August 16, 2017

To: El Camino Real Corridor Plan (ECR Plan) Advisory Committee members
From: Rosemarie Zulueta, Acting Principal Planner
Re: ECR Plan Multimodal Access and Circulation Strategies
ECRPAC Meeting #5, August 24, 2017

The ECR Plan Multimodal Access and Circulation Strategies document has been prepared with the intent of providing innovative approaches to transportation and circulation along the Corridor. This document contains preliminary design concepts and recommendations prepared by Nelson\Nygaard (our circulation and urban design consultant) based on existing City goals and policies and the input received from the community through the various workshops and previous ECRPAC meetings and staff.

Please review the ECR Plan Multimodal Access and Circulation Strategies prior to our meeting on August 24th. Magnus Barber of Nelson\Nygaard will present the design concepts and strategies at our meeting. By the end of our meeting, staff and the consultant team hope to obtain your feedback on the strategies and concepts based on the multimodal and safety goals described in the Draft Vision Statement.

The ECR Plan is a long-range planning policy document, looking out to 20-30 years. Keep in mind that many of the ideas presented may not be immediately implementable and may be more long-term solutions, possibly beyond the life of the plan. Many of the design concepts will require more in-depth analysis (including review by other agencies, such as Caltrans) to determine the feasibility of precise application. Improvements to the streetscape or the roadway will therefore occur gradually and opportunistically, depending on City priorities, availability of funding opportunities and as sites redevelop.

I look forward to another comprehensive discussion with all of you.

EL CAMINO REAL CORRIDOR SPECIFIC PLAN

MULTIMODAL ACCESS AND CONNECTIVITY STRATEGIES

August 2017

NELSON NYGAARD

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1 MULTIMODAL CIRCULATION

This chapter provides pedestrian-friendly guidelines, design elements and network definition for multimodal circulation within the specific plan area. The guidelines are consistent with appropriate design documents published by the California Department of Transportation (Caltrans), Institute of Transportation Engineers (ITE), and the National Association of City Transportation Officials (NACTO), and the Manual on Uniform Traffic Control Devices (MUTCD).1

MULTIMODAL PRIORITIES

In order to guide the street design within the plan area, modal priorities should be considered, including the flow and safety for pedestrians, bicycles, transit, and motor vehicles. Sunnyvale's newly updated General Plan provides new direction on priorities in street design.

Sunnyvale General Plan, Land Use and Circulation Element, Policy 24:

Promote modes of travel and actions that provide safe access to city streets and reduce single-occupant vehicle trips and trip lengths locally and regionally.

The order of consideration of transportation users shall be:

(1) Pedestrians

(2) Non-automotive (bikes, three-wheeled bikes, scooters, etc.)

