage surplus of 0.06 million gallons (MG). Pressure zone 1/4 is not depended on pressure regulating stations for supply; as such, the pressure regulating station capacity evaluation is not pertinent to this assessment.

In the *WSMP*, hydraulic analysis was used to identify pipeline improvements. Using general pipeline age, material information and leak history data, a focused pipeline rehabilitation and replacement program was developed. In general, the leak history demonstrates that the number of leaks generally increases as the pipe diameter decreases, and the number of leaks increases as pipe age increases.

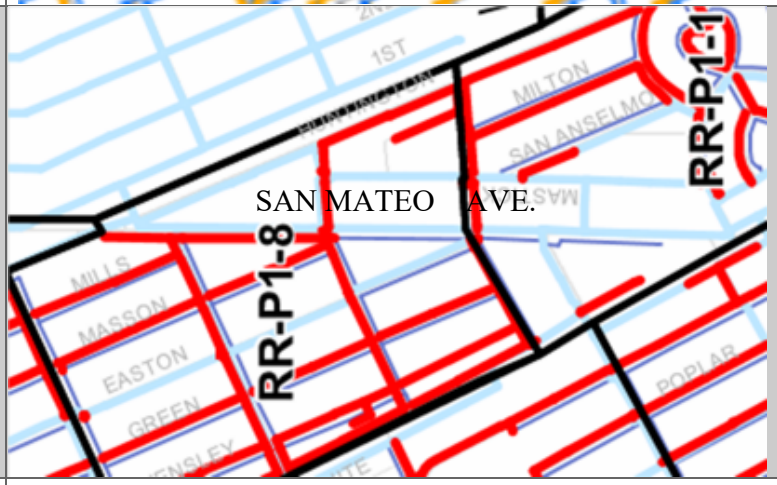
As shown in Figure 7-11: Recommended Existing System Rehabilitation and Replacement Improvements, *WSMP,* San Mateo Avenue between El Camino Real and Angus Avenue was identified as a pipeline rehabilitation and replacement project, **RR-3**, was completed as a part of the *San Mateo Avenue Water & Sewer Replacement Project – Project No. 84151 & 84341.* An 8-inch water line was installed within the street as a part of the project. The replacement project abandond multiple waterlines within the sidewalks on both sides of San Mateo Avenue.

Table 4, below, identifies excerpts and references from the *City of San Bruno Water System Master Plan – November 2012* that have been utilized for this assessment, to determine the existing condition and capacity of the water system.

Table 4: Utilized Existing Conditions Excerpts from the *City of San Bruno Water System Master Plan – November 2012*

<table>
<tr><th>Reference Figure/ Table ID</th><th>Reference Figure/Table Name</th><th>Description</th><th>Description
(In Vicinity of San Mateo Avenue)</th></tr>
<tr><td>Figure 2-2</td><td>Pressure Zones</td><td>Illustrates the different pressure zones in San Bruno</td><td>San Mateo Avenue between El Camino Real and Huntington Avenue are in pressure zone 1/4.</td></tr>
<tr><td>Table 2-1</td><td>Summary of Existing Pressure Zones</td><td colspan="2"><table><tr><th>Pressure Zone</th><th>Range of Service Elevations, feet msl</th><th>HGL of Tank, Regulating Station or Turnout, feet msl</th><th>Static Service Pressures, psi</th><th>Water Supply Source(s)</th></tr><tr><td>Zone 1/4</td><td>5-164</td><td>247</td><td>36-105</td><td>SFPUC (Tanforan (C1) and Whitman (C5)) Turnouts[b]
Pump Station 6 (Well 17)
Wells 16,18, and 20</td></tr></table></td></tr>
<tr><td>Table 2-6</td><td>Storage Tank Facilities</td><td colspan="2"><table><tr><th rowspan="2">Storage Tank ID</th><th rowspan="2">Pressure Zone</th><th rowspan="2">Ground Surface Elevation, feet msl</th><th rowspan="2">Diameter, feet</th><th rowspan="2">Height, feet[b]</th><th colspan="3">Capacity, MG[c]</th></tr><tr><th>Total</th><th>Operational Minimum</th><th>Operational Maximum</th></tr><tr><td>T1 - Cunningham Drive</td><td>1/4</td><td>231</td><td>116</td><td>32</td><td>2.5</td><td>0.94</td><td>1.95</td></tr></table></td></tr>
<tr><td>Table 3-10</td><td>Water Demand at Buildout of General Plan and Transit Corriders Plan (FY 2029/30)</td><td>Table of predicted water use for future development.</td><td>Based on water use estimated using decision support system (DSS) model as a part of Transit Corridors Plan water supply agreement (WSA) analysis, the predicted total water use for the Transit Corridors Plan is 0.42 million gallons per day (mgd) and 292 gallons per minute (gpm)</td></tr>
<tr><td>Figure 7-8</td><td>Leak Statistics</td><td>This figure shows two graphs. One is Leaks Per 1,000 ft by Diameter. The other is Leeks per 1,000 ft by Age.</td><td>The number of Leaks increases as the pipe diameter decreases. The number of leaks increases as the pipe age increases.</td></tr>
</table>

Figure 7-2	Recommended Existing System Fire Flow Criteria	This figure illustrates the existing fire flow criteria where navy blue represents 1,500 gallons per minute (gpm), green is 2,000 gpm, orange is 2,500 gpm, and pink is 3,000 gpm.		The recommended fire flow criteria in the vicinity of San Mateo Avenue is 3,000 gpm.
Figure 7-4	Comparison of Available Fire Flow and Fire Flow Criteria – Existing System	The following excerpt shows the criteria shown in this figure. LEGEND AvailableFlow < 1/3 of Fire Flow Criteria AvailableFlow > 1/3 of Fire Flow Criteria and < Fire Flow Criteria Available Flow > Fire Flow Criteria Pressure Zone Boundary Pipeline Street		Along San Mateo Avenue, there is sufficient available flow greater than fire flow criteria. However, in the vicinity of Angus and San Mateo Avenues, the available flow is insufficient.

Figure 7-5	Recommended Water System Improvements Existing System	This figure illustrates where suggested improvements such as upsizing pipelines, new pipelines, new wells, new booster pump stations, new pressure regulating stations, and new storage tanks occur. • Orange – Proposed 8-inch Upsize		Along San Mateo Avenue between Angus Avenue and Kains Avenue, it is recommended that an 8-inch pipe line upsize occur. There is a new well proposed in the vicinity of Taylor Avenue and Mastick Avenue.
Figure 7-11	Recommended Existing System Rehabilitation and Replacement Improvements	Red represents RR-P1 projects. Light blue represents RR-P3 projects.		A portion of project RR-3 is located along San Mateo Avenue between El Camino Real and Angus Avenue. This project is detailed further below.
Table 7-8	Recommended Rehabilitation and Replacement Improvement Projects	Capital Improvement Project ID RR-P3. This project involves the replacement of water pipes and upsizing 6-inch pipes to 8-inch pipes.	A portion of this project along San Mateo Avenue between El Camino Real and Angus Avenue was completed as a part of the *San Mateo Avenue Water & Sewer Replacement Project – Project No. 84151 & 84341*. A new 8-inch water line was installed.	

Identified Infrastructure Improvements:

To address the storage capacity, supply capacity and pipeline condition, the *City of San Bruno Water System Master Plan – November 2012 (WSMP)* identified the following capital improvement projects (CIP) which pertain to the area of concern for this assessment: **EXCIP-P1-7**, **RR-P1-8** and **FUTCIP-P-2**. These CIPs are located and detailed further in Table 5 and Figure 2 below. These projects are required to resolve storage capacity, supply capacity and pipeline condition issues within the corridor. Portions of the abandon water mains will require removal, in the event green and sustainable infrastructure streetscape improvements are implemented along the San Mateo Avenue corridor. An existing 8-inch water main between Sylvan Avenue and Angus Avenue will require relocation in the event green and sustainable infrastructure streetscape improvements are implemented along the San Mateo Avenue corridor.

Figure 2: Water Capital Improvement Project Locations

Table 6: Capital Improvement Project to Remain

Capital Improvement Project ID	Improvement Type	Reason for Improvement	Improvement Description	Reference Table
EXCIP-P1-7/RR-P1-8	Upsized pipeline in some areas and new pipeline in others.	Fire Flow/ Rehabilitation and Replacement	Upsize pipeline to 8-inch in San Mateo Avenue from Kains to Angus Avenues.	Table 9-2: Recommended Reliability Capital Improvement Projects Table 9-3: Recommended Rehabilitation and Replacement Capital Improvement Projects
FUTCIP-P-2	New Pipeline	Provide looping in Transit Corridors Area	New 12-inch pipeline within San Mateo Avenue between El Camino Real and Huntingtin Avenue	Table 9-1: Recommended Capacity Capital Improvement Projects and Chapter 8: Evaluation of Future Water System, Section 8.5.4: Pipelines
RR-P3	Upsize Pipeline	Rehabilitation and Replacement	Replacement of water pipes and upsizing 6-inch pipes to 8-inch pipes.	Table 9-3: Recommended Rehabilitation and Replacement Capital Improvement Projects

STORM DRAIN SYSTEM

EXISTING CONDITIONS:

The following information on the existing storm drain system was obtained from the *City of San Bruno Storm Drain Master Plan – June 2014 (SDMP)*. The area of concern in this utility assessment, within San Mateo Avenue between El Camino Real and Huntington Avenue, is located in watersheds A, B, and C, as defined in the SDMP. The storm drain system for watershed A (1415.8 acres) consists of underground pipes, boxes and channels. The storm drain system for watershed B (504.6 acres) consists of underground pipes, boxes, channels, and a detention basin. The storm drain system for watershed C (648.5 acres) consists of underground pipes and boxes. Belle Air Boxes, located between Pine Street and San Bruno Avenue, collects runoff from both watershed A and C from Huntington Avenue before discharging to San Bruno Channel. Watershed B discharges to Cupid Row Canal, Crystal Spring Channel. Hydrologic analysis performed determined the peak 25-year storm flow in cubic feet per second (cfs) to be 1154.3 cfs for watershed A and 572.3 cfs for watershed C. Hydraulic analysis was used to estimate the existing storm water collection system hydraulic capacity, identify potential deficiencies, and assess hydraulic performance of proposed improvement options.

Hydraulic analysis, in the SDMP, determined the following areas, within the vicinity of San Mateo Avenue between El Camino Real and Huntington Avenues, where potential capacity deficiencies may occur: the intersection of Huntington Avenue and San Mateo Avenue, the intersection of Angus Avenue and San Mateo Avenue, and in the vicinity of 1st Avenue and Pine Street, Belle Air Boxes. The capacity of the storm drain system at the intersection of Huntington and San Mateo Avenues is 528.1 cfs while the maximum flow is 843.8 cfs. The maximum flow at the Belle Air Boxes was determined to be 1231.9 cfs while the capacity is 387.3 cfs. The capacity of the primary existing pipe channel within San Mateo Avenue between Sylvan and Angus Avenues was determined to be sufficient.

The existing storm drain infrastructure in San Mateo Avenue consists of a series of catch basins which drain to a 44-inch steel pipe under the sidewalk on the east side of the corridor.

Below in Table 6 are excerpts and references from the City of San Bruno Storm Drain Master Plan – June 2014 that have been utilized for this assessment to identify deficiencies in the storm drain system.

Table 6: Utilized Existing Conditions Excerpts from the *City of San Bruno Storm Drain Master Plan – June 2014*

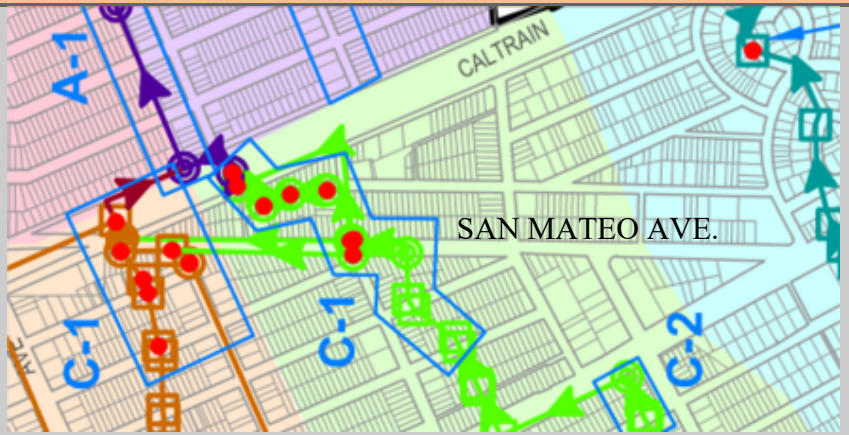
<table>
<tr><th>Reference Figure/ Table ID</th><th>Reference Figure/Table Name</th><th>Description</th><th>Description (In Vicinity of San Mateo Avenue)</th><th>Pertinence</th></tr>
<tr><td>Figure ES-1</td><td>Identified Problem Areas by Watershed</td><td>This figure shows the watersheds and associated pipe structures by color and identifies the problem areas using red dots.
Orange is watershed A, blue is watershed B, and green is watershed C.</td><td> 
</td><td>San Mateo Avenue between El Camino Real and Huntington Avenue is in Watershed A, B, and C. Identified problem areas occur near the intersection of San Mateo Avenue and Angus Avenue, and the intersection of San Mateo Avenue and Kains Avenue. This area is Identified C-1.</td></tr>
<tr><td>Table 2.1</td><td>Watershed Summary</td><td colspan="2"><table><tr><th>Watershed</th><th>Area (acres)</th></tr><tr><td>Watershed A</td><td>1415.8</td></tr><tr><td>Watershed B</td><td>504.6</td></tr><tr><td>Watershed C</td><td>648.5</td></tr></table></td><td></td></tr>
<tr><td>Table 2.2</td><td>Existing Storm Drain System Summary</td><td colspan="2"><table><tr><th>Watershed</th><th>Storm Drain System</th><th>Discharge Location</th></tr><tr><td>A</td><td>Underground pipes, boxes, and channels</td><td>Belle Air Boxes to San Bruno Channel</td></tr><tr><td>B</td><td>Detention Basin, underground pipes, boxes, and channels</td><td>Cupid Row Canal (Crystal Spring Channel)</td></tr><tr><td>C</td><td>Underground pipes and boxes</td><td>Belle Air Boxes to San Bruno Channel</td></tr></table></td><td></td></tr>
</table>

Table 3.2 — Hydrology Analysis Summary

Watershed	Peak 25-Year Storm Flow (cfs)	Peak Flow per Acre	Volume (ac-ft)	Volume per acre
A	1154.3	0.8	317	0.22
B	450.7	0.9	130	0.26
C	572.3	0.9	163	0.25

Table 4.1 — Capacity Deficiency Sumary for Watersheds A, B, C, E, and F

The capacity evaluation using hydraulic modeling determined capacity deficiencies based on a 25-year design storm.

Watershed A	Capacity/Max Flow
Earl Avenue at Crosby Court	25.9/301.3
Northeast of the intersection of Freeways 280 and 380	525.1/532.2
Cherry Avenue	375.4/689.9
Commodore Drive	557.8/549.5
Grundy Lane	336.8/539.7
Bayhill Drive	522.4/588.1
El Camino Real	12.8/25.0
Masson Avenue	0/369.4 (negative/0 slope)
Mills Avenue	218.4/370.6
Huntington and San Mateo Avenue intersection	528.1/843.8
Belle Air Boxes	387.3/1231.9

Watershed C	Capacity/Max Flow
Madison Avenue	39.6/58.7
Whitman Way	84.7/136.4
Jenevein Avenue	25.8/57.8
Cypress Avenue	15.4/34.5
Angus Avenue	N/A
Casio's Parking Lot	N/A
Huntington Avenue	528.1/843.8
Belle Air Boxes	387.3/1231.9

From the excerpts, the intersection of Huntington and San Mateo Avenues is under capacity. Along Angus Avenue, in the vicinity of San Mateo Avenue, was identified as an area where capacity issues may occur.

Identified Infrastructure Improvements:

To address the capacity deficiencies affecting San Mateo Avenue between El Camino Real and Huntington Avenue, the *City of San Bruno Storm Drain Master Plan – June 2014* identified the following CIP, **CD-1**. **CD-1** is located and detailed further in Figure 3 and Table 7 below. The **CD-1** capital improvement project should be completed prior to streetscape improvements, to prevent future impacts to the San Mateo Avenue corridor. A 44-inch steel storm drain is located under the sidewalk, between El Camino Real to Sylvan Avenue, which will impact green and sustainable infrastructure streetscape improvements proposed for the San Mateo Avenue corridor. An existing concrete box culvert is located beneath the parking strip and sidewalk in the 500 block of San Mateo Avenue that will impact green and sustainable infrastructure streetscape improvements proposed for the corridor. Based on information from the City, the existing concrete culvert from 555 to 715 San Mateo Avenue must be replaced due to the condition of the roof.

Figure 3: Storm Drain Capital Improvement Project Location

Table 7: Capital Improvement Project to Remain

Project ID	Description & Location	Constructed	Deficiency	Improvements	Resolution
CD-1	Bolt Manholes & Install Catch Basin Backflow Preventers in the vicinity of San Mateo, Huntington, Angus and Kains Avenues	1900s	Flat area; existing ground elevations are low; existing pipe has very shallow cover	Existing: Gravity main trunk collect local runoff Proposed: Pressurized main trunk at peak flow	This project is to remain a CIP to be completed in the near future.

PACIFIC GAS AND ELECTRIC SYSTEM:

EXISTING CONDITIONS:

Based on information provided by the Pacific Gas and Electric Company (PG&E), there is sufficient capacity for the current demand on the gas and electrical systems. PG&E identified sections of empty conduits within San Mateo Avenue between El Camino Real and Huntington Avenue intended for future use, if necessary.

IDENTIFIED INFRASTRUCTURE IMPROVEMENTS:

At this time, PG&E does not recommend additional conduits.

APPENDIX B: PHOTOMETRIC ASSESSMENT

By: CSW/Stuber- Stroeh Engineering Group, Inc

B. PHOTOMETRIC ASSESSMENT

CSW | ST2

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MEMORANDUM

DATE: July 15, 2019 **FILE:** 2019-20-013

TO: City of San Bruno, Community Development Department

FROM: Julia Harberson, CSW|ST2

RE: **PHOTOMETRIC ASSESSMENT FOR SAN MATEOAVENUE, SAN BRUNO**

This memorandum addresses our assessment of the photometric analysis along the San Mateo Avenue corridor is summarized below using standards from the American National Standards Institute (ANSI) and the Illuminating Engineering Society of North America (IESNA). The analysis specifically focuses on standards for vehicles, pedestrians and bicyclists.

FACTORS OF ANLYSIS:

- Pedestrian conflict is defined as high, medium or low over a one-hour peak night time period:
  - high pedestrian conflict will have approximately 100 or more pedestrian,
    - The road corridor of this project falls under this category
  - medium pedestrian conflict will have 11 to 99 pedestrians and
  - low pedestrian conflict will have under 10 pedestrian
- Pavement is classified as R1, R2, R3, or R4:
  - R1 = Portland-cement concrete

- R2 & R3 = Asphalt, rough textured (typical roadway)
  - The San Mateo Avenue corridor falls under this category
- R4 = Asphalt, smooth textured

- Road type shown below is defined as a Collector.
- 'Lux' is lumens per square meter
- 'FC' (foot-candles) is lumens per square foot. This is the preferred unit for California.

The table below shows an abridged Table 2 from IESNA RP-8:

Road and Pedestrian Conflict Area		Pavement Classification (Minimum Manintained Average Values)			Uniformity Ratio	Veiling Luminance Ratio
Road	Pedestrian Conflict Area	R1 lux/fc	R2 & R3 lux/fc	R4 lux/fc	E_{avg}/E_{min}	L_{vmax}/L_{avg}
Collector	High	8.0/0.8	12.0/1.2	10.0/1.0	4.0	0.4
	Medium	6.0/0.6	9.0/0.9	8.0/0.8	4.0	0.4
	Low	4.0/0.4	6.0/0.6	5.0/0.5	4.0	0.4

San Mateo Avenue: El Camino Real to Huntington Avenue

- Curb to curb = approximately 44 feet
- Street lights are on both side of San Mateo Avenue.
- Street lights are spaced approximately 120 feet with additional light poles at the intersections
- PHOTOMETRIC CALCULATIONS: El Camino Real to Huntington Avenue
  - Average foot-candles = 0.78
  - Max Foot Candles (FC) = 4.1
  - Min Foot Candles = 0.1
  - Minimum to Maximum FC Ratio: 0.01
  - Maximum to Minimum FC Ratio = 78.55
  - Average to Minimum FC Ratio = 15.02
- Table summary of photometric calculations comparing existing and preferred IESNA standards:

	IESNA Standard	Existing Condition	Compliance (Yes or No)
FC (average value)	1.2	0.78	No
Uniformity Ratio	4.0	15.02	No

- Conclusion: Additional light poles spaced appropriately throughout the entire corridor will increase the minimum FC Ratio and as a result lower the Uniformity Ratio closer to standard IESNA value of 4.0. Ideally the Uniformity Ratio is within 2.0 of the set IESNA Standard. Furthermore, adding additional light poles will have an adverse effect on the Average FC, but not substantial enough to increase the value so high as to be incompliant. An additional light pole is required midblock between Angus Avenue and Kains Avenue as the foot candle levels fall below the minimum level.

Typical Street Light along San Mateo Avenue

APPENDIX C: ACCESSIBILITY ASSESSMENT

By: CSW/Stuber- Stroeh Engineering Group, Inc

C. ACCESSIBILITY ASSESSMENT

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MEMORANDUM

DATE: June 21, 2019 **FILE:** 2019-20-013

TO: City of San Bruno, Community Development Department

FROM: Julia Harberson, CSW|ST2

RE: **ACCESSIBILITY ASSESSMENT FOR SAN MATEOAVENUE, SAN BRUNO**

This memorandum addresses our assessment of accessibility analysis along the San Mateo Avenue corridor. Summarized below are the applicable standards from the Americans with Disabilities Act (ADA), Part 2 of Title 24 of the California Building Code and California Disabled Accessibility Guidebook (CalDAG) used in this analysis. The analysis specifically focuses on standards for pedestrian access and future streetscape improvements and is limited to the existing sidewalk within the public right of way. Analysis of building entries outside the public right of way are not included in this analys.

FACTORS OF ANLYSIS:

- Accessible Routes:
  - Accessible routes shall consist of one or more of the following components
    - Walking surface with a running slope not steeper than 1:20
    - Doorways
    - Ramps
    - Curb ramps, excluding the flared sides.
  - All components of an accessible rout shall comply with Title 24.
- Cross Slope:
  - Maximum = ¼" per foot or 2.0%
  - Recommended Design = 1.75%
- Doorway Landings: all doorways shall provide a 48" level (maximum ¼" per foot slope) landing. Note this analysis only applies when building doorways are located at the back of sidewalk (not recessed).

Typical Street Section along San Mateo Avenue

ANALYSIS OF EXISTING CONDITIONS:

General Sidewalk Accessibility Condition

- Standard City of San Bruno 6" Curb and Gutter along entire San Mateo Avenue corridor.
- Typical Sidewalk Section: sidewalk generally slopes from back of sidewalk towards the street (note: various locations along the corridor, the concrete flags have broken at the construction

joints preventing a continuous slope across section and causing warped and reverse slope sidewalk).

- Typical Section at Bulb-outs: sidewalk generally slopes from back of sidewalk towards curb line of street, then reverse slope in the bulb-out following cross slope of street.

East Side of San Mateo Avenue Corridor

El Camino Real to Cypress Court:

- Average Cross Slope = approximately 0.7%
- Doorway Landings: Recessed outside of public right of way.
- Ramps: Compliant
- Conclusion: existing street and back of sidewalk elevations allow for construction of ADA compliant corridor improvements.

Cypress Court to Sylvan Avenue:

- Average Cross Slope = approximately 1.0%
- Doorway Landings: Recessed outside of public right of way.
- Ramps: Compliant
- Conclusion: existing street and back of sidewalk elevations allow for construction of ADA compliant corridor improvements.

Warped and Reversed Slope Sidewalk

Sylvan Avenue to Angus Avenue:

- Average Cross Slope = approximately 0.9%
- Doorway Landings: Recessed outside of public right of way.
- Ramps: Compliant
- Conclusion: existing street and back of sidewalk elevations allow for construction of ADA compliant corridor improvements.

Existing Ramp without Detectable Warning

Angus Avenue to Kains Avenue:

- Average Cross Slope = approximately 1.0%
- Doorway Landings: Recessed outside of public right of way.
- Ramps: Non-compliant
- Conclusion: existing street and back of sidewalk elevations allow for construction of ADA compliant corridor improvements.

West Side of San Mateo Avenue Corridor

El Camino Real to Jenevien Avenue:

- Average Cross Slope = approximately 1.8% (with segments in excess of 2%)
- Doorway Landings: Recessed outside of public right of way.
- Ramps: Compliant
- Conclusion: Sidewalk cannot be reconstructed as a continuous surface and maintain ADA compliant cross slopes. Installation of a Furniture Zone of Street Side Bioretention Area can be utilized to absorbed grade differential and create an ADA compliant Pedestrian Zone.

Sidewalk Section with Furniture Zone

Jenevien Avenue to Sylvan Avenue:

- Average Cross Slope = approximately 1.9% (with segments in excess of 2%)
- Doorway Landings: Recessed outside of public right of way.
- Ramps: Compliant
- Conclusion: Sidewalk cannot be reconstructed as a continuous surface and maintain ADA compliant cross slopes. Installation of a Furniture Zone of Street Side Bioretention Area can be utilized to absorbed grade differential and create an ADA compliant Pedestrian Zone.

Street Side Bioretention (Source: City of Seattle, WA)

Sylvan Avenue to Angus Avenue:

- Average Cross Slope = approximately 1.9% (with segments in excess of 2%)
- Doorway Landings: Recessed outside of public right of way.
- Ramps: Non-compliant
- Conclusion: Sidewalk cannot be reconstructed as a continuous surface and maintain ADA compliant cross slopes. Installation of a Furniture Zone of Street Side Bioretention Area can be utilized to absorbed grade differential and create an ADA compliant Pedestrian Zone.

Angus Avenue to Kains Avenue:

- Average Cross Slope = approximately 1.7% (with segments in excess of 2%)
- Doorway Landings: Recessed outside of public right of way.
- Ramps: Non-compliant
- Conclusion: Sidewalk cannot be reconstructed as a continuous surface and maintain ADA compliant cross slopes. Installation of a Furniture Zone of Street Side Bioretention Area can be utilized to absorbed grade differential and create an ADA compliant Pedestrian Zone.

APPENDIX D: HYDROLOGY ASSESSMENT

By: CSW/Stuber- Stroeh Engineering Group, Inc

D. HYDROLOGY ASSESSMENT

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MEMORANDUM

DATE: July 15, 2019 **FILE:** 2019-20-013

TO: City of San Bruno, Community Development Department

FROM: Julia Harberson, CSW|ST2

RE: **HYDROLOGY ASSESSMENT MEMORANDUM FOR SAN MATEO AVENUE, SAN BRUNO**

This memorandum addresses the assessment of the existing hydrology along the San Mateo Avenue Transit Corridor between El Camino Real an0d Huntington Avenue. The assessment includes identification of necessary modifications to the existing drainage system, due to streetscape improvements, and recommendations for location and sizing of green infrastructure in accordance with San Mateo County's Provision C.3.

EXISTING CONDITIONS:

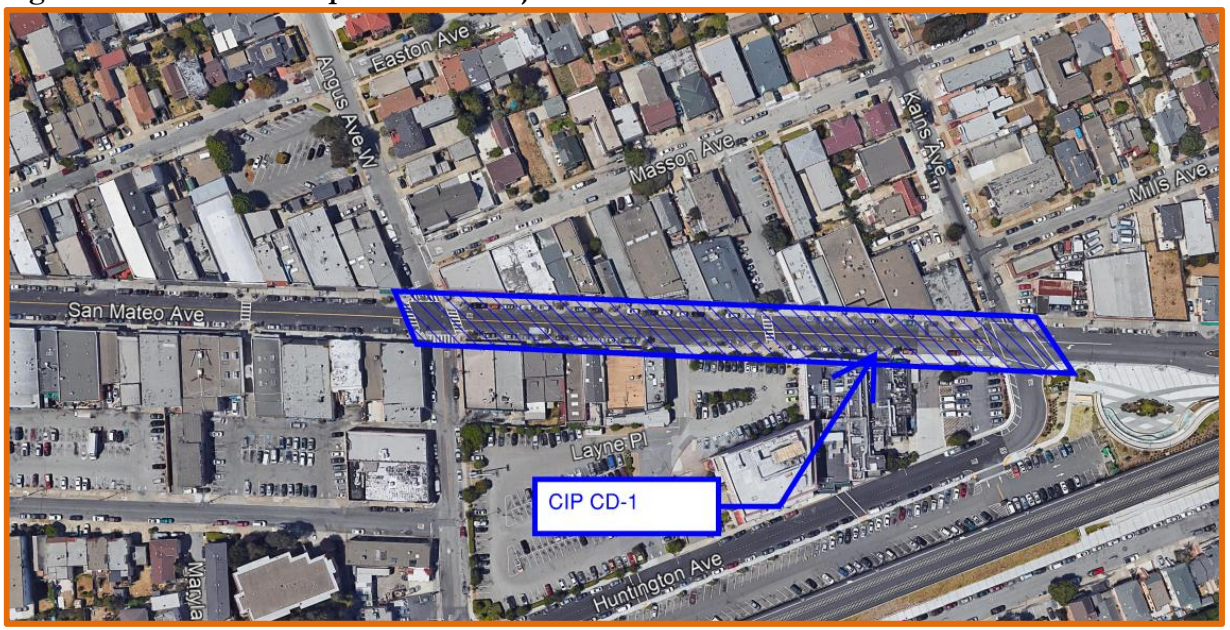
The existing watersheds, drainage management areas (DMAs), primarily drain surface water runoff from the adjacent buildings along San Mateo Avenue, between El Camino Real and Huntington Avenue, and sidewalks and roadways. The surface runoff is captured by catch basins and drop inlets within San Mateo Avenue and conveyed to an existing 44-inch steel storm drain main under the sidewalk on the east side of San Mateo Avenue.

Hydraulic analysis, in the *City of San Bruno Storm Drain Master Plan – June 2014*, determined the following areas, within the vicinity of San Mateo Avenue between El Camino Real and Huntington Avenues, where potential capacity deficiencies may occur: the intersection of Huntington Avenue and San Mateo Avenue and the intersection of Angus Avenue and San Mateo Avenue. The capacity of the primary existing pipe channel within San Mateo Avenue between Sylvan and Angus Avenues was determined to be sufficient.

INDENTIFIED INFRASTRUCTURE IMPROVEMENTS:

To address the capacity deficiencies affecting San Mateo Avenue between El Camino Real and Huntington Avenue, the *City of San Bruno Storm Drain Master Plan – June 2014* identified the following capital improvement project (CIP), **CD-1**, to address these deficiencies. **CIP CD-1**, which encompasses bolt manholes and the installation of catch basin backflow preventers, will need to remain a near future CIP and be completed prior to streetscape improvements. Figure 1 below, shows the location of CIP CD-1.

Figure 1: Storm Drain Improvement Project Locations



GREEN AND SUSTAINABLE INFRASTRUCTURE:

The San Mateo Countywide Water Pollution Prevention Plan (SMCWPPP) C.3 Stormwater Technical Guidance (Version 5 – June 2016) states that C.3 Regulated projects are defined to include "public and private projects that create and/or replace 10,000 square feet or more of impervious surface …" The San Mateo Avenue Corridor has a total watershed of approximately 326,300 square feet. The project proposes to replace existing impervious sidewalk. This will result in the creation and/or replacement of 49,360 square feet and trigger the C.3 regulations. However, Table 2-1: Projects Excluded from Provision C.3 Requirements, of the SMCWPPP C.3 Stormwater Technical Guidance manual, specifically excludes sidewalks. As such, the Priority 1 scope of the project (sidewalk demolition, sidewalk construction, street trees and lighting) would result in an exempt project. However, as the scope of the project is increased to include additional Priority Items (Priority 2 to 4, identified in the San Mateo Avenue Streetscape Plan) the scope of the project expands beyond a sidewalk project and will trigger the C.3 regulations.

SMCWPPP C.3 Stormwater Technical Guidance, suggested Low Impact Development (LID) design methods applicable to the San Mateo Avenue street scape improvements include interceptor trees (Figure 2 below), bioretention areas (Figure 3 below) and pervious pavement (Figure 4 below).

Interceptor Trees

Trees perform a variety of functions that reduce runoff volumes and improve water quality. Leaf canopies intercept and hold rainwater on the leaf surface, preventing it from reaching the ground and becoming runoff. Root systems create voids in the soil that facilitate infiltration. Trees also absorb and transpire large quantities of groundwater, making the soil less saturated, which allows more stormwater to infiltrate. Through the absorption process, trees remove pollutants from stormwater and stabilize them. Finally, tree canopies shade and cool paved areas.

A project may earn stormwater treatment credits by planting new trees and preserving existing trees at the project site. For each qualifying tree that is planted or preserved, the project earns stormwater treatment credits, which reduce the surface area (measured in square feet) of the project that must receive stormwater treatment. In other words, the stormwater treatment credit can be subtracted from the amount of impervious surface area requiring treatment.

As shown in Table 1, different amounts of stormwater reduction credit are assigned to new evergreen and new deciduous trees, and existing trees receive credit for the square footage that is under the existing tree canopy.

Table 1: Stormwater Treatment Credits for Interceptor Tree			
	New Evergreen Trees	**New Deciduous Trees**	**Existing Trees**
Credits for new and existing trees that meet interceptor tree minimum requirements	200 square feet	100 square feet	Square footage under the tree canopy for trees with an average DBH of 12 inches or more.
*DBH: Diameter at breast height (4.5 feet above grade) Source: BASMAA LID Feasibility Criteria Report, 2011 (based on the tree credit system in the State Construction General Permit standards for post-construction stormwater control)			

Load-bearing modular grid products, such as the Silva Cell, have also been developed to allow the planting of trees in uncompacted native soils, fill soils, or stormwater treatment soils, extending under sidewalks and other areas of pavement. With the Silva Cell product, for example, each cell is composed of a frame (or frames) and a deck (see Figure 2). The frames can be stacked one, two, or three units high before they are topped with a deck to create a maximum amount of soil volume for tree root growth and stormwater infiltration. Cells can be installed laterally as wide as necessary. Void space within the cells may accommodate the surrounding utilities.

Figure 2: Interceptor Tree Cross Section

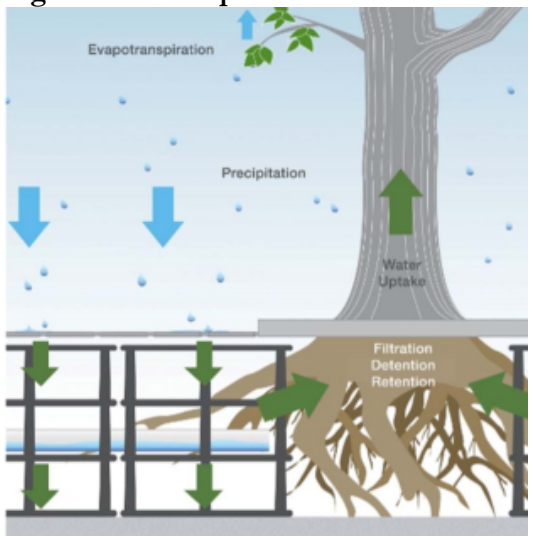
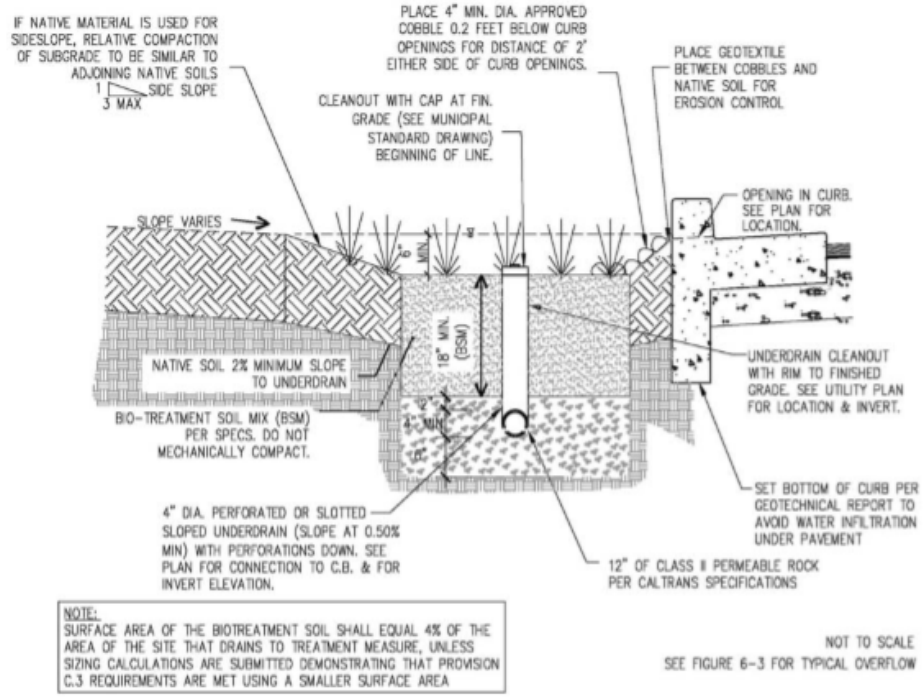


Figure 4-1: Silva Cells, stacked three units high. (Source: Deep Root Technologies, www.deeproot.com). The use of this photograph is for general information only, and is not an endorsement of this or any other proprietary product.