(3) Mass transit vehicles

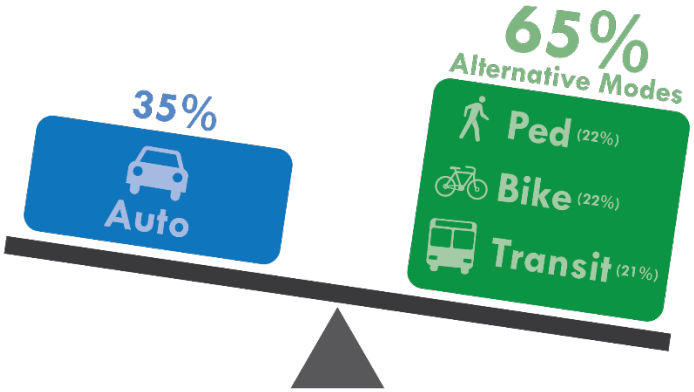
(4) Delivery vehicles

(5) Single-occupant automobiles

At the community workshop held in September 2016, community members were given the opportunity to discuss modal priorities (motor vehicle flow, transit, bicycle or pedestrian) and vote for their preferred priority. Many found it a challenging exercise, since most people frequently use more than one mode and care about conditions for multiple modes. The majority of residents attending the workshop would prefer to see El Camino Real offer more transportation choices than it does today, by offering improved bicycling, walking, and transit facilities. About one third of attendees had concerns about existing driving conditions, particularly congestion at peak times, and wanted reassurance that congestion would not get worse. Many residents who live close to El Camino Real told us that they would prefer to walk or bike to destinations along El Camino Real, but that they drive because walking and bicycling do not feel safe or convenient. This presents an opportunity to improve conditions for all users, by creating safe, attractive and convenient transportation options so that driving becomes just one of many options for local trips – thereby easing congestion on El Camino Real.

[1] California Department of Transportation (Caltrans), *Main Street, California: A Guide for Improving Community and Transportation Vitality*, 2013 http://www.dot.ca.gov/hq/LandArch/mainstreet/main_street_3rd_edition.pdf; National Association of City Transportation Officials (NACTO), *Urban Street Design Guide*, 2013 http://nacto.org/publication/urban-street-design-guide/; (ITE)

Figure 1 Modal Priorities for El Camino Real Corridor Specific Plan



The following action items are recommended to facilitate implementation of multimodal network priorities as the El Camino Real Corridor Specific Plan (ECR Plan) is implemented.

Figure 2 Action Items Regarding Multimodal Priorities

ID	Issue	Action Items
C-1	Complete Streets	Design streets within the plan area as complete streets, which are designed to provide safe, convenient, accessible facilities for all modes including motor vehicles, transit, pedestrians and cyclists.
C-2	Complete Streets	Design streets to provide sufficient maneuvering flexibility for use by automobiles, buses and trucks, while encouraging appropriate travel speeds through self-enforcing street design treatments.
C-3	Complete Streets	Design and policy decisions regarding El Camino Real will reflect multimodal priorities and provide for safe, convenient and accessible travel by all modes of transportation including driving, walking, bicycling and riding transit.
C-4	Complete Streets	In making decisions regarding El Camino Real, the needs of more vulnerable road users such as children, seniors, and people with disabilities will be prioritized.
C-5	Complete Streets	Design and policy decisions regarding El Camino Real will seek to increase pedestrian activity, reduce pedestrian-related collisions, and enhance pedestrian-friendly conditions along the corridor.

NETWORK CONNECTIVITY

To reflect the goal of meeting the needs of all modes and providing complete streets design, a network approach should be taken to planning multimodal circulation in the study corridor. This approach is outlined below.

Street Network and Street Typologies

To balance the needs of all users and to enhance the performance of development along the corridor, a high level of street and/or path connectivity is recommended throughout most sections of the plan area. New side streets or paths are shown in concept to illustrate what could be done along the corridor to provide greater multimodal connectivity and better support mixed use development. The new Multi-use Path (MP) and proposed location for Retail Main Street (RM) designations are intended for consideration if and when the commercial properties in these locations redevelop. They are areas that would benefit from added connectivity and could provide excellent secondary access and a more comfortable environment for bicycles and pedestrians. The actual location of future improvements would need to be carefully considered at the time of site planning review as sites redevelop, and