Bioretention Areas

Bioretention areas, or "rain gardens," are concave landscaped areas that function as soil and plant-based filtration devices that remove pollutants through a variety of physical, biological, and chemical treatment processes. Bioretention areas can be any shape. Bioretention areas normally consist of the following layers, starting from the top: a surface ponding area, a layer of mulch, planting soil and plants, and an underlying rock layer with an underdrain that connects to the municipal storm drain system. The recommended sizing method for bioretention areas is the 4% method where the required surface area of the treatment method is 4 percent of the impervious area that drains to it. The installation of bioretention areas will require the demolition of curb, gutter and sidewalk in the vicinity of the planter.

Figure 3: Bioretention Area Cross Section

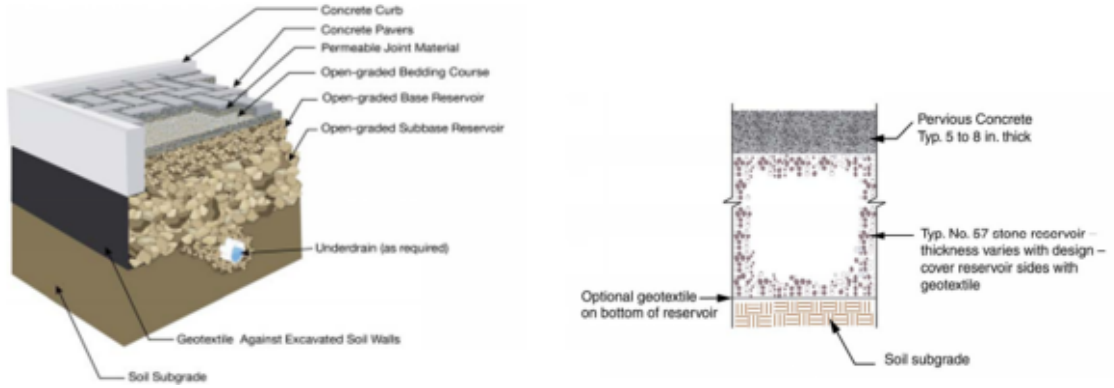


Pervious Pavement

Pervious pavement types include pervious concrete, porous asphalt, permeable concrete pavers and permeable interlocking concrete pavers (PICP). Permeable pavers allow infiltration across the entire surface of the paver while PICP utilize the joint space between the pavers for infiltration. Except for PICP, pervious pavement is generally used for areas with light vehicle loading and/or lightly trafficked areas, such as automobile parking areas. The term pervious pavement describes a system comprised of a load-bearing, durable surface constructed over a subbase/base structure typically consisting of compacted, open-graded aggregate. This layer or layers temporarily stores water prior to infiltration or drainage to a controlled outlet. The surface is porous such that water infiltrates across the entire surface of the material, or in the joints, at a high rate. If an area of pervious pavement is underlain with pervious soil or pervious storage material, such as a gravel layer sufficient to hold at least the Municipal Stormwater Regional Permit Provision C.3.d volume of rainfall runoff, it is not considered an impervious surface and can function as a self-treating or self-retaining area.

Pervious pavements are used as a self-retaining treatment method, the maximum acceptable ratio of pervious area to the receiving pervious area, pervious pavers, is two-to-one (2:1). The installation of pervious pavement will require asphalt removal and shallow excavation to create the reservoir.

Figure 4: Pervious Pavement Section



Analysis

Due to the limited available area within the San Mateo Avenue Corridor, for implementation of green infrastructure, it is not feasible to fully implement a single LID treatment measure to meet the SMCWPPP C.3 stormwater treatment requirements for the entire watershed. Implementation of a combination of interceptor trees, bioretention areas and pervious pavement can be integrated to achieve a maximum feasible percentage of the SMCWPPP C.3 stormwater treatment requirements.

Four (4) scenarios were analyzed to meet the SMCWPPP C.3 stormwater treatment requirements. Scenario 1 would meet the C.3 requirements and treat the sidewalk that is created and/or replaced. Scenarios 2 and 3, would exceed the minimum C.3 requirements by treating the sidewalk that is created and/or replaced as well as a portion of the greater watershed without any revisions to the existing curb line. Scenario 4 studies the possibility of treating the entire San Mateo Avenue Transit Corridor watershed. Each scenario will meet the minimum requirements of the SMCWPPP C.3 Guidance manual. Below is a description of LID treatment measure that would be implemented with each scenario.

LID Scenarios Analyzed:

- Scenario 1: Implements LID measures to manage runoff from the created and/or replaced sidewalk with the decorative pavement band in the sidewalk constructed of permeable pavement sized to act as self-retaining areas and utilizes interceptor trees.
- Scenario 2: Implements LID measures to manage runoff from the created and/or replaced sidewalk with the decorative pavement band in the sidewalk constructed of permeable pavement sized to act as self-retaining areas and portions of the existing watershed pavement with permeable pavement, within the 6-foot wide parking strip, sized to act as self-retaining areas and utilizes interceptor trees.
- Scenario 3: Implements LID measures to manage runoff from the created and/or replaced sidewalk with the decorative pavement band in the sidewalk constructed of permeable pavement sized to act as self-retaining areas and portions of the existing watershed pavement with permeable pavement, within the 6-foot wide parking strip, sized to act as self-retaining areas and utilizes interceptor trees. Note, the use of Silva Cells under the permeable pavement is included in this scenario.
- Scenario 4: Implements LID measures to manage the entire San Mateo Avenue corridor watershed with the combined LID measures of permeable pavement sized to act as self-retaining areas, utilizing Silva Cells, interceptor trees and bioretention areas.

Results

The Drainage Management Areas (DMA) tributary to the San Mateo Avenue Transit Corridor and potential sustainable green infrastructure are identified in Green Infrastructure Exhibits located in Appendix A. Table 2, below, identifies the DMA sub-watershed areas and created and/or replaced impervious surfaces within each sub-watershed.

Results of the analysis for Scenario 1 are identified below in Table 3. The use of the permeable pavement strip in the sidewalk and interceptor trees meets the SMCWPPP C.3 stormwater treatment requirements to manage runoff from the created and/or replaced impervious surface in the San Mateo Avenue Transit Corridor.

Scenario 2 results are depicted in Table 4, below. The use of the permeable pavement strip in the sidewalk and interceptor trees meets the SMCWPPP C.3 stormwater treatment requirements to manage runoff from the created and/or replaced impervious surface in the San Mateo Avenue Transit Corridor. However, there is insufficient permeable area to treat the entire impervious surface of the San Mateo Avenue watershed.

Results of the calculations for Scenario 3 are shown in Table 5. The use of the permeable pavement strip in the sidewalk and interceptor trees meets the SMCWPPP C.3 stormwater treatment requirements to manage runoff from the created and/or replaced impervious surface in the San Mateo Avenue Transit Corridor. However, there is insufficient permeable area to manage the treatment storm event for the entire impervious surface of the San Mateo Avenue watershed with permeable pavers and Silva Cells.

Scenario 4 results are depicted in Table 6, below. The use of the permeable pavement strip in the sidewalk and interceptor trees meets the SMCWPPP C.3 stormwater treatment requirements to manage runoff from the created and/or replaced impervious surface in the San Mateo Avenue Transit Corridor. However, there is insufficient bioretention area, permeable pavement area and Silva cells to manage the treatment storm event for the entire impervious surface of the San Mateo Avenue Transit Corridor watershed. Reducing parking to allow for larger bioretention areas, approximatly 3,300 square feet of additional bioretention area, will allow for 100% management of the entire watershed.

Table 2: Summary of San Mateo Avenue Watershed Areas

Drainage Management Area (DMA) ID	Sub-Watershed Area (sf)	Created/Replaced Impervious Area w/o Treatment Measures (sf)
1	8999	2755
2	17582	3019
3	21294	3200
4	22966	2867
5	5016	671
6	24669	2970
7	7184	634
8	6125	1165
9	11750	1431
10	5274	441
11	6329	1023
12	4331	1005
13	10198	1262
14	7094	1191
15	8457	1097
16	16978	1726
17	9371	1376
18	16927	1831
19	17372	3242
20	6387	1012
21	7706	1346
22	4500	644
23	11173	1433
24	11524	1191
25	5058	1400
26	10204	1547
27	6297	2244
28	4187	427
29	6889	1051
30	4182	1531
31	13552	1704
32	1876	473
33	2946	560
34	1823	391

Table 3: Summary of Scenario 1 Results (Management of the created/replaced pavement only)

DMA ID	Created/Replaced Impervious Area w/o Permeable Pavement Area (sf)	Permeable Pavement Area (sf)	Interceptor Trees	Percent of Area Treated (%)
1	1763	992	6	100
2	1931	1088	5	100
3	2200	500	6	100
4	1587	1280	9	100
5	511	160	2	100
6	1938	1032	6	100
7	530	104	1	100
8	645	520	3	100
9	911	520	4	100
10	265	176	1	100
11	739	284	3	100
12	677	328	2	100
13	814	448	3	100
14	675	516	3	100
15	705	392	3	100
16	982	744	4	100
17	896	480	3	100
18	1271	560	4	100
19	2430	812	5	100
20	712	300	2	100
21	894	452	3	100
22	372	272	2	100
23	921	512	3	100
24	679	512	3	100
25	908	492	3	100
26	1067	480	4	100
27	1624	620	4	100
28	255	172	1	100
29	691	360	3	100
30	979	552	3	100
31	1068	636	3	100
32	273	200	2	100
33	320	240	2	100
34	239	152	1	100

Table 4: Summary of Scenario 2 Results (Management of portion of San Mateo Ave Corridor)

DMA ID	Sub-Watershed Area (sf)	Permeable Pavement Area (sf)	Interceptor Trees	Percent of Area Treated (%)
1	8999	1952	6	73.3
2	17582	2138	5	35.8
3	21294	1580	6	19.5
4	22966	2810	9	31.1
5	5016	460	2	24.1
6	24669	1722	6	24.5
7	7184	104	1	7.6
8	6125	1420	3	53.5
9	11750	1750	4	33.8
10	5274	326	1	16.2
11	6329	650	3	24.4
12	4331	628	2	33.0
13	10198	1018	3	23.1
14	7094	1194	3	40.4
15	8457	896	3	25.0
16	16978	1806	4	23.8
17	9371	480	3	12.9
18	16927	1508	4	20.1
19	17372	812	5	12.6
20	6387	738	2	28.5
21	7706	1148	3	35.2
22	4500	590	2	33.0
23	11173	1220	3	25.0
24	11524	1202	3	23.8
25	5058	1200	3	59.8
26	10204	1260	4	29.7
27	6297	1418	4	58.5
28	4187	400	1	24.3
29	6889	726	3	27.3
30	4182	1230	3	78.4
31	13552	1488	3	24.8
32	1876	500	2	77.9
33	2946	516	2	47.2
34	1823	302	1	48.0

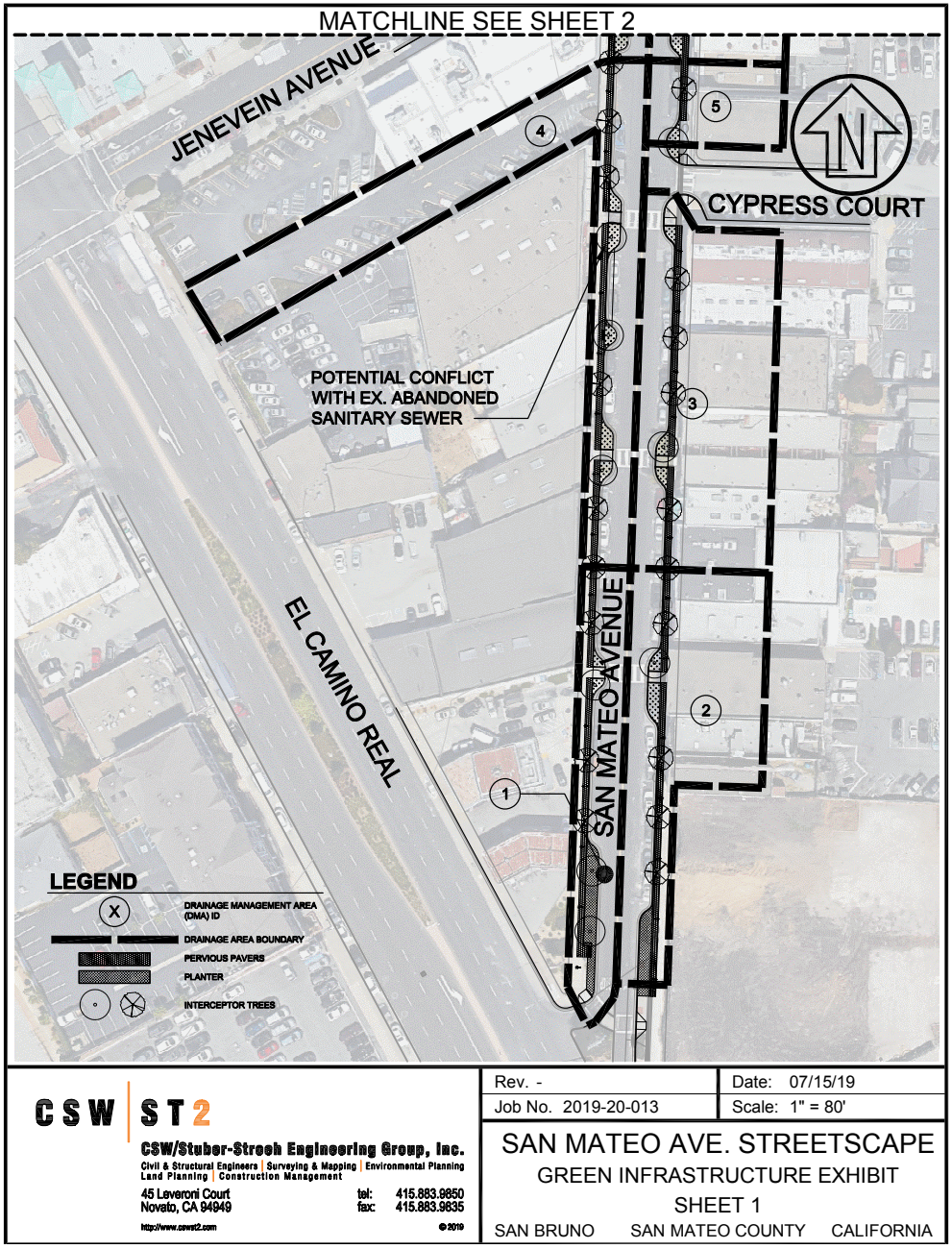
Table 5: Summary of Scenario 3 Results (Management of the San Mateo Ave Corridor)

DMA ID	Sub-Watershed Area (sf)	Permeable Pavement Area (sf)	Silva Cell	Interceptor Trees	Percent of Area Treated (%)
1	8999	1952	42	6	100.6
2	17582	2138	88	5	62.2
3	21294	1580	65	6	35.0
4	22966	2810	118	9	58.4
5	5016	460	19	2	43.6
6	24669	1722	72	6	39.5
7	7184	104	5	1	11.0
8	6125	1420	52	3	100.6
9	11750	1750	73	4	66.1
10	5274	326	13	1	28.7
11	6329	650	27	3	46.9
12	4331	628	26	2	65.8
13	10198	1018	42	3	44.5
14	7094	1194	50	3	78.7
15	8457	896	37	3	47.9
16	16978	1806	75	4	46.5
17	9371	480	0	3	12.9
18	16927	1508	63	4	39.1
19	17372	812	0	5	12.6
20	6387	738	30	2	52.9
21	7706	1148	48	3	68.3
22	4500	590	25	2	62.8
23	11173	1220	50	3	48.2
24	11524	1202	50	3	46.2
25	5058	1200	36	3	100.3
26	10204	1260	52	4	56.5
27	6297	1418	46	4	100.3
28	4187	400	17	1	45.1
29	6889	726	30	3	50.4
30	4182	1230	15	3	100.0
31	13552	1488	60	3	47.6
32	1876	500	7	2	100.7
33	2946	516	21	2	87.4
34	1823	302	13	1	87.7

Table 6: Summary of Scenario 4 Results (Management of the San Mateo Ave Corridor)

DMA ID	Sub-Watershed Area (sf)	Permeable Pavement Area (sf)	Silva Cell	Bioretention Area (sf)	Interceptor Trees	Percent of Area Treated (%)
1	8999	1952	0	764	6	100.0
2	17582	2138	0	721	5	100.0
3	21294	1580	65	391	6	63.2
4	22966	2810	81	427	9	100.0
5	5016	460	19	100	2	89.1
6	24669	1722	0	1095	6	100.0
7	7184	104	5	160	1	14.5
8	6125	1420	39	0	3	100.0
9	11750	1750	73	80	4	87.6
10	5274	326	13	80	1	43.3
11	6329	650	27	50	3	58.6
12	4331	628	26	0	2	67.6
13	10198	1018	42	75	3	55.5
14	7094	1194	35	75	3	100.0
15	8457	896	37	75	3	62.8
16	16978	1806	75	75	4	54.2
17	9371	480	0	75	3	13.7
18	16927	1508	63	100	4	46.8
19	17372	812	0	200	5	14.0
20	6387	738	30	100	2	92.6
21	7706	1148	48	75	3	98.2
22	4500	590	18	75	2	100.0
23	11173	1220	50	75	3	59.9
24	11524	1202	50	75	3	56.9
25	5058	1200	0	75	3	100.0
26	10204	1260	52	125	4	86.2
27	6297	1418	0	125	4	100.0
28	4187	400	17	75	1	84.5
29	6889	726	30	125	3	95.2
30	4182	1230	0	75	3	228.4
31	13552	1488	60	75	3	57.5
32	1876	500	0	75	2	100.0
33	2946	516	0	75	2	100.0
34	1823	302	0	75	1	100.0

APPENDIX A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CSW | ST2
CSW/Stuber-Stroeh Engineering Group, Inc.
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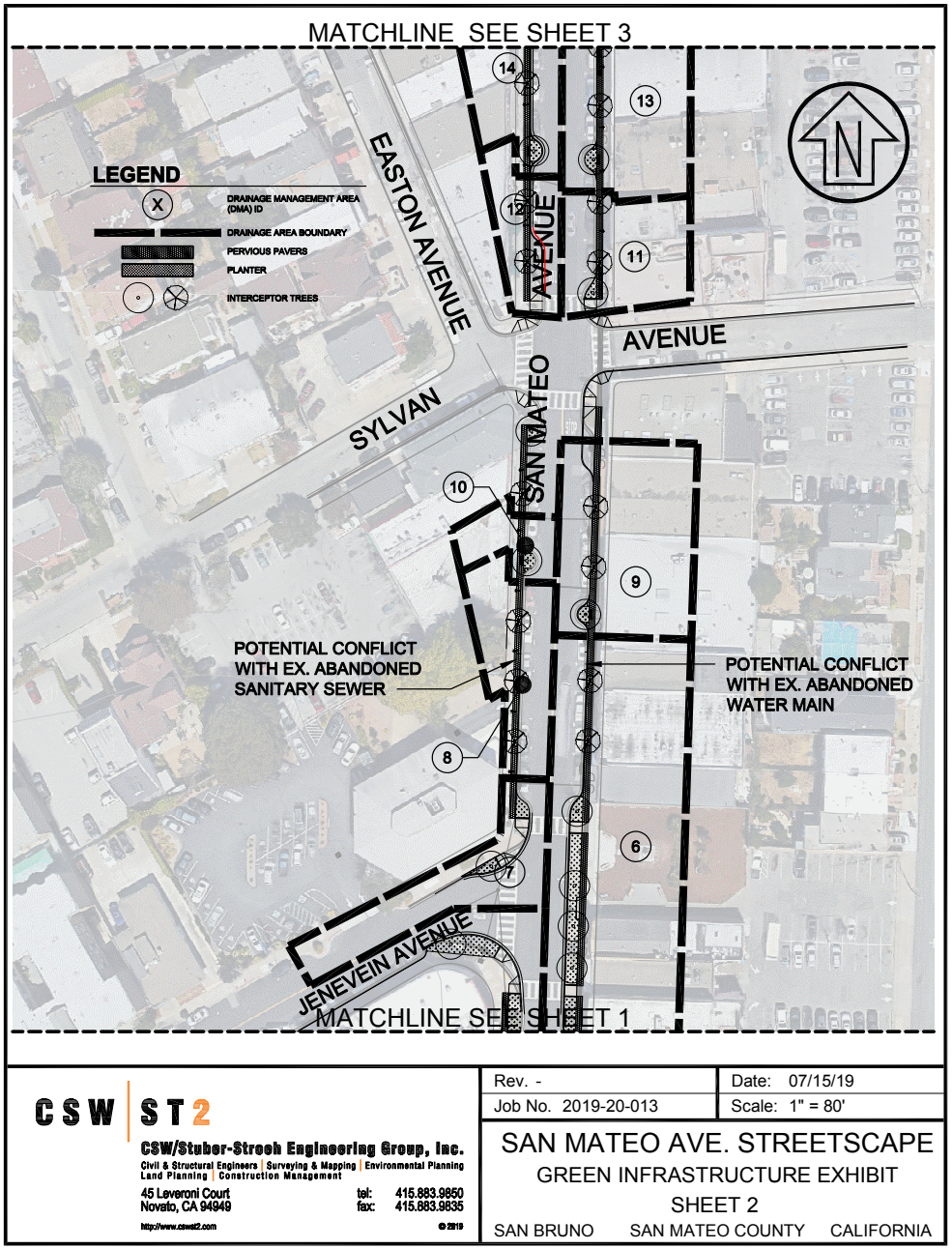
GREEN INFRASTRUCTURE EXHIBIT
SHEET 1
SAN BRUNO SAN MATEO COUNTY CALIFORNIA



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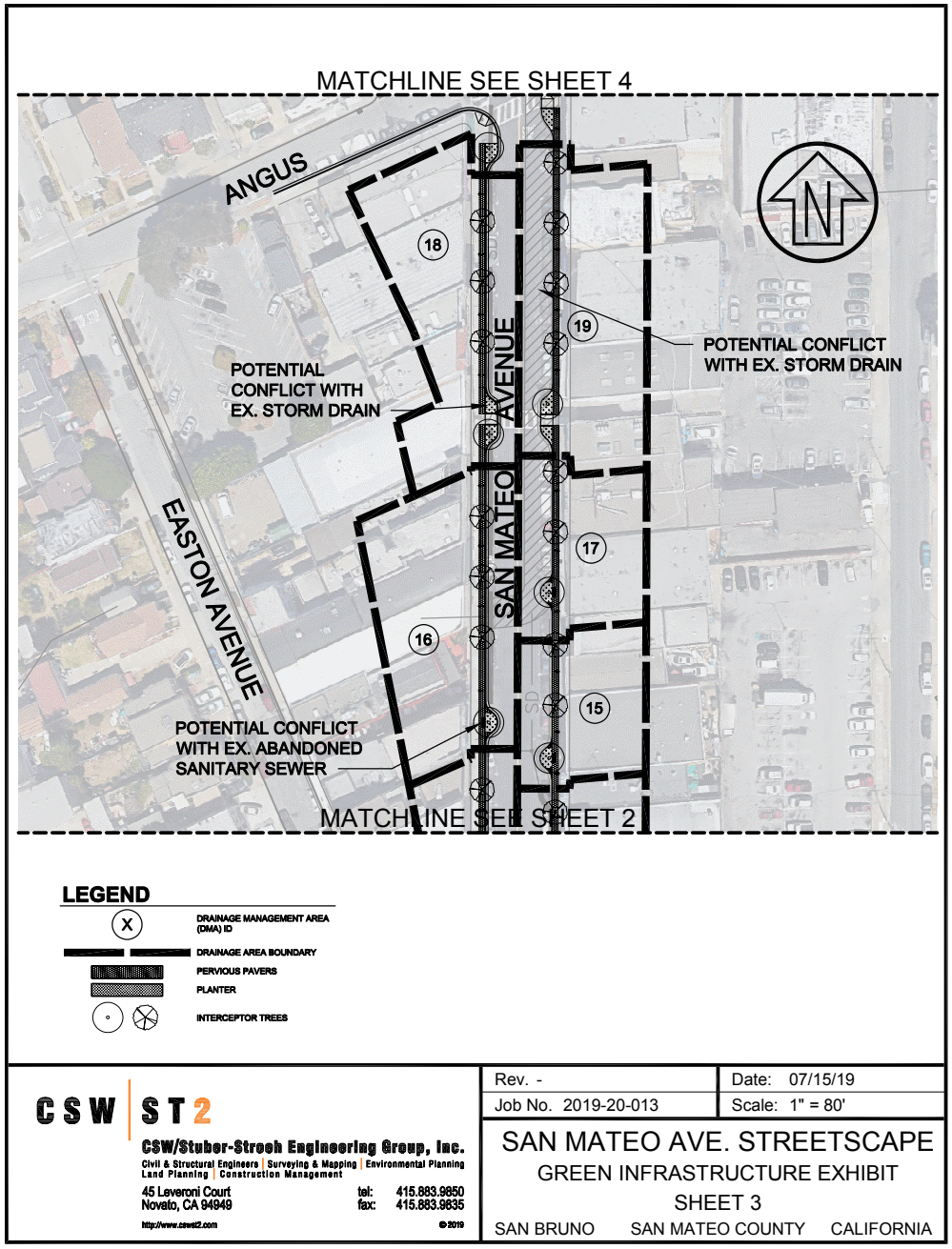
SAN MATEO AVE. STREETSCAPE
GREEN INFRASTRUCTURE EXHIBIT
SHEET 2

SAN BRUNO SAN MATEO COUNTY CALIFORNIA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DRAINAGE MANAGEMENT AREA (DMA) ID
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PERVIOUS PAVERS
PLANTER
INTERCEPTOR TREES
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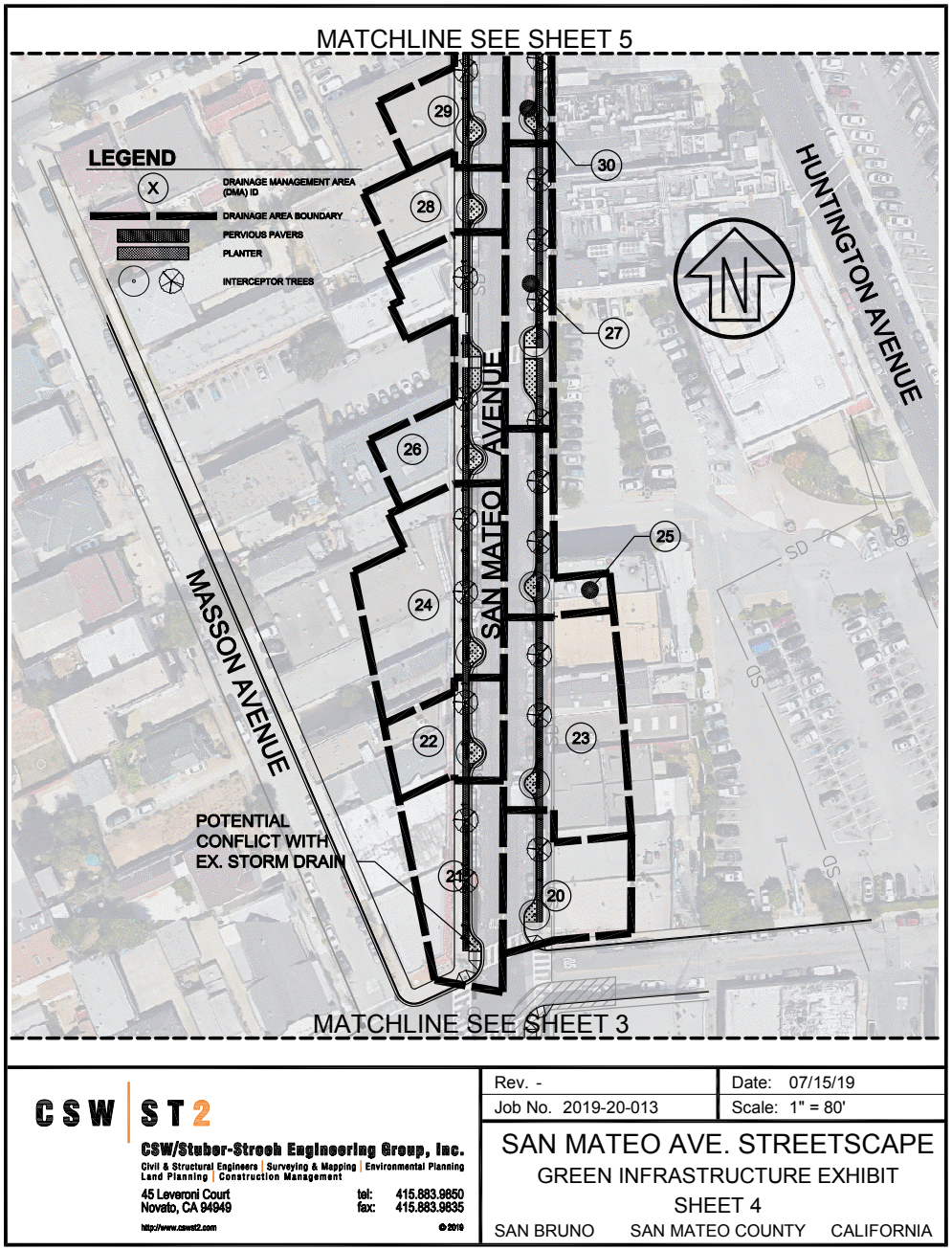

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SAN MATEO AVE. STREETSCAPE
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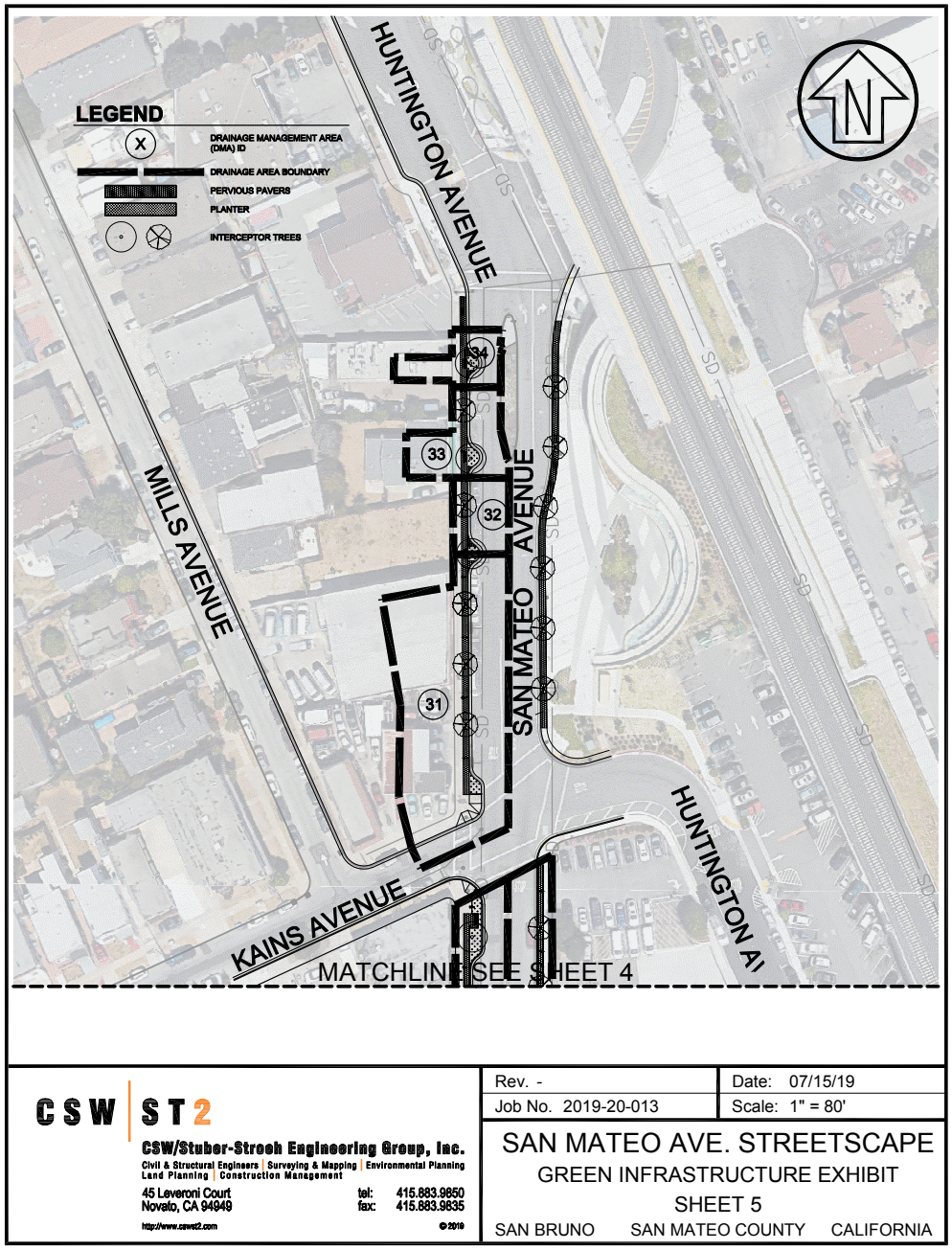
SAN BRUNO SAN MATEO COUNTY CALIFORNIA



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SAN MATEO AVE. STREETSCAPE
GREEN INFRASTRUCTURE EXHIBIT
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SAN BRUNO SAN MATEO COUNTY CALIFORNIA

APPENDIX E: COST ESTIMATE

By: CSW/Stuber- Stroeh Engineering Group, Inc

E. COST ESTIMATE

CSW | ST2

PRIORITY 1

ITEM	DESCRIPTION	QTY.	UNIT	UNIT COST	AMOUNT
100	**GENERAL CONDITIONS**				
101	Mobilization/ Demobilization	1	LS	$ 338,000.00	$338,000
102	Water Pollution Control	1	LS	$ 16,000.00	$16,000
103	Traffic Control	1	LS	$ 40,000.00	$40,000
				Task 100 Subtotal	**$394,000**
200	**DEMOLITION**				
201	Remove Concrete	49,860	SF	$ 6.00	$300,000
202	Remove Trees	10	EA	$ 1,500.00	$150,000
203	Abandond Utility Removal (Sewer & Water)	2,500	LF	$ 40.00	$100,000
				Task 200 Subtotal	**$450,000**
300	**EARTHWORK**				
301	Cut and Export Soil	790	CY	$ 100.00	$79,000
				Task 300 Subtotal	**$79,000**
400	**STREETS AND SIDEWALKS**				
401	Accessible Ramp	3,500	SF	$ 40.00	$140,000
402	4" PCC Sidewalk (incl. base rock)	38,400	SF	$ 40.00	$1,536,000
403	Bus Stop Improvements (Bus Shelters, Bulb-out Extension)	3	EA	$ 25,500.00	$76,500
				Task 400 Subtotal	**$1,676,000**
500	**UTILITIES**				
501	Waterline Relocation: Remove Existing Water Line	660	LF	$ 60.00	$40,000
502	Waterline Relocation: 8" Water Line (incl. trenching & b	680	LF	$ 250.00	$170,000
503	Waterline Relocation: Asphalt Overlay (trench only)	74	TONS	$ 195.00	$15,000
504	Street Lights (assumes no upgrade to)	99	EA	$ 4,000.00	$396,000
				Task 500 Subtotal	**$621,000**
600	**IRRIGATION**				
601	Irrigation	1,510	SF	$ 10.00	$15,000
				Task 600 Subtotal	**$15,000**
700	**PLANTING**				
701	Trees	120	EA	$ 2,000.00	$240,000
702	Planting (incl. soil preperation)	1,510	SF	$ 20.00	$30,000
				Task 700 Subtotal	**$270,000**
900	**SITE FURNISHINGS**				
901	Benches	28	EA	$ 1,300.00	$36,000
902	Bike Racks	62	EA	$ 500.00	$31,000
903	Trash and Recycle Receptical Replacement	76	EA	$ 1,500.00	$114,000
904	Wayfinding Signage & Business Directories (Allowanc	1	LS	$ 90,000.00	$90,000
905	Seatwalls	151	LF	$ 500.00	$76,000
				Task 800 Subtotal	**$347,000**
				Construction Cost (2019 Dollars):	**$3,852,000**
				Contingency (35%):	**$1,348,200**
				Total Construction Cost (2019 Dollars):	**$5,200,200**
				Design Cost (15% of Total Construction Cost)	**$780,030**

Note: All Total Amounts have been rounded to the neares $1,000.