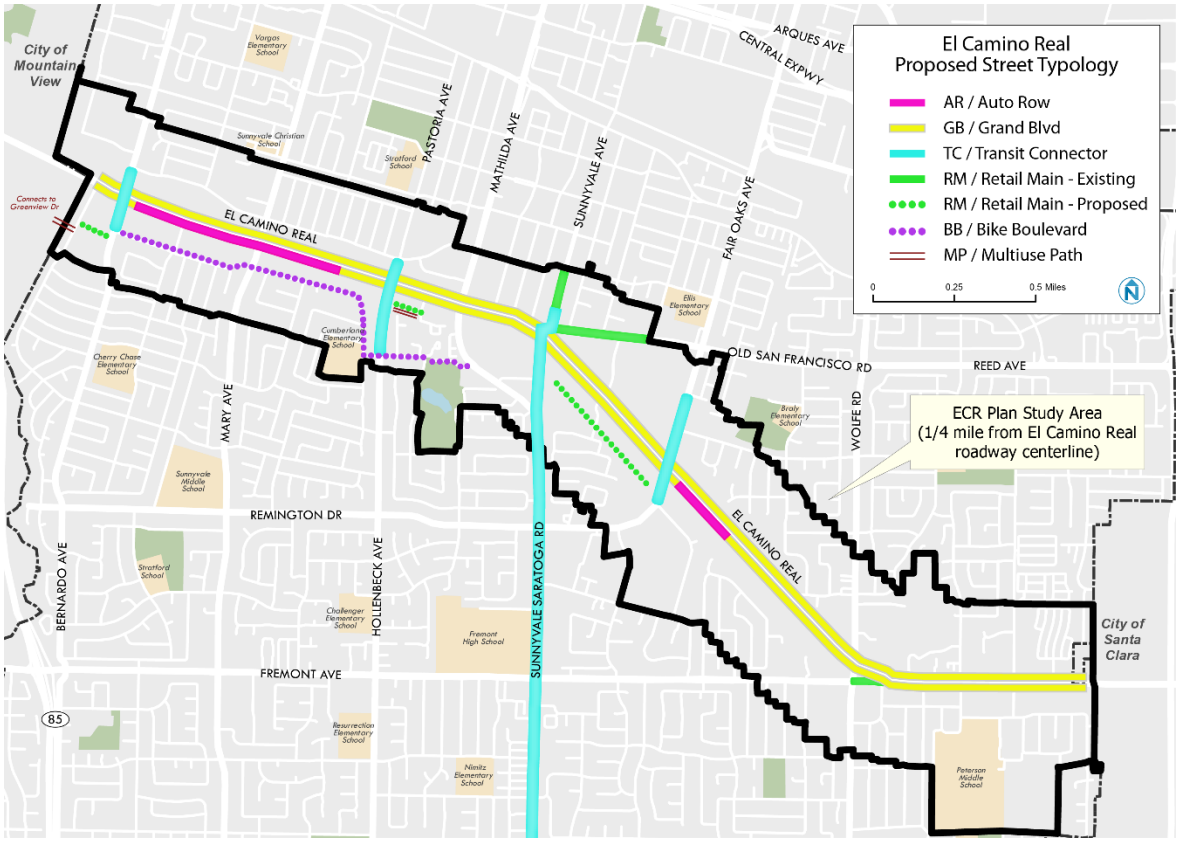
connections between properties will be examined if they would provide greater bicycle and pedestrian connections.

Existing streets and roads in the plan area and wider study area range from high volume regional arterials to local streets and retail main streets. To reflect the different character nodes and land use conditions, and support continuous multimodal mobility along the corridor, several street and path typologies have been proposed throughout the plan area:

- AR / Auto Row;
- GB / Grand Boulevard;
- TC / Transit Connector;
- RM / Retail Main Street;
- BB / Bicycle Boulevard; and
- MP / Multiuse Path.

The location of proposed street typologies within the study area is illustrated within the following corridor map.

Figure 3 Street Typologies



Note: New streets and paths may be added following input from city

Street design guidelines associated with each of these different street typologies are provided in the later section on pedestrian-friendly street design guidelines. Proposed supportive policies are outlined below:

Figure 4 Action Items Regarding Street Network and Typologies

ID	Issue	Action Items
C-6	Complete Streets	El Camino Real will be designed as a Grand Boulevard along segments that do not have auto sales uses, and will be designed as an Auto Row along segments with auto sales uses.
C-7	Complete Streets	Portions of Sunnyvale-Saratoga Road, Bernardo Avenue, Hollenbeck Avenue, and North Fair Oaks Avenue that fall within the study corridor, should be examined to optimize transit access.
C-8	Complete Streets	Along segments of El Camino Real that are characterized as Grand Boulevard, provide new streets or paths needed to maintain block lengths of approximately 400 feet. New streets or paths would be created over time, when properties are redeveloped.
T-1	Transit Network	Coordinate with transit agencies (VTA and Caltrain) to improve transit service and ensure that it is safe and efficient, provides convenient connections to key destinations
T-2	Transit Network	Investigate the potential to improve transit service particularly for peak service periods
T-3	Transit Network	Work with transit agencies to improve transit access and stop amenities including real-time bus arrival times and seating to make waiting for transit more pleasant