PRIORITY 2

ITEM	DESCRIPTION	QTY.	UNIT	UNIT COST	AMOUNT
1000	**Priority 2 Improvements**				
1001	Suspended Pavement at Tree Wells (Silva Cells)	120	EA	$ 1,700.00	$ 204,000.00
1002	Gateway Monuments	1	LS	$ 750,000.00	$ 750,000.00
1003	Paseo Gateway Monuments	10	EA	$ 10,000.00	$ 100,000.00
1004	Roadway Striping (Thermoplastic)	2,900	LF	$ 5.00	$ 15,000.00
1005	Planting (incl. soil prep) & Irrigation at Existing Bulbouts	3,700	SF	$ 30.00	$ 111,000.00
1006	Paseo Improvements/Art Installation (Allowance)	1	LS	$ 400,000	$ 400,000.00
1007	Alt. Stormwater Management#1 (see breakdown)[2]	1	LS	$338,000	$ 338,000.00
				Task 1000 Subtotal	**$1,918,000**
				Contingency (35%):	**$671,300**
				Total Task 1000 Subtotal	**$2,589,300**

Notes: 1. Alterative Stormwater Management #1 includes Permeable Pavement in the sidewalk, refer to Breakdown below and Hydrology Assesment Memorandum for further description.
2. Alterative Stormwater Management #1 unit cost above represents the increase in cost above concrete sidewalk assumed in Priority 1, the breakdown below includes the total cost

PRIORITY 3

ITEM	DESCRIPTION	QTY.	UNIT	UNIT COST	AMOUNT
1100	**Priority 3 Improvements**				
1101	Centennial Park Improvements	7478	SF	$ 70.00	$524,000
1102	Artistic Expression: Accent Lighting (bench)	28	EA	$ 400.00	$11,000
1103	Artistic Expression: Accent Lighting (seatwall)	151	LF	$ 200.00	$30,000
1104	Alt. Stormwater Management#4 (see breakdown)[2]	1	LS	$1,382,580	$1,383,000
				Task 1100 Subtotal	**$1,948,000**
				Contingency (35%):	**$681,800**
				Total Task 1100 Subtotal	**$2,629,800**

Notes: 1. Alterative Stormwater Management #4 includes Silva Cells and Bioretention Areas, refer to Breakdown below and Hydrology Assesment Memorandum for further description.
2. Alterative Stormwater Management #4 unit cost above represents the increase in cost above Alternative Stormwater Management #2, and removes the installation of vehicular

PRIORITY 4

ITEM	DESCRIPTION	QTY.	UNIT	UNIT COST	AMOUNT
1200	**Priority 4 Improvements**				
1201	Curb Realignment & Planting at Jenevien Ave.				
1201.1	Curb & Gutter/ Pavement Demolition	160	LF	$ 15.00	$3,000
1201.2	Curb & Gutter (incl. base rock)	180	LF	$ 60.00	$11,000
1201.3	4" PCC Sidewalk (incl. base rock)	1,100	SF	$ 40.00	$44,000
1201.4	Planting (incl. soil prep)	700	SF	$ 20.00	$14,000
1201.5	Irrigation	700	SF	$ 10.00	$7,000
1202	Posey Park Improvements	21272	SF	$ 70.00	$1,489,000
1203	Atistic Expression: Crosswalks	7412	SF	$ 50.00	$371,000
1204	Atistic Expression: Paving	19372	SF	$ 50.00	$969,000
1205	Atistic Expression: Seatwalls	151	LF	$ 300.00	$45,000
1206	Atistic Expression: Custom Benches	28	EA	$ 1,500.00	$42,000
1207	Alt. Stormwater Management#2 (see breakdown)[1]	1	LS	$1,136,356	$1,136,000
				Task 1200 Subtotal	**$4,131,000**
				Contingency (35%):	**$1,445,850**
				Total Task 1200 Subtotal	**$5,576,850**

Notes: 1. Alterative Stormwater Management #2 includes Permeable Vehiculare Pavement, refer to Breakdown below and Hydrology Assesment Memorandum for further description.

ALTERNATIVE STORMWATER MANAGEMENT BREAKDOWNS

1007	**ALTERNATIVE STORMWATER MANAGEMENT #1**				
1007.1	Permeable Pavement (Pedestrian, incl. base rock)	16,900	SF	$ 60.00	$1,014,000
				Task 1007 Subtotal	**$1,014,000**

1207	**ALTERNATIVE STORMWATER MANAGEMENT #2**				
1207.1	Asphalt Removal/Demolition	20,400	SF	$ 2.00	$40,800
1207.2	Cut and Export Soil	756	CY	$ 100.00	$75,556
1207.3	Permable Pavers (Vehicular, incl. base rock)	20,400	SF	$ 50.00	$1,020,000
				Task 1207 Subtotal	**$1,136,356**

1104	**ALTERNATIVE STORMWATER MANAGEMENT #3 (NOT USED)**				
1104.1	Asphalt Removal/Demolition	20,400	SF	$ 2.00	$40,800
1104.2	Cut and Export Soil	756	CY	$ 100.00	$75,600
1104.3	Permable Pavers (Vehicular, incl. base rock)	20,400	SF	$ 75.00	$1,530,000
1104.4	Silva Cells	1,370	EA	$ 700.00	$959,000
				Task 1104 Subtotal	**$2,605,400**

1104	**ALTERNATIVE STORMWATER MANAGEMENT #4**				
1104.1	Asphalt Removal/Demolition	23,700	SF	$ 2.00	$47,400
1104.2	Cut and Export Soil	756	CY	$ 100.00	$75,600
1104.3	Permable Pavers (Vehicular, incl. base rock)	20,400	SF	$ 75.00	$1,530,000
1104.4	Silva Cells	955	EA	$ 700.00	$668,500
1104.5	Demolition of Curb & Gutter	550	LF	$ 15.00	$8,250
1104.6	Curb & Gutter (incl. base rock)	550	LF	$ 60.00	$33,000
1104.7	Bioretention Soil	511	CY	$ 90.00	$46,000
1104.8	Class II Permeable	341	CY	$ 250.00	$85,185
1104.9	Storm Drainage (allowance)	1	EA	$ 25,000.00	$25,000
				Task 1104 Subtotal	**$2,518,935**

APPENDIX F: TRANSPORTATION ASSESSMENT AND RECOMMENDATIONS

By: Parisi Transportation Consultants

F. TRANSPORTATION ASSESSMENT AND RECOMMENDATIONS

Parisi TRANSPORTATION CONSULTING

Memo

To: Jacob Tobias; WRT Design, Rivka Weinstock; WRT Design

From: Patrick Golier, Jasmine Stitt, Josh Handel; Parisi Transportation Consulting

Date: July 31, 2019

Subject: San Mateo Avenue Streetscape Plan: Transportation Memo

The purpose of this memorandum is to describe design recommendations for transportation on the San Mateo Avenue, located in San Bruno between the intersections of El Camino Real and Huntington Avenue. Specifically, this memorandum presents the recommendations and findings related to the following:

1. Bicycle Parking
2. Centerline Markings
3. Loading Zones
4. Bus Stop Recommendations
5. ADA Parking Recommendations
6. Bike Network Treatment
7. Pedestrian Treatments

BICYCLE PARKING

Summary:

- Provide a bicycle parking rack approximately every 100 feet along the corridor;
    - Each rack can accommodate two bicycles; one on either side of the rack
- Bicycle racks can be placed on the sidewalks and bulb outs

As part of the City of San Bruno's Walk 'n Bike Plan, a survey was conducted to identify the challenges and obstacles to biking in the City of San Bruno. Few or no bike-parking racks was identified as an obstacle by 72% of respondents[1]. An open-ended question also asked what specific locations the public would like to see bike-paring racks and one of the most commonly cited locations was Downtown in General and San Mateo Avenue more specifically.

[1] City of San Bruno Walk 'n Bike Plan (2016) Retrieved from https://www.sanbruno.ca.gov/civicax/filebank/blobdload.aspx?blobid=27455

Please use the following guidance in the siting of bike racks along the corridor:

General Recommendations

- A minimum of 57 bike racks should be sited along the corridor. This number represents an average of one rack roughly every 100 feet on each side of the street. The Federal Highway Administration, National Association of City Transportation Officials, and the Association of Pedestrian and Bicycle Professionals all recommend that bike parking be located no more than 50 feet from building entrances. By placing racks at least every 100 feet, the corridor will conform to this standard. [2]
- Single racks accommodating two bicycles (one on either side) dispersed throughout the corridor are preferable to fewer multiple bike rack sites because they allow a bicyclist to park closer to their destination, reducing the distance they need to walk to their destination. Widely distributed bike parking is also preferable for security, as it allows the rider to be closer to their bicycle.
- Bike racks should be placed in locations near the main entrances of businesses, in well-lit spaces in view of a window whenever possible.
- Rack placement should be prioritized in front of businesses that people are likely to bike to, such as convenience stores, coffee shops, restaurants, and gyms. These locations should have at least two racks (accommodating 4 bicycles) within 50 feet of the main entrances.
- Locations that customers are less likely to bike to on a regular basis (such as the gas station and the furniture store) do not need racks immediately in front of them.

Recommended Placement

- When the sidewalk is 10'-14' in width (the majority of the corridor), bike racks should be placed parallel to the street
- Bike racks placed parallel to the street should be sited at least 24" from the curb face, at least 36" from driveways, mailboxes, trash cans, or other street furniture, and at least 72" from fire hydrants.
- Where the sidewalk is at least 14' wide (such as at bulb-out locations), bike racks can be placed perpendicular to the street.

[2] https://www.fhwa.dot.gov/publications/research/safety/pedbike/05085/chapt17.cfm
https://nacto.org/publication/transit-street-design-guide/station-stop-elements/stop-elements/bike-parking/
https://cdn.ymaws.com/www.apbp.org/resource/resmgr/Bicycle_Parking/EssentialsofBikeParking_FINA.pdf

- A bicycle rack placed parallel to the curb must be placed at least 48" from an adjacent rack; 72" is recommended. A bicycle rack placed perpendicular the curb must be placed at least 36" from an adjacent rack – 48" is recommended.
- When sited adjacent to on-street parking spaces, racks should be placed roughly aligned with painted parking tees, if possible, so that parked bicycles do not interfere with the opening of car doors.

In addition to short term bicycle parking, long term parking near the Caltrain station is also recommended. The Caltrain Bike Parking Management Plan found that the utilization for electronic lockers is much higher than keyed lockers and recommends replacing keyed lockers with electronic lockers as funding is identified. Current bike parking at Posey Park has 12 keyed lockers; replacing these with electronic lockers can increase the number of cyclists that can access the Caltrain station.

CENTERLINE MARKINGS

Summary:

- Double yellow centerlines should only be used within 50 feet of each mid-block crosswalk and at 100 feet from the approaches to the intersection;
- Broken yellow centerlines should be used in the mid-block sections;
- The exception to this guidance is on the block of San Mateo Avenue between Sylvan Avenue and El Camino Real, where double yellow centerlines should be maintained given the multiple mid-block crossings and short block lengths along this section of the corridor.

San Mateo Avenue is currently striped with a double yellow centerline which indicates a no passing zone along the entire length of the street in the project area.

Per the California Manual on Uniform Traffic Control Devices (CA MUTCD 2014 Revision 4), centerline markings are required along San Mateo Avenue, consistent with the direction that these markings "shall be placed on all paved urban arterials and collectors that have a traveled way of 20 feet or more in width and an ADT of 6,000 vehicles per day or greater." There are two centerline pattern options presented by the CA MUTCD that are applicable to San Mateo Avenue, including the double yellow (CA MUTCD Figure 3A-101) and the broken yellow centerline (CA MUTCD Figure 3A-104). Caltrans' Standard Plans for centerline striping vary based on facility speed. The lowest speed centerline detail (Dashed Yellow) is Caltrans Detail 1 (no reflector) and Detail 2 (reflector).[3]

[3] 2018 Caltrans Standard Plan 2018 A20A

Section 3B.02 of the CA MUTCD recommends striping a no-passing zone (i.e., double yellow striping) between 100 and 300 feet in length at the approach to an intersection placed in a pattern as shown in Figure 3A-109(CA). No-passing zones should also be established on two-way, two-lane roadways at vertical and horizontal curves and other locations where an engineering study indicates that passing must be prohibited because of inadequate sight distances or other special conditions (CA MUTCD 3B.02.03).

Based on the CA MUTCD it is recommended to restripe San Mateo Avenue as such:

- between Sylvan Avenue and Huntington Avenue,
    - restripe to a broken centerline (Caltrans Detail 1) along the corridor and
    - restripe to a double yellow centerline (Caltrans Detail 21) 50 feet from the approaches to crosswalks and 100 feet at the approach to intersection,
- between Sylvan Avenue and El Camino Real,
    - maintain the existing double yellow centerline.

Because San Mateo Avenue has a straight horizontal alignment and no vertical curves that adversely affect sight distance, provision of a broken yellow centerline within 50 feet of the mid-block crossings is recommended.

Figure 1 shows a summary of the proposed centerline markings.

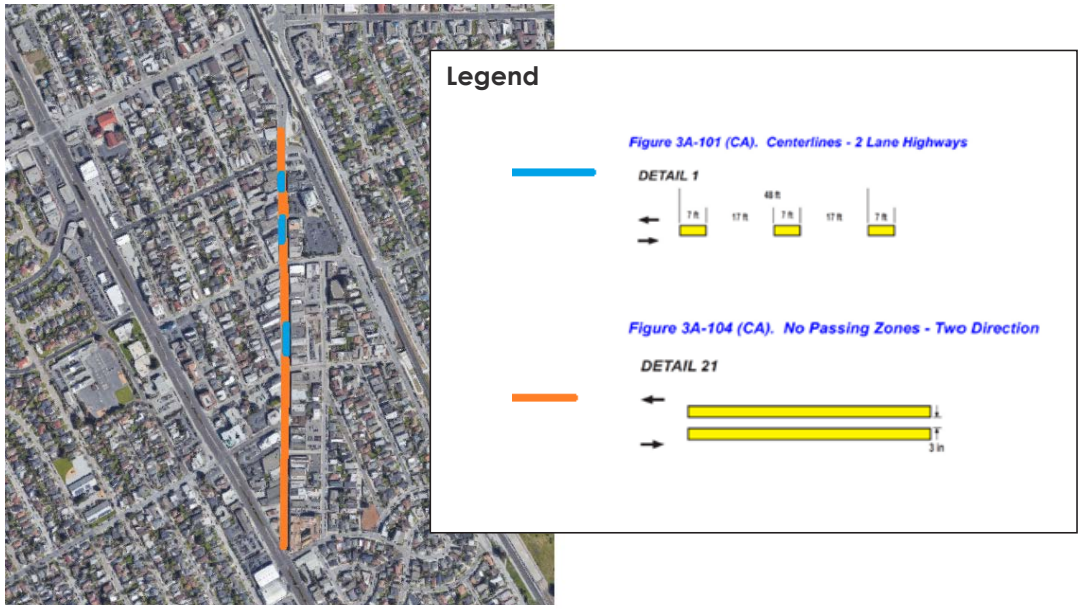

Figure 1: Centerline Marking Recommendations

LOADING ZONES

Summary:

- Install yellow loading zones approximately every 1,000 feet along the corridor to encourage commercial loading activities by delivery vehicles to take place along the curb rather than in the travel lane;
- Yellow zones should be placed at the beginnings of each block, ideally, to facilitate easier access for these larger vehicles to the curb;
- The exact locations of any new yellow zones should be planned in consultation with the local business community who can help to provide input on balancing the various user demands for the curbside;
- A passenger vehicle white zone should be installed in front of La Petite Baleen Swim School to facilitate safe passenger drop-off at the curb rather than in the travel lane

Yellow zones are designated areas where commercial and passenger loading activities only are permitted (San Bruno Municipal Code 7.16.020). These zones apply between 7am and 6pm on any day except Sunday. While there is no formal guidance to the location and number of loading zones along commercial corridors, it is generally common for commercial corridors to have yellow zones to formalize commercial activities. Designating a specified loading zone could decrease the amount of illegally double-parked delivery trucks. Trucks that are double-parked can restrict sightlines and cause unnecessary congestion.

It is for these reasons that yellow zones are recommended for San Mateo Avenue. One loading zone every 1,000 feet may be sufficient for the amount of deliveries on San Mateo Avenue, which would result in three loading zones along the project corridor. These loading zones should be 40 feet long (2 parking stalls) to ensure adequate space for larger delivery vehicles and to incentivize delivery trucks to pull over to the curb. Locating these zones on the east side of the street, in front of businesses where there are off street parking areas, may help to minimize the impact of parking loss for businesses that are close to other parking. Ideally, they should be located at the beginnings and ends of the blocks to make it easier for trucks to pull into the curb.

The exact locations of any new yellow zones should be determined with the local business community to determine the most effective locations along the street for yellow zones at the expense of general vehicle parking.

Per San Bruno Municipal Code yellow zones are time-restricted (i.e., 7am – 6pm Monday – Saturday), but the hours of the zone should also be considered under consultation with the business community who can help to provide input on balancing the various demands for curbside use along the corridor. Any deviation from Municipal Code would require City Council action.

In addition to yellow loading zones, passenger loading zones (i.e., white zones) are recommended in front of businesses with heavy drop-off activity, particularly after school activities for children. This recommendation is consistent with the Parking Management Recommendations as part of the San Bruno Parking Management Plan. Currently drivers often stop in the middle of the street to let children out directly in front of the business rather than taking the time to find parking further away. It is recommended to restripe two parking stalls as a time-restricted passenger loading zone in front of the La Petite Baleen Swim School during after-school hours. San Bruno Municipal Code sets the hours for white zones at 7am to 6pm Monday – Saturday, but this zone could be restricted for passenger loading between the hours of 1pm to 5pm Monday to Saturday, subject to City Council action, since this represents the times-of-day with the largest number of swim classes.

Figure 2: Time Restricted Passenger Loading Zone in front of La Petite Baleen Swim School

BUS STOP RECOMMENDATIONS

Summary:

- Bus stops should be designed so that passengers with limited mobility can embark and alight buses directly from the sidewalk;
- A 24' x 8' accessible boarding area is required to allow passengers to exit from the rear of a 40' bus;
- A level landing area of at least 5' x 8' should be provided so that a wheelchair lift can be deployed, if necessary. The sidewalks around the bus stops should be made clear of any obstacles (seating, poles, planters, etc.) where a wheelchair lift would deploy;
- Curbs should be painted red at all bus stops

SamTrans line 141 provides transit service along San Mateo Avenue and uses 29', 35', and 40' buses. Forty-foot buses require a 20' out-taper when located in a parking bay, and 10' in-taper. When stopped, the bus should be located 10' from the crosswalk (at both near side and far side stops). A 24' x 8' accessible boarding area is required to allow passengers to exit from the rear door of a 40' bus.

- **Sylvan Avenue/San Mateo Avenue**: Both the northbound and southbound stops at this location are currently not ADA accessible. They lack a place for a bus to deploy a wheelchair ramp, and passengers exiting from the rear of the bus must exit into the parking lane.
    - At a minimum, the bus must have access to the curb to deploy a curb ramp and allow passengers to exit from the front door. This can be achieved by installing a curb extension in the first parking stall behind each of the bus stops to create a 24' x 8' boarding area. The existing potted plants at these locations may need to be relocated. This would allow passengers the ability to access the curb from both doors of the bus and eliminate the need for a bus to pull out of the traffic flow.
    - Alternatively, ADA-compliant bus stops can be facilitated if three street parking spaces are removed behind each of the bus stops and red zones installed in the parking bay to allow a 40' bus to access the curb. This would be the least expensive, short-term option, though less preferable from a parking supply and transit operations perspective.
    - In the longer term, the southbound bus stop could be a candidate location for a curb extension and placemaking elements. The southbound stop is located immediately in front of a Starbucks, and already has a small amount of outdoor seating. We recommend installing a combination bus stop – parklet here (Figure 3: Combination Bus Stop Parklet, Image from AC Transit Multimodal Corridor Design Guide)
- **Kains Avenue/San Mateo Avenue:** The north/eastbound stop is used to connect passengers to Caltrain and is located on the far-side of the intersection adjacent to Posy Park. The plaza is entirely concrete and provides no shade for users in the hot summer months or shelter in wet weather. The seating available in the plaza is far from the bus stop.

  The south/westbound stop is located mid-block, with the flag in front of Ninja Sushi & Tofu (681 San Mateo Avenue).
    - **North/Eastbound stop**: Recommended improvements include installation of red curb to better define the bus stop location, and a bus shelter with seating.

- **South/Westbound stop**: The existing south/westbound bus stop is located far from the intersection, in front of Ninja Sushi & Tofu at 681 San Mateo Avenue. The bus stop should be relocated to the existing bulb-out at the far side of the intersection so that bus passengers can board from the curb and a wheelchair ramp can be deployed.

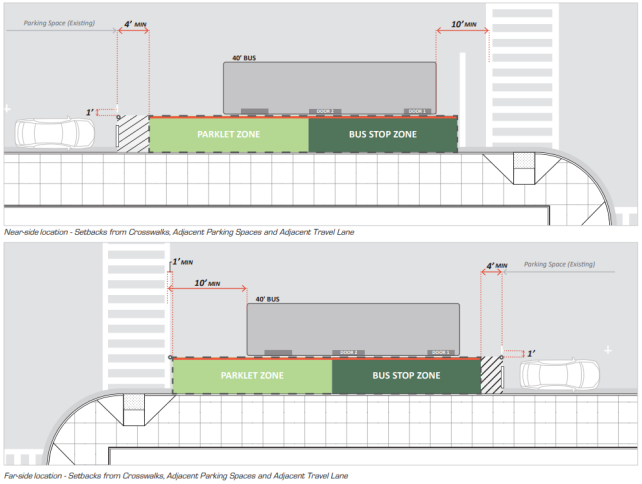

Figure 3: Combination Bus Stop Parklet, Image from AC Transit Multimodal Corridor Design Guide

ACCESSIBLE PARKING

Summary:

- A total of 6 accessible on-street parking stalls, including 1 van-accessible stall, must be provided throughout the project area;
- The exact locations of the accessible parking to be provided will be recommended as part of the City of San Bruno's draft *ADA Transition Plan*, currently under development;
- The implementation of accessible parking along the corridor may necessitate the construction of additional curb ramps that would provide wheelchair users the ability to access the sidewalk from their vehicles without encroaching in the vehicle travel lane

San Mateo Avenue has 162 on-street parking spaces and thus a minimum of 6 total accessible parking spaces must be provided along the corridor. Guidance for accessible parking within

public rights-of-way is generally defined in the "Proposed Guidelines for Pedestrian Facilities in the Public Right-of-Way" (PROWAG), prepared by the United States Access Board and dated July 26, 2011. These requirements are currently under development and have not been adopted by the Department of Justice. Once adopted they will become enforceable under Title II of the Americans with Disabilities Act.

However, in September 2014, the US Court of Appeals for the Ninth Circuit issued an opinion in *Fortyune v. City of Lomita*, which holds that local governments have an obligation under Title II of the Americans with Disabilities Act to provide accessible on-street parking spaces where on-street parking spaces are provided for the ambulatory public even though the Department of Justice has yet to adopt technical design standards for such parking. Given the limited guidance related to implementing accessible parking within the public right-of-way, the use of PROWAG guidance is recommended.

According to Section R214 of PROWAG the number of accessible stalls a project should implement are as follows "Where on-street parking is provided on the block perimeter and the parking is marked or metered, accessible parking spaces complying with R309 shall be provided in accordance with Table R214." On-street accessible parking requirements from PROWAG's Table R214 are detailed in Table 1, below.

Table R214	
Total # of Marked Parking Spaces on the Block Perimeter	Minimum Required # of Accessible Parking Spaces
1 to 25	1
26 to 50	2
51 to 75	3
76 to 100	4
101 to 150	5
151 to 200	6
201 and over	4% of total

Table 1: On-Street Accessible Parking Requirements

PROWAG guidance on the design and locations of accessible parking stalls along San Mateo Avenue that is relevant to San Mateo Avenue is as follows:

- Accessible Spaces (x02.06.1.1). Where on-street public convenience parking is provided in commercial districts and at civic facilities, accessible on-street parking spaces shall be

included in the total provided in the project or project area in accordance with proposed ADAAG Section 208.2 and shall be dispersed within the project area.[4]

- Location – Exceptions (x02.06.1.2) Accessible on-street parking shall be permitted to be combined with off-street parking if equal or greater access is provided in terms of distance from an accessible entrance, user cost and convenience. Since off-street parking in the study area is located behind the storefronts, this threshold, while subjective, would not apply to all store-front entrances.
- General (R309.1). The technical requirements for accessible on-street parking spaces are contained in R309 and adapt the technical requirements for accessible parking spaces in the 2004 ADA and ABA Accessibility Guidelines to the public right-of-way. [3]
- Narrow Sidewalks (R309.2.1). Where the adjacent sidewalk or available right-of-way is less than or equal to 4.3 meters (14 feet) wide, an access aisle is not required, but accessible parallel parking spaces must be located at the end of the block face. This applies to the length of the San Mateo Avenue corridor. [3]
- Narrow Sidewalks (R309.2.2). Vehicle lifts or ramps can be deployed on a 2.4 meter (8 foot) sidewalk if there are no obstructions. [3]
- Curb Ramps and Blended Transitions (Advisory R309.4). Parking spaces at the end of block face can be served by curb ramps or blended transitions at the pedestrian street crossing. [3]
- Van Parking Spaces (502). For every six or fraction of six parking spaces required by Section 208.2, at least one shall be a van parking space. [4]

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[4] Proposed Right of Way Guidelines from the United States Access Board (PROWAG), x02.6 Vehicular Ways and Facilities
https://www.access-board.gov/guidelines-and-standards/streets-sidewalks/public-rights-of-way/background/access-advisory-committee-final-report/x02-6-vehicular-ways-and-facilities
[3] Proposed Right of Way Guidelines from the United States Access Board (PROWAG), Chapter R3: Technical Requirements
https://www.access-board.gov/guidelines-and-standards/streets-sidewalks/public-rights-of-way/proposed-rights-of-way-guidelines/chapter-r3-technical-requirements

[4] Proposed Right of Way Guidelines from the United States Access Board (PROWAG), Chapter 5: Parking Spaces
https://www.access-board.gov/guidelines-and-standards/buildings-and-sites/about-the-ada-standards/guide-to-the-ada-standards/chapter-5-parking

- The dimension requirements for accessible spaces required for conditions along San Mateo Avenue are found in the Proposed Right of Way Guidelines from the United States Access Board (PROWAG, Section 502)[5]:
    - Car parking spaces shall be 8' wide minimum.
    - All of the general (non-accessible) parking spaces along the corridor are recommended to be within the same range of dimensions as they are presently – 19 to 21' long (depending on space available) by 8' wide.
    - Van-accessible spaces are permitted (and recommended) to be the same dimensions as general parking spaces on the corridor. An access aisle is not required due to the sidewalk being less than 14 feet wide. Where possible, van-accessible spaces are recommended to be 21' long.
    - The area of the sidewalk immediately adjacent to the on-street accessible spaces holds the same requirements for clear space as an access aisle – the 8' of sidewalk area adjacent to the on-street accessible space must be free of any obstructions.

- Identification (502.6). Accessible spaces must be identified by signs with the International Symbol of Accessibility. Signs identifying van parking spaces shall contain the designation "van accessible." Signs shall be 60 inches minimum above the finish floor or ground surface measured to the bottom of the sign.[5]

Accessible Parking Locations

Based on the total on-street supply of 162 parking spaces, a total of 6 accessible on-street parking spaces should be made available, including 1 van accessible space. This increase in accessible parking stall supply is in addition to the 23 accessible parking stalls located in the adjacent off-street public parking lots.

The exact locations of the accessible parking stalls to be installed along San Mateo Avenue will be determined via the City of San Bruno's draft ADA Transition Plan, currently under development. However, the following criteria can help in the siting of the accessible parking:

- Seek to install approximately 3 spaces on each side of San Mateo Avenue given that the street's retail destinations are located on the east and west sides of the street

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[5] Proposed Right of Way Guidelines from the United States Access Board (PROWAG), Chapter 5: General Site and Building Elements
https://www.access-board.gov/guidelines-and-standards/buildings-and-sites/about-the-ada-standards/ada-standards/chapter-5-general-site-and-building-elements
[5] Proposed Right of Way Guidelines from the United States Access Board (PROWAG), Chapter 5: Parking Spaces
https://www.access-board.gov/guidelines-and-standards/buildings-and-sites/about-the-ada-standards/guide-to-the-ada-standards/chapter-5-parking

- Provide geographical distribution of accessible parking stalls throughout the corridor
- Site the accessible spaces on the far side of the intersections
- Van parking – ensure that 8' of sidewalk area adjacent to the van-accessible parking spaces are free of obstructions for side loading.
- Endeavor to provide 8' of clear area behind the accessible parking spaces for rear loading.

One of the key challenges to siting accessible parking stalls along San Mateo Avenue is the presence of bulb outs along the corridor at each of the intersections and mid-block crossings. The bulb outs, which are built into San Mateo Avenue, prevent passengers in wheelchairs from accessing the sidewalk via a curb ramp without encroaching in the travel lane. Designing and constructing additional curb ramps onto the existing and planned bulb outs that would provide access to passengers in wheelchairs would be challenging given the presence of utility boxes, drainage inlets, fire hydrants and other utility obstructions that would be expensive to move. Additionally, the accessible spaces on San Mateo Avenue may preclude plantings, trees, bike racks and other amenities that are being considered for the sidewalks and bulb outs as part of the San Mateo Avenue Streetscape Plan. It is for these reasons that accessible parking on the side streets are advised, if potential locations can otherwise meet PROWAG guidance.

Examples of curb ramps that have been designed to provide wheelchair users with sidewalk access and that may be applicable to San Mateo Avenue are illustrated in Figures 4-5, below:

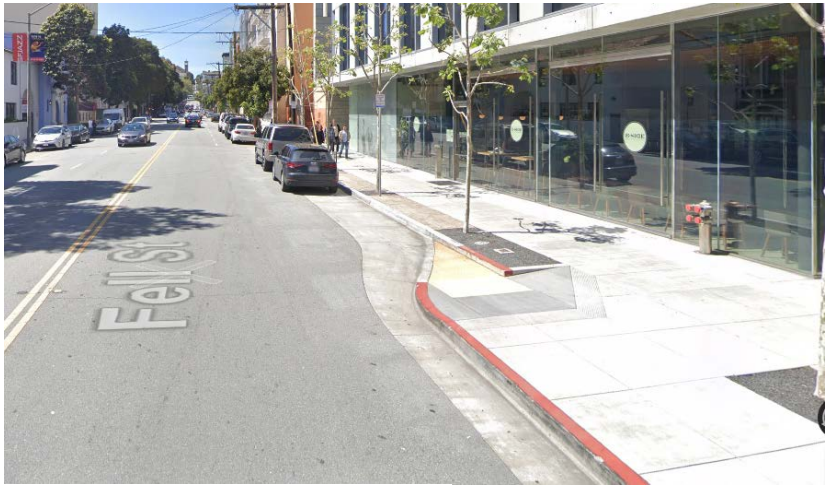

Figure 4: 201 Fell Street, San Francisco

Figure 5: 1498 Bridgeway, Sausalito

Further technical guidance on curb ramp design is provided in Section R304 of the United States Access Board guidance (https://www.access-board.gov/guidelines-and-standards/streets-sidewalks/public-rights-of-way/proposed-rights-of-way-guidelines/chapter-r3-technical-requirements).

BIKEWAY NETWORK TREATMENTS

Summary:

- Shared-lane markings (sharrows) should be placed approximately every 200'along the corridor in both directions of travel
- "Bicyclists May Use Full Lane" signs (R4-11) should be installed at each approach to the corridor

The City of San Bruno Walk 'n Bike Plan identifies San Mateo Avenue as a Class III Bike Route. Traffic speeds on the street are slow enough along the roadway so that, in the near-term, changes to this classification are not recommended, and no physical changes are required to improve bicycle safety. However, drivers should be aware that they share the roadway with people bicycling.

CAMUTCD provides the following guidance on the placement of shared-lane markings:

- If used, the Shared Lane Marking should be placed immediately after an intersection and spaced at intervals not greater than 250 feet thereafter (Section 9C.07 section 6)

The National Association of City Transportation Officials (NACTO) *Urban Bikeway Design Guide* provides the following additional guidance:

- Frequent, visible placement of markings is essential. The number of markings along a street should correspond to the difficulty bicyclists experience taking the proper travel path or position. SLMs used to bridge discontinuous bicycle facilities or along busier streets should be placed more frequently (50 to 100 feet) than along low traffic bicycle routes (up to 250 feet or more). SLMs used along low volume routes can be staggered by direction to provide markings closer together.

Given its proximity to both Caltrain and BART and the street's designation as San Bruno's Central Business District, San Mateo Avenue represents a key bicycle route in the city and a lower-stress cycling option to El Camino Real. The corridor contains daily vehicle volumes of approximately 11,000 and has high on-street parking turnover, contributing to potential conflicts between drivers and cyclists. Thus, more frequent placement of sharrows than is provided as part of MUTCD guidance is recommended.

- Shared-lane markings (sharrows) should be placed immediately after each intersection, immediately after the mid-block crosswalks and the bulb outs at the approaches to each intersection with an approximate spacing of 200 feet along the corridor in both the northbound and southbound directions. Shared lane markings assist with bicyclist lane position, reduce sidewalk bicycling, and reinforce the legitimacy of bicycle travel in the roadway. More specific to San Mateo Avenue, shared lane markings help to position cyclists in the travel lane rather than toward the bulb outs at the mid-block and intersection locations.
- At a minimum, two "Bicyclists May Use Full Lane" signs (R4-11) should be installed on the corridor. One should be visible to northbound traffic near the intersection of San Mateo Avenue and El Camino Real, and one should be visible to southbound traffic near the intersection of San Mateo Avenue and Kains Avenue. These locations represent the start of densely spaced retail activity.

PEDESTRIAN TREATMENTS

- Ensure that all crosswalks are striped with a high visibility 'Continental' crosswalk design
- Install in-road pedestrian yield signs at uncontrolled crossing locations that don't currently have them installed

- Install yield limit lines (shark teeth) at the approach to uncontrolled pedestrian crossings
- Install post-mounted diagonal arrow (W16-7P) plaque at the mid block crosswalk locations beneath existing pedestrian crossing (W11-2) warning signs
- Install stop bars at the approach to stop-controlled intersections

Traffic speeds and volumes on San Mateo Avenue are low enough, such that additional pedestrian countermeasure beyond existing and basic treatments aren't necessary. A few basic enhancements are recommended at existing crosswalks such as high-visibility markings, other striping enhancements and in-road pedestrian yield signs.