Pedestrian-Friendly Facilities and Bicycle Network

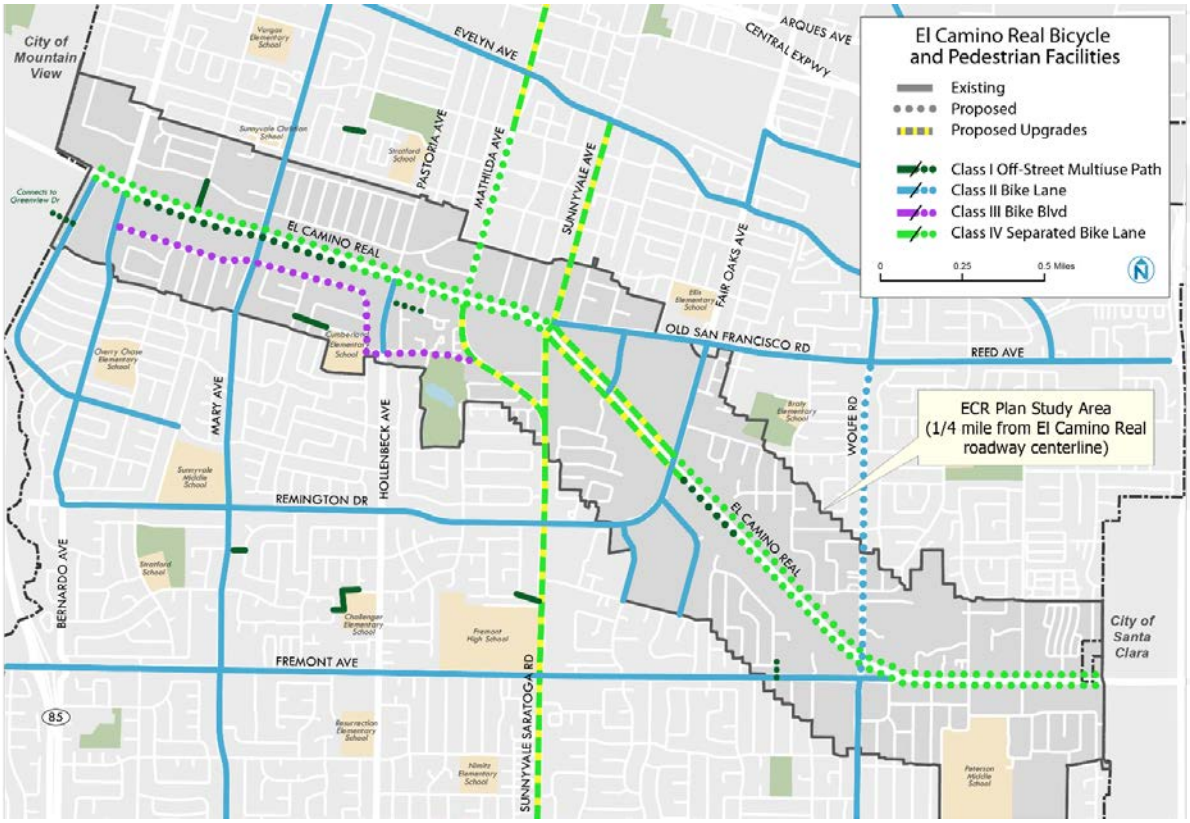
While increased street connectivity will produce more walkable conditions, other conditions also affect the walkability and bikeability of the plan area. Specifically, land uses designed around multiple pedestrian access points as well as more connected path networks are supportive of mixed use development and transit-oriented nodes planned for the corridor. Examples of the types of features that support street connectivity are provided below:

Figure 5 Features Affecting Pedestrian and Bicycle Connectivity

	Supportive of Connectivity and Mixed Use (Preferred)	Not Supportive of Connectivity and Mixed Use (Not Preferred)
Block lengths	Short blocks of less than 500-feet (preferably 300- to 400-feet)	Long blocks of more than 500-feet (existing block lengths are typically more than 1000-feet)
Network characteristics	Frequent side streets, paths, and easements	Long blocks with impermeable sound walls or fences
Neighborhood access	Convenient, publicly accessible pedestrian access between residential neighborhoods and retail uses	Walking paths between houses, transit and retail uses are much longer than a direct radial distance
Land uses and legibility	Interesting, transparent shop frontages, café seating and short setbacks shorten perceived block lengths	Blank walls, surface parking, and long distances between entrances lengthen perceived block length

These features are incorporated into street design standards and displayed in the following map.

Figure 6 Bicycle and Pedestrian Facilities



The following action items are recommended to facilitate implementation of multimodal network priorities as the ECR Plan is implemented.

Figure 7 Action Items Regarding Pedestrian Friendly Facilities and Bike Network

ID	Issue	Action Items
PC-1	Pedestrian/ Bicycle Connectivity	Provide a safe, fine-grained network of multi-use (walking and biking) paths or easements to residential streets within the plan area, as well as through parking lots and commercial land use
PC-2	Pedestrian / Bicycle Connectivity	Encourage block lengths of 400 feet in areas designated as Grand Boulevard and in the vicinity of mixed use areas
PS-1	Pedestrian / Bicycle Safety	Design streets and implement strategies to encourage slow speed traffic
PS-2	Pedestrian / Bicycle Safety	Provide enhanced pedestrian crossing facilities including pedestrian refuges, short crossing profiles, and tight turning radii in areas within a 10-minute walk of transit services that operate at peak headways of 15 minutes or better
PS-3	Pedestrian / Bicycle Safety	Design and implement bicycle facilities that are suitable for a bicycle users of different ability levels. The Protected Bikeways Act (AB1193) and the NACTO Urban Bikeway Design Guide provide good examples of design guidelines to consider.
PS-3	Pedestrian/ Bicycle Safety	Continue enforcement of traffic laws that are most threatening to vulnerable roadway users, including speeding, failure to yield at crosswalks, and failure to yield to bicyclists.