Much of the corridor already has high visibility crosswalk markings. All crosswalk locations along the corridor should be updated to California Standard Plans' "Continental" crosswalk design. The continental crosswalk markings per Caltrans standard plans (A24F) are not required but are recommended as they provide increased visibility of crossing pedestrians and have been shown to improve yielding behavior.

Artistic and creative crosswalks can be used in combination with the continental crosswalk design but must include the thick white bars to provide contrast with the surround black asphalt and pedestrians, particularly at night.

Much of the corridor already has In-road pedestrian yield signs at uncontrolled crossing locations, except for two locations: the mid-block crossing near Artichoke Joe's, and the north leg of Jenevein Avenue. Install in-street pedestrian crossing signs (R1-6) at the locations where they don't exist.

It is also recommended to install advanced yield lines at the uncontrolled crossings and advanced stop bars at the stop-controlled intersections and signalized intersections. Finally, post-mounted diagonal arrow (W116-7P) plaque at the mid-block crosswalk locations beneath existing pedestrian crossing (W11-2) warning signs should also be installed.

APPENDIX G: ANGLED PARKING EVALUATION

By: Parisi Transportation Consultants

G. ANGLED PARKING EVALUATION

Parisi TRANSPORTATION CONSULTING

Memo

To: Jacob Tobias; WRT Design, Rivka Weinstock; WRT Design

From: Patrick Golier, Jasmine Stitt; Parisi Transportation Consulting

Date: September 13, 2019

Subject: Angled Parking Analysis for San Mateo Avenue

This memorandum describes the results of a technical study to consider the potential conversion of on-street parallel to angled parking along San Mateo Avenue, from El Camino Real to Huntington Avenue as part of the San Mateo Avenue Streetscape Plan.

SUMMARY

Parisi Transportation Consulting conducted an analysis regarding the feasibility of converting on-street parking along the corridor from parallel to a 60- and 45-degree configuration. The result of the analysis indicates that the conversion is not recommended due to the resulting narrow roadway width. More specifically, the implications of the reduced roadway width include an inability to:

- Meet San Mateo County Fire Code;
- Meet City of San Bruno Municipal Code Section 12.100.080 *Design Standards for Parking Facilities*;
- Maintain two travel lanes along the corridor; and
- Maintain on-street loading activity as a stopped vehicle or truck would block other vehicles

SIXTY-DEGREE PARKING

Parisi considered the installation of sixty-degree parking on one side of San Mateo Avenue from Kains Avenue to El Camino Real. The road width of San Mateo Avenue is 43-feet. The implications of this parking configuration are as follows:

- The width of the unobstructed roadway width would be 14-feet assuming an 8-foot-wide parallel parking configuration on the opposite side of the street, from approximately 27-feet under existing conditions, which would provide an insufficient drive aisle width to support parallel parking on the opposite side of the street. A 14-foot drive aisle width

does not provide an adequate amount of maneuvering room for vehicles to back out of an angled parking space and does not meet San Bruno's parking code requirements as depicted in Municipal Code Section 12.100.080.

- The San Mateo County Fire Code states that "fire apparatus access shall have an unobstructed road width of at least 20 feet and vertical clearance of 13 feet 6 inches…Fire apparatus shall not be obstructed in any manner including vehicle parking or vegetation intrusion." Under a 60-degree angled parking design, San Mateo Avenue would provide 14-foot unobstructed road width. In residential areas with low parking use this may be less of an issue for the Fire Department. However, since the parking on this street is well-used and the business uses include restaurants which could carry a higher risk of fire, parking conversion is unlikely to be approved by the San Bruno Fire Department;
- To meet fire clear-width requirements, parallel parking and bulb outs on the opposite side of the street from the angled parking would need to be removed. This would result in a total of 22-feet of roadway width. In addition, while this road width would allow for sufficient drive aisle width to facilitate angled parking on one side of the street, two-way traffic would be precluded for an insufficient drive aisle width for two-way circulation. A minimum of 24-feet of drive aisle width for two-way traffic is recommended to allow drivers backing out of angled parking spaces sufficient maneuvering room without conflicting with moving traffic in the opposite direction;
- Circulation on the street would be required to change from two-way to one-way given the narrow drive aisle width. This would also require the rerouting of the SamTrans 141 line and bicycle circulation in one direction. A circulation scheme through the neighborhood would need to be designed that provides intuitive vehicular and bicycle routing for traffic in the opposite direction of the one-way travel along San Mateo Avenue. This would also result in an increase in traffic volumes on adjacent residential streets;
- Removal of parking on the opposite side of the street would result in a total parking supply of 151 spaces. If the existing bulb outs from the side of the street with the angled parking were also removed in addition to the removal of the parallel parking, total on-street parking supply would be approximately 162.
- The City of San Bruno's Municipal Code Section 12.100.080 requires drive aisle widths for on-street angled parking to be 28 feet and stall depth to be 19.8 feet. The code, as currently written, would preclude the ability to fit 60-degree angle parking on San Mateo Avenue, even with the removal of on-street parking from the opposite side of the street, removal of all bulb outs, and the conversion of the roadway from two-way to one-way.

FORTY-FIVE DEGREE PARKING

Parisi also assessed the implications of a forty-five-degree parking scheme on San Mateo Avenue:

- The width of the remaining travel lanes would be 16-feet, from approximately 27-feet under existing conditions, assuming an 8-foot-wide parallel parking on the opposite side of the street;
- Circulation would be required to change from two-way to one-way;
- Parallel parking would need to be removed from one side of the street to accommodate the angled parking;
- The width of the one-way vehicle travel lane along the roadway would be 24-feet, which would not meet on-street requirements which require an aisle width between stall lines of 28 feet; and
- Total on-street parking supply after the removal of parallel parking from the opposite side of the street would decrease to approximately 115 along the corridor. If the existing bulb outs on the same side of the street as the angled parking were also removed in addition to the removal of the parallel parking, total on-street parking supply would decrease to 126.
- The City of San Bruno's parking codes for on-street parking require drive aisle widths to be 28 feet and stall depth to be 18.7 feet would preclude the ability to fit 45-degree angle parking on San Mateo Avenue.

DRIVE AISLE WIDTH

ON-STREET REQUIREMENTS

Drive aisles allow for vehicle circulation and provide sufficient area for motorists to back out of parking stalls. The City of San Bruno requires an additional 12-feet to the drive aisle width for 60-degree and an additional 16-feet for 45-degree parking from their off-street drive aisle regulations. The results of this drive aisle width requirements are detailed below in Figure 1 from the San Bruno Municipal Code Section 12.100.080 and Table 1, below. These drive aisle requirements would preclude the ability to fit any angled parking stalls on San Mateo Avenue, which has a curb to curb width of 43-feet.

Angled Parking Analysis for San Mateo Avenue

FIGURE 1
PARKING DIMENSION TABLE

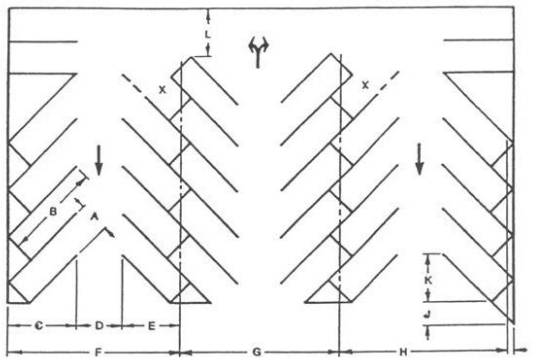

Table 1: San Mateo's Standards for Aisle Width for On-Street and Off-Street Parking Stalls

Dimension	Diagram	45 Degree		60 Degree	
		Off-Street	On-Street	Off-Street	On-Street
Stall Depth	C	18.70	18.70	19.80	19.80
Aisle Width Between Stall Lines	D	12.00	28.00	16.00	28.00
For on-street parking use the above dimensions, adding 16 feet to dimension "D" for 45-degree parking and 12 feet for 60-degree parking					

APPENDIX H: NOTES FROM COMMUNITY ENGAGEMENT AND STAKEHOLDER MEETINGS

By: WRT Design

H. NOTES FROM COMMUNITY ENGAGEMENT AND STAKEHOLDER MEETINGS

Public Engagement Summary
March 12, 2019 - 'Walk'shop – a walking tour, Community Workshop #1
March 28, 2019 - Stakeholder Meeting #1
March 30, 2019 - Drop-in Community Workshop #2
March 11 - April 10, 2019 – Survey. We received 92 responses during this time.
May 7, 2019 - Planning Commission Meeting #1
May 8, 2019 - Stakeholder meeting #2
May 15, 2019 - Parks and Recreation Meeting
May 16, 2019- Arts Commission Meeting
May 22, 2019 - Community Meeting #3
July 16, 2019 - Planning Commission Meeting #2

Summary of Comments from All Community Engagement Meetings:

General Aesthetics:

- The spirit and texture of the design, including the transportation theme and the light, playful aesthetic, feels authentic and fitting for the site (Planning Commission #1).
- Agree with simplified design, with key unique features (Stakeholder #2).
- Ensure that the aesthetic intent is elegant and not 'fancy' or Victorian (Stakeholder #2).
- Put something on the avenue so that everybody likes to come! (CW #2: Bulb out board)
- Now desolate, dreary (CW #1)
- The charm is missing here - look at Broadway in Burlingame – should be a place to linger. (CW #1)
- Old san Bruno, cool, diverse, should encourage people to be here. (CW #1)
- Eclectic/Interesting/Artistic (CW #1)
- Family/community/diversity/yum/charm/potential/revitalized/we have roots/city with a heart. (CW #1)
- San Mateo Avenue is the heart of our community/Inclusive. (CW #1)
- "the heart of san Bruno is the people" (CW #2 Prioritization Exercise)
- Small town charm (CW #2 Character Concepts Board)
- Artistic/Unique, if done well (CW #2 Character Concepts Board)
- To red bench - artistic, but maybe uncomfortable (CW #2 Character Concepts Board)
- Keep it simple – not too cluttered! (CW #2 Character Concepts Board)
- Keep it approachable (CW #2 Character Concepts Board)
- Like modern, but buildings aren't modern – prefer simple (CW #2 Character Concepts Board)
- Airport elements, or general transportation (railroad history then airport etc) (SM #1)

- Historic figures, murals of people who had a part in building san Bruno (SM #1)
- Artistic and unique (SM #1)
- Should feel more modern (SM #1)
- Classic Modern/Contemporary (SM #1)
- Charm, highlight multi-cultural (SM #1)
- Working Class (SM #1)

Furnishing and Paving:

- Choose a different trash can without the grass theme (Planning Commission #1 and Community Meeting #3).
- Ensure trash can has a cover plate (Stakeholder Meeting #2).
- Trash can looks small; ensure it works with the requirements of Recology (i.e. large enough, etc.) (Arts Commission).
- Look into solar compactor trash cans (Arts Commission).
- Custom curved benches aren't working as shown due to tripping hazard and lack of seating. They should be reconceptualized (Planning Commission #1).
- Paving design could include concrete with unit paver banding for the tree amenity strip (Stakeholder Meeting #2).
- In streetscape plan, could include both unit pavers and concrete, and indicate positives and negatives (Stakeholder Meeting #2).
- Suggestion that existing sidewalks and pavers could be painted to provide visual continuity at a lower cost than replacing all pavements (Community Meeting #3).
- Wheelchair ramps (CW #2: Table runner map)
- Raised crosswalks, especially mid-block (CW #2: Greening Opportunities board)
- Wheelchair access- no pedestal tables (CW #2: Activation Opportunities board)
- Need ADA access to businesses. (CW #1)
- Outdoor seating should generally be near the building not on the bulb out, though it may work in certain places. (CW #1)
- It's too cold to eat outdoors, too windy, maybe it would work in the building recesses. (CW #1)
- Outside seating is great, even if it's cold – can have heaters. (CW #1)
- People do sit and stop along the avenue where they can. (CW #1)
- The existing seating element/benches are ugly and not maintained well – the vegetation is overgrown, so it's hard to sit there. (CW #1)
- Provide benches for storefronts – provide seating. (CW #1)
- New lights, trash cans, bins – recycle-compost. (CW #1)
- Water bottle filler, water fountain, bike racks, fountains for dogs, signage, trash bags. (CW #1)
- Keep newspaper racks. (CW #1)
- More outside seating!! (CW #2: Activation Opportunities board)
- No wood, more concrete to avoid vandalism (CW #2: Activation Opportunities board)
- Ledge seating in the angular building setbacks (CW #2: Activation Opportunities board)

- Need more seating for elderly - to take breaks walking from one end to the other (CW #2 Prioritization Exercise)
- Welch family/Marshall family - benches named/paid for by families of former city leaders (CW #2 Prioritization Exercise)
- Need a better paving design than the current one, because now, if a spot on the distinctive strip breaks, they fix it with regular concrete and it looks ugly. (CW #1)
- Uneven, patchy sidewalk. Need a complete replacement. (CW #1)

Planting, Green Infrastructure and Drainage:

- Excited about the planted bulb outs and trees (Planning Commission #1).
- Place trees so that they don't interfere with opening car doors (Stakeholder Meeting #2).
- Look at drainage issues and bulb outs (Stakeholder Meeting #2).
- Don't propose flow-through planters because they collect trash (Stakeholder Meeting #2).
- Look at raised crosswalks and drainage (Stakeholder Meeting #2).
- Greening the bulb outs is a great idea (Arts Commission).
- Ensure that the right tree species is recommended to be successful on this corridor (Arts Commission).
- Concerned about utility conflict with trees (Community Meeting #3).
- Get rid of the pots – they're ugly! Also, drivers can't see people crossing the street behind the pots – bad for visibility. (CW #1)
- The street should be lined with trees! There used to be trees here but they weren't doing well, so they removed them. (CW #1)
- Make sure the tree species work well for visibility. (CW #1)
- More trees! (CW #1)
- Green infrastructure. yes! (CW #1)
- Trees. Yes! (CW #1)
- Ceremonty/target center – they did a nice job with the landscaping. (CW #1)
- Anywhere where there is too much street, we should reclaim. (CW #1)
- Need to plant the right species so that they don't pull out the sidewalk. (SM #1)
- More trees!! (CW #2: Table runner map)
- You could add some flowers, trees, etc. (CW #2: Table runner map)
- Plant trees that are native – the existing list is not native (CW #2: Table runner map)
- Like option #3 (removing bulb outs) (CW #2: Greening Opportunities board)
- Trees block our wheelchair van ramp – access needed - our ramp comes out on the right side of our van (CW #2: Greening Opportunities board)
- Big trees, wind tolerant – see San Carlos Ave in San Carlos (CW #2: Greening Opportunities board)
- Bring back the trees (CW #2: Greening Opportunities board)
- Need a wind break (CW #2 Prioritization Exercise)
- Please no bulb-outs between Kains ave and Caltrain station! – bicycle hazard. (CW #2: Greening Opportunities board)
- Could have parklet – an occupiable space instead of a planter (CW #1)

- Stormwater treatment will be important for future (CW #2: Bulb out board)
- Like green and bench, concerned about constraining sidewalk width (CW #2: Bulb out board)
- Like balance of planting and seating (CW #2: Bulb out board)

Lighting:

- Should have fluidity of lighting along the corridor: lighting should go along the street, or even over the street, if possible (Planning Commission #1).
- It's dark at night; need to do a photometric analysis. Attractive, nighttime lighting should be incorporated along corridor, paseos and side streets (Stakeholder Meeting #2 and Arts Commission).
- In-ground lighting will be difficult for maintenance (Stakeholder Meeting #2).
- Should have consistency in the light poles (Stakeholder Meeting #2).
- It's dark at night, need to lighten up the street, neon at night. (CW #1)
- Need lighting at night. (CW #1)
- Current street lights are ugly, historic looking, don't give a lot of light. (CW #1)
- Lights hanging from one pole to another (CW #2 Prioritization Exercise)

Bicycle infrastructure:

- Biking is important and in general plan; ensure bike infrastructure opportunities (Planning Commission #1).
- Sharrows would be good here (Stakeholder Meeting #2).

Centennial Plaza:

- Centennial Plaza is important to develop. (Planning Commission #1).
- It would be nice to include quiet, shaded seating opportunities (Planning Commission #1)
- Instead of a stage, have an open flex space with power access for different types of events (Stakeholder Meeting #2).
- Do not need to keep fountain (Stakeholder Meeting #2).
- Ideas for the plaza could include: children's play area, bocce ball, a pergola with vines, art sales, artistic play structure, a usable urban space, pop-up amenities (Arts Commission).
- Existing art is temporary; remove and save the art (Arts Commission).
- It's useless now because it's gated off. People do sit on those two benches though. Should open it up so that you can sit everywhere – (there is supposedly a contamination issue). (CW #1)
- Bioswale – could get funding for this, for beautification. (CW #1)
- Want to use this space, is a nice wind shelter. (CW #1)
- It's closed off because the center is just loose soil on old basement – not structurally sound. (CW #1)
- Pergola for shade (CW #2: Table runner map)
- Should be a community garden!! (CW #2: Table runner map)

- Improve the park – should be inviting, something for kids, it does get windy (CW #2: Table runner map)
- Simple stage for music opportunities (CW #2: Table runner map)
- 'the non-park park' (SM #1)
- Art there doesn't fit with the character of the rest of the street. (SM #1)
- Could be an event space – look at Downtown Half Moon Bay (well lit, stage, benches, restaurants – hold concerts there) (SM #1)

Posy Park:

- A Posy Park redesign should ensure visibility and include trees (Planning Commission #1).
- Could have a farmer's market here (Planning Commission #1).
- Ensure tensile structures can stand up to wind (Planning Commission #1).
- Ensure visibility and safety. Perhaps reorient the benches so that they are perpendicular to the street. Perhaps include a blue emergency beacon phone (Stakeholder Meeting #2).
- Can include café seating and a coffee cart (Stakeholder Meeting #2).
- Cigarette butts an issue here; install a cigarette receptacle (Arts Commission).
- Seating should not encourage homeless (Arts Commission).
- Install lighting at the mosaics (Stakeholder Meeting #2).
- Do not install lighting at the mosaics; they are fading (Arts Commission).
- Tent structures are good, as they do not take away from artwork, if they can be kept clean and will stand up to the wind (Art Commission).
- Like the idea of a shade shelter at Posy Park (Community Meeting #3).
- Would like to see signage or other means of identifying Posy Park – most people don't know that name (Community Meeting #3).
- Will benches be utilized? Moveable tables and chairs could be an option (Parks and Recreation Commission).
- Make a place for trucks to park. Can do Off the Grid food trucks; useful for riders and the community (Parks and Recreation Commission).
- Add an area for skateboarding (Parks and Recreation Commission).
- Posy Park is underutilized; looks like a plaza (Parks and Recreation Commission).
- Park could have wind issues (Parks and Recreation Commission).
- Make it more friendly, add more grass. It is currently very cold (Parks and Recreation Commission).
- Dog park is not recommended (Parks Commission).
- In favor of landscape instead of the fountain. (CW #1)
- The white walls are boring. (CW #1)
- Too much concrete, ugly (SM #1)
- Redevelopment happening where Huntington meets San Bruno across from Posy Park (American Legion and Huntington Liquor Grocery) – going to be residential units with café and convenience store at ground floor. (SM #1)
- Too much concrete, more green in this park (CW #2: Table runner map)

Paseos:

- Paseos could be a place – murals, lighting, tables and chairs, chessboards, heaters, bocce ball, (plaza at Citibank also a good place for bocce ball). (CW #1)

- Is less windy here, so many better for seating? (CW #1)
- Stores usually have back entrances. (CW #1)
- Should be parking signage, make people aware, lighting, inviting, parking management. (CW #1)
- Could add plants, green walls, decorative light poles, planters, baskets, murals. (CW #1)

Wayfinding and Branding:

- The gateways need to stand up to the wind (Planning Commission #1).
- Could have signage that shows the medallions of all the organizations at Caltrain overpass(Stakeholder #2).
- Should have a marquee somewhere that shows events (the current one on El Camino Real is outdated, some thought it was charming, but the content is good) (Arts Commission).
- Concerned about 'The Avenue' branding. It speaks to the street, but not to the culture. Also concerned about redundancy of that name with Burlingame (Community Meeting #3, Arts Commission and Parks and Recreation Commission).
- A heart sculpture, creative gateway (not in a hokey way) (CW #1)
- Need a noted entrance on both ends; doesn't have to be an arch. Could use the walls (where the arches were supposed to be) for something. (CW #1)
- Maybe have store directories in the paseos. (CW #1)
- The current situation at El Camino real could be called 'the electric transformer gateway' because of all of the electric transformers – ugly, should remove. (CW #1)
- Need Wayfinding, not gateway (CW #2 Prioritization Exercise)
- Add one sign at Hazel Ave and Crystal Springs Ave, at City Park (CW #2 Wayfinding and Gateway Opportunities)
- Add one sign at Jenevein Ave and San Mateo Ave (CW #2 Wayfinding and Gateway Opportunities)

Art:

- Paseos are a great opportunity for art (Stakeholder Meeting #2 and Arts Commission)
- Could have an art competition: different artists can design different paseos. (Stakeholder Meeting #2).
- Art commission can help support this initiative (Stakeholder Meeting #2).
- Ensure murals are not 'bad art' (Palo Alto Murals are great) (Stakeholder Meeting #2).
- City should coordinate with property owners to see what can be done in Paseos (Stakeholder Meeting #2).
- Proposed artwork strategy is successful: having artwork in the paseos, posy and centennial park, and not along the street. (Arts Commission)
- Painted crosswalks are a good idea (Arts Commission).
- Don't like the aesthetics of the piano (Arts Commission).
- Could have murals on the storm drains, like City of Thornton (Arts Commission).

- Not enough art. (CW #1)
- The art that's out here is very old fashioned – the fountain and murals - it dates our downtown, but I know that some people do really like it. (CW #1)

Programming:

- Include street vendors, art shows, first Fridays, family friendly downtown, scavenger hunts (like San Jose downtown doors) (Planning Commission #1).
- Bring artwork along the street, children's competitions, farmer's markets (Stakeholder Meeting #2).
- closing off streets from vehicular traffic once a month.
- Encouraging activation by young people would be a good goal (Community Meeting #3).
- Should attract businesses and address these (Parks and Recreation Commission).
- Dog friendly downtown (CW #2: Activation Opportunities board)
- Dog friendly downtown! (CW #2: Activation Opportunities board)
- Dog potty stations w/ bags (CW #2: Activation Opportunities board)
- Could do 'Sunday Streets' where you close of the corridor for pedestrians only. (CW #1)
- Vibo Music (music store that also has performances) could have their performances outdoors. (CW #1)
- Could fundraise for the street by having sidewalk pavers of trees named for community members. (CW #1)
- There was a farmer's market here but it wasn't successful (wasn't run well), but people were excited about it. (CW #1)
- Farmer's Market (CW #2: Existing Corridor Character)
- Farmer's market: use parks and plaza spaces instead of closing the street (CW #2: Activation Opportunities board)
- Weekend events (CW #2: Activation Opportunities board)
- Music (CW #2 Prioritization Exercise)

Citibank Plaza:

- Citibank plaza is another open space opportunity (Planning Commission #1).

Parking and Loading:

- Should be sensitive to parking, and ensure that the design does not reduce parking (Stakeholder Meeting #2, Community Meeting #3). (WRT has responded that SamTrans bus accessibility requirements will remove 3 parking spots).
- City should coordinate with individual business owners to assess whether white and yellow striped zones are necessary and where (Stakeholder Meeting #2).
- Children from the swim school walk from the rear street – people park at Artichoke Joe's lot (Parks and Recreation Commission).
- There is no parking (Parks and Recreation Commission).
- More blue zones for handicapped (CW #2: Table runner map)

- Public parking space (CW #2: Table runner map)
- Add school-zone type signage near swim school (CW #2: Greening Opportunities board)
- Loading zone at swim school (CW #2: Greening Opportunities board)
- Everyone wants slower traffic, less cars. There's a lot of double parking, loading, creates traffic. (CW #1)
- The planters took parking away. (CW #1)
- Agree with diagonal parking, but don't want to lose sidewalk width – maybe look into making it a one way street? (CW #1)

Implementation and Maintenance:

- A piecemeal approach may work well, as opposed to trying to do all of the improvements in one go. Perhaps include a suggestion that landowners will have to pay into this, in addition to other sources. It will incentivize movement and responsibility from the landowners (Stakeholder #2).
- Need to consider maintenance costs and needs (Community Meeting #3).
- What is the status of the budget? (Community Meeting #3).
- Street improvements should be prioritized over Posy Park (Parks Commission).
- Who will maintain the landscape? (CW #2: Bulb out board)
- Who will maintain/take responsibility for the trees? (SM #1)
- Who will clean garbage? (CW #2: Bulb out board)
- Clean up the floors, trash cans, etc. (CW #2 Wayfinding and Gateway Opportunities)
- Maintenance is the most important element. (SM #1)
- Fewer, simpler elements that are well maintained is better than (SM #1)
- The city needs to maintain any planting that goes in. (The existing planters are being abused and not taken care of.) (SM #1)
- Maybe business owners should look into making a BID or Downtown Business association. (SM #1)
- Angus Avenue's sidewalk is still broken. (SM #1)
- The property owners here are required to fix the sidewalk. (SM #1)
- Once this streetscape is designed, the onus is on the city to really on the city to enforce it. (SM #1)
- If they're going to repave, think about maintenance – cost of repaving and how to make sure it looks nice when they have to repave for utility replacements etc. (SM #1)
- Need to wash the sidewalk. (CW #1)
- City should confirm what is most reasonable budget for building + maintenance (SM #1)
- The 'parking lieu fee' that comes from the 400 units on the corner of San Mateo Avenue and El Camino Real - where does that money go? Can it go into the street redesign? (SM #1)

Outside scope of this project:

- Absentee owners are a problem here. They are not maintaining them, and they are keeping storefronts vacant (Planning Commission #1).
- Ensure that something is in the building setbacks so that they are not used for encampment/trash (Stakeholder #2).
- Enforce trash clean up in front of stores, and/or provide trash enclosures (Stakeholder #2).
- Parking is still a major issue. If Caltrain builds a parking lot, it will relieve a lot of the parking issues (Stakeholder #2).
- Just by painting the buildings, could really help upgrade the downtown (like in Los Altos and Los Gatos, we can dictate the color of the buildings) (Stakeholder Meeting #2).
- Car Repair shop across from Posy Park is an eyesore (Community Meeting #3).
- Need to enforce ordinances to ensure that businesses keep up with maintenance (Community Meeting #3).
- Parking program for business owners (CW #2: Table runner map)
- Build a parking structure - then would support removing street parking for added green (CW #2: Greening Opportunities board)
- On Angus Avenue, Mason, and San Mateo, after 6 PM, cars are allowed to park on Mason (and Angus?), and it creates tons of traffic jams on corner of Angus and San Mateo. (CW #1)
- Caltrain parking costs money, but streets are free, so it backs up. (CW #1)
- Police Substation (CW #2: Table runner map)
- Police on bike 2x a day would make a big difference (CW #2: Table runner map)
- Less littering (CW #2: Table runner map)
- We could use a wider range from low cost to upscale restaurants (CW #1)
- Should be restaurants/entertainment here. Would be great to have more art/cultural uses/amenities, more social and community oriented places to gather, seems to be working well here. (CW #1)
- NW corner of Kains Ave + San Mateo should be a café, not an auto shop. (CW #1)
- Vacancies – one on nears Kains Ave, lease is too high. Maybe the city needs to do something with the vacant space while it's vacant? (CW #1)
- Is signage on buildings a part of this scope? In Bay Hill they have a standard and it looks good. Question about allowed building height on the street – 3-4 story buildings are allowed. (CW #1)
- The existing architecture is all cut up – it should feel continuous. (CW #1)
- Lack of transparency to the street – need a toolkit. Guide for businesses to have a good retail environment. (CW #1)
- There are a lot of businesses that remain closed/ closed blinds - is there zoning/code enforcement that can be done? (SM #1)
- More Colorful buildings – the buildings look dull (CW #2: Table runner map)
- Clean up store windows that are full of junk (CW #2: Table runner map)
- Paint buildings – pick out 3-4 tasteful colors (CW #2: Table runner map)
- Businesses should open their windows (CW #2: Existing Corridor Character)
- More poke stop! (CW #2: Existing Corridor Character)

Dots exercise from 3/30.19 Community Workshop

Existing Corridor Character
Dot on rotary clock, newell's bar, starbucks sidewalk seating, and bunch of dots on 'more poke' and 'farmer's market' (both write ins)

Greening Opportunities
Most dots on the third tree placement option (remove bulb-outs), dots on the precedent image of the tree lines corridor

Bulb Out Opportunities
Most dots went to the bulb-out option that balances planting and seating/hardscape amenities
Option 3: (Combined planting + seating) – 13
Option 2: (Maximize hardscape) - 8
Option 1: (Maximize planting) - 7
Small mid-block bulb-out concept - 7

Activation Opportunities
Outdoor Café seating: People most liked the wood slat aesthetic (fig and sparrow), but were generally in favor of outdoor café seating
Paseo activation: People most liked the arbor/planting idea and the art/mural idea, but were generally in favor of activated paseos
Night Lighting: people seemed to like all of the ideas – but most dots went to the lighted spheres
Parklets: people most liked a parklet that incorporates planting

Character Concepts:
Most dots were in the "artistic, unique" category, but there was also an emphasis on simple and uncluttered design and people put dots on a bunch of the "simple, modern" images. In the "traditional" category: The image of Burlingame's paving got many dots as well.

Wayfinding and Gateway:
Gateway: Most dots were placed on pleasanthill's over the street gateway – one person noted that they liked the fact that it was over the street.
Wayfinding: Most dots on the Des Moines Iowa downtown wayfinding signage - people liked simple clear graphics, with some people liking the more craft/artistic like signage like Castro valley. One person wrote, that they need wayfinding, not a gateway
Should have gateway on Kains leading to downtown, (ppl would be coming from El Camino and Huntington) Kains is the main road from the library and city hall (Survey)

Prioritization exercise
31 **trees and planting**
27 **pedestrian safety features**
22 **seating/outdoor dining**
21 wayfinding and gateway markers
21 art
17 Special paving and custom elements
15 shade and comfort
7 stormwater management
5 bike parking

Survey: results as of 4/2/19 – 64 respondents

1. What brings you to San Mateo Avenue? (Please check all that apply)

Most respondents Live in the area, and eat and drink there. Second most do shopping/errands and drive on it to go elsewhere.
47 – eat and drink
40 - live in the area
26 – shopping/errands
25 – drive on it to go elsewhere
12 – strolling and exercise
10- take Caltrain
3 – other
3 – I own a business on san mateo ave
3- I work on san mateo ave

2. How often do you spend time on San Mateo Avenue?

Most respondents are there about once a week, second most are there once a month. Third, every day.

3. Which category below includes your age?

80 % of respondents are either 30-50 or 50-70.

4. What do you feel would be the most important to improve for the future of San Mateo Avenue? Please rank each of the following elements in the order of importance from 1 to 6. (1 is the most important and 6 is the least important):

Successful businesses ranked highest, then safety and beauty/character/identity.

4.81 – successful businesses
4.18 – beauty/character/identity
4.10- Safety
3.22- socially engaging and inclusive
2.44- comfort
2.43-Environemtally sustainable

5. What elements do you feel are most important to you?
Please rank each of the following elements in the order of importance from 1 to 9.
(1 is the most important and 9 is the least important):

Car parking received the most importance, with trees and planting a close second. Lighting, came in third, with seating/outdoor dining and pedestrian safety features very close after that.

6.62 Car Parking

6.26 Trees and planting
6.13 Lighting
5.68 seating/outdoor dining
5.61 pedestrian safety features
4.71 Art
4.03 Special Paving
3.63 Wayfinding Signage
2.72 Bike Parking

6. What do you like most about San Mateo Avenue?

Diversity and quality of stores and restaurants: Locally owned business, good food, good selection, west coast café, culturally diverse, tandy leather, restaurants, variety, interesting, diversity, kid specialty shops, eclectic, affordable food,

Pedestrian amenities: wide sidewalks, stop signs at every block, close to public transport, walking distance from my home, close by, proximity, walkability, concentration of businesses, human-scale, contrasts well with El Camino real's speed and car centric character, generally safe,

Charm/ unique character: quaint, architecture/character of older buildings, history of area, small town feel, character, hidden gem, not overly crowded, small town feel

Free parking, free time limited parking

Potential: essentially a blank slate, potential destination for the city

7. What general attributes would you most like to change about San Mateo Avenue? Any additional comments?

Businesses that do not appeal to me/ need new and different businesses: strive for economic sustainability, need more than restaurants, need better businesses, some recognizable businesses, some big name businesses, look at Burlingame and Grand Ave – better businesses, businesses need to be updated, tanforan mall took away a lot of the business, now there are too many restaurants, need businesses that are not restaurants, city should work with new businesses to help them get started and give more support, city needs a new business program, need more successful businesses, too many empty businesses, often in disrepair, general facades/appearance need upgrade, and uniformity, update architecture, too many Chinese restaurants, need high caliber restaurants, do not require businesses to install expensive signage, require businesses to install nice signage, stores look cheap and junky, need better stores, need more mainstream businesses, more variety, more big name stores, like trader joes and jamba juice will help bring more people and help smaller businesses. More family friendly, better stores. A bookstore! No papered storefronts.

Run down: Dirty, embarrassing, Needs to be more attractive, bleak, look at Burlingame – needs to be more pleasing and inviting, look at Burlingame and Grand Ave - looks better., clean it up, it's an eyesore! Avenue is dirty, not aesthetically pleasing, look and feel needs to be updated, neglected, unpleasant, need to better hide garbage, grease clutter from businesses, get people to stop feeding birds behind Hon Lin, get rid of birds and bird

poop on sidewalks and parking lots, tear it all down and start over, add street lights or hanging baskets to encourage people to turn off el camino real, area looks depressed, more modern looking buildings, more conformity in look. Should be guidelines for storefront signage, paint color, need road repaving, looks old, outdated, dumpy, needs to look better, having streets cleaned, less vacancies, cleanliness, dilapidated businesses

Ped/bike safety: safer for moms with kids to walk, more ped friendly, bike lanes for Huntington and San Bruno Ave, more safety, keep bikes off sidewalks, not ped friendly (almost get hit by cars crossing the street), more walkable, crosswalk lights, bring public transport from hills

Parking is difficult: can't express this enough, need more parking, more parking is needed, need more free parking, need parking meters and a parking structure, code enforcement, not convenient to park, monthly parking structure or lot, find a way to make parking for 400 block easier, parking is a nightmare, parking can be challenging, parking parking parking, citizens have been asking about this for ages, charge for parking, Everyone knows more parking is needed. It's why so few people go downtown. Stop pretending it's not the main problem!! Better parking. Need to deal with double parking

Aesthetics/ Street furniture/outdoor activity: used to have produce outside across from starbucks but that went away, need more curb appeal, more outdoor dining, make it a street people would want to stroll on, more outdoor seating, add nice pavers, more art, plants, more places to sit, need fresh modern appearance, improved surfaces and textures, Finish centennial plaza, improve centennial plaza – could be a gem! More outdoor seating

Wayfinding/Signage: Should have gateway on Kains leading to dowtown, (ppl would be coming from El Camino and Huntington), updated entry pt sign off camino real, signs directing cars to lots

Wider audience: would like to see downtown bring more visitors from all of the peninsula

Safety: people drive unsafely down the street, police station downtown, more lighting and safety, at night, seems unsafe and dark

Ecological/Planting- more trees, strive for ecological sustainability, need trees, planting, there's scarce greenery, taller more substantial trees, more/larger trees,

Activation/ Marketing: A Website page that describes the different restaurant's cuisines and perhaps weekly/monthly specials. It feels very unwelcoming to me as a new resident. 8. Create some events like Halloween trick or treating to bring families to the street. Or can you tie something to Celebrate Independence Day and have a street party? Or perhaps a "Back-to-School" shopping alternative to the mall. Perhaps you can create some special dining experiences for parents who visit some of the several businesses focused on children? OR maybe a special shopping event or experience for senior citizens. Most of them would likely remember life before Tanforan mall and might enjoy shopping along San Mateo Ave.