COMPLETE STREETS

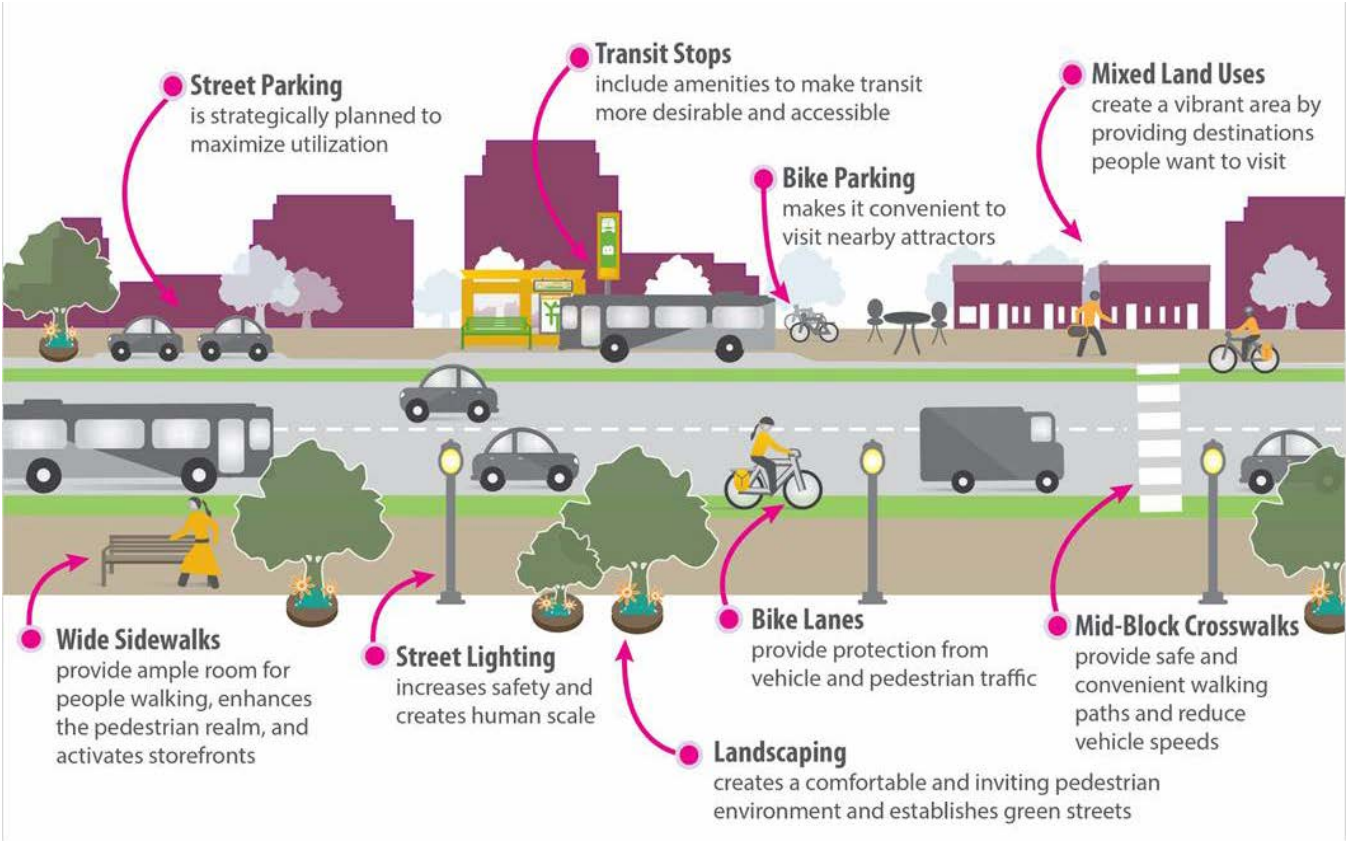
In December 2016, the Sunnyvale City Council adopted a complete streets policy. The following chapter explains what is meant by the term "complete streets", and how Sunnyvale streets could by transformed over time to improve community safety and health while meeting residents' diverse transportation needs.

About

As noted in the above policies, a complete streets approach to the El Camino Corridor is imperative to improving the accessibility, mobility, and safety for all people who use the corridor. Complete streets are streets for everyone, no matter who they are or where they travel. Designed and engineered to provide balanced streets which safely accommodate all users, including pedestrians, bicyclists, public transportation users, motorists, and freight vehicles. The positive changes of complete streets may not happen with a single project, but are part of the process of creating networks that are safer, more accessible, and easier to use. Complete streets encourage active places where people will continue living, visiting, working, and shopping in their local communities.

Examples of elements that compose complete streets are described in Figure 9. While not all of the elements shown are appropriate in every location or circumstance, Figure 9 illustrates the various components that should be considered when designing streets to benefit all users. Signalized or controlled mid-block crosswalks, for example, are a useful element when there is a long distance between intersections and pedestrian access is hindered. Other elements can be implemented more frequently and easily, and can provide a substantial benefit to the users as well as the streetscape aesthetic.

Figure 8 Sample of Complete Streets Elements



Phasing and Example Complete Streets Elements

It can be challenging to gather enough funding and political capital to implement large changes in a single project, and often times the phased implementation of a project is dictated by the availability of funds. An iterative approach is therefore suggested, where smaller discrete projects are completed as opportunity allows. First, these can often be attached to larger projects while barely adding to costs – a classic example being using a resurfacing project as an opportunity to reconfigure lane striping and add bike lanes. Second, implementing smaller projects allows the City sufficient time to evaluate and adjust designs based on operational experience and public feedback, and allows residents sufficient time to adjust to potentially unfamiliar ideas. Third, although continuous safe bicycle and pedestrian facilities would be preferable, smaller improvements are more likely to be approved and implemented, provide immediate local access and safety benefits, and will evolve into a contiguous network over time.

Short and Medium Term

The following treatments can be implemented in the short to medium term:

- **Narrowed travel lanes** are recommended to reduce speeds and improve safety for all roadway users, and could be implemented as part of the ongoing street maintenance schedule. Lane widths of 10 feet are recommended were possible, and up to 11 feet where required for transit or commercial vehicle operations. Any roadway modifications to El Camino Real are subject to review and approval by Caltrans through a "design exception process". It is expected than 11 feet will be the minimum width allowed on any arterial or collector (pending Caltrans input at time of publication).
- **Buffered bike lanes** are recommended to provide a vital east-west bicycle connection in Sunnyvale and reclaim underutilized street space, and could be implemented as part of the ongoing street maintenance schedule. While continuous east-west bike lanes along the full length of El Camino Real are the ultimate goal, completing the full corridor in a single project could be challenging. If instead bike lanes are added to shorter sections opportunistically as part of routine surface maintenance or other projects, they can often be completed sooner and at lower cost. Today, El Camino Real has bike lanes between Fair Oaks Ave and Sunnyvale-Saratoga Ave, and they provide great value for local access to businesses on those blocks. As additional segments are added access will be improved and the value of existing segments will increase as they are extended to new areas. Over time the full corridor length connection will emerge.
- **Green paint** highlighting potential conflict areas between bicycles and vehicles have been shown to greatly increase the rate at which people driving yield to people bicycling. City guidance on appropriate locations include thresholds for traffic volume and crash history for specific locations. In the longer term, the City should consider amending the guidelines to incorporate high-risk and high-stress locations.
- **Marking bike lanes through intersections** help highlight potential conflict areas similarly to green paint, and are typically used together. As for green paint, City guidelines currently require a history of problems before this treatment can be used. In the longer term, the City should consider amending the guidelines to incorporate high-risk and high-stress locations.
- **Reduced corner radii** improve safety by reducing the speed of turning vehicles**.** The City and Caltrans are already working together to remove free right turn lanes at some intersections along the corridor.
- **Bicycle Boulevards** could be implemented in the near term, after outreach to neighbors along the suggested routes. Generally even non-cyclists find the benefits of diverters to outweigh the minimal inconvenience. Intersection improvements such as diverters can be designed to ensure that they provide access for emergency vehicles.
- **Thumbnails and median refuges** could be implemented in the near term, as funds for safety improvements allow. The detail design phase should ensure that geometry does not interfere with vehicle movements, and be mindful not to preclude future protected intersection design.

- **Standard street designs** should be updated to reflect best practices in complete streets design, so that safe designs become the default option when routine maintenance or new construction is carried out. For example, standard street designs for roadway cross-sections should include facilities for all user groups (see Chapter 2); and standard designs for curbs and ramps should include curb extensions on streets with on-street parking.
- **Performance metrics** should consider all transportation modes rather than just vehicles, so that vehicle delay cannot be used to hinder safety improvements for all user groups. Examples include multimodal level of service analysis (MMLOS), which balances key performance metrics for pedestrians, cyclists, transit, vehicles. Following the approval of California SB743, all cities will switch to evaluate vehicle miles traveled (VMT) as part of the development process rather than considering vehicle delay. This will encourage infill development and simplify the approval of complete streets designs.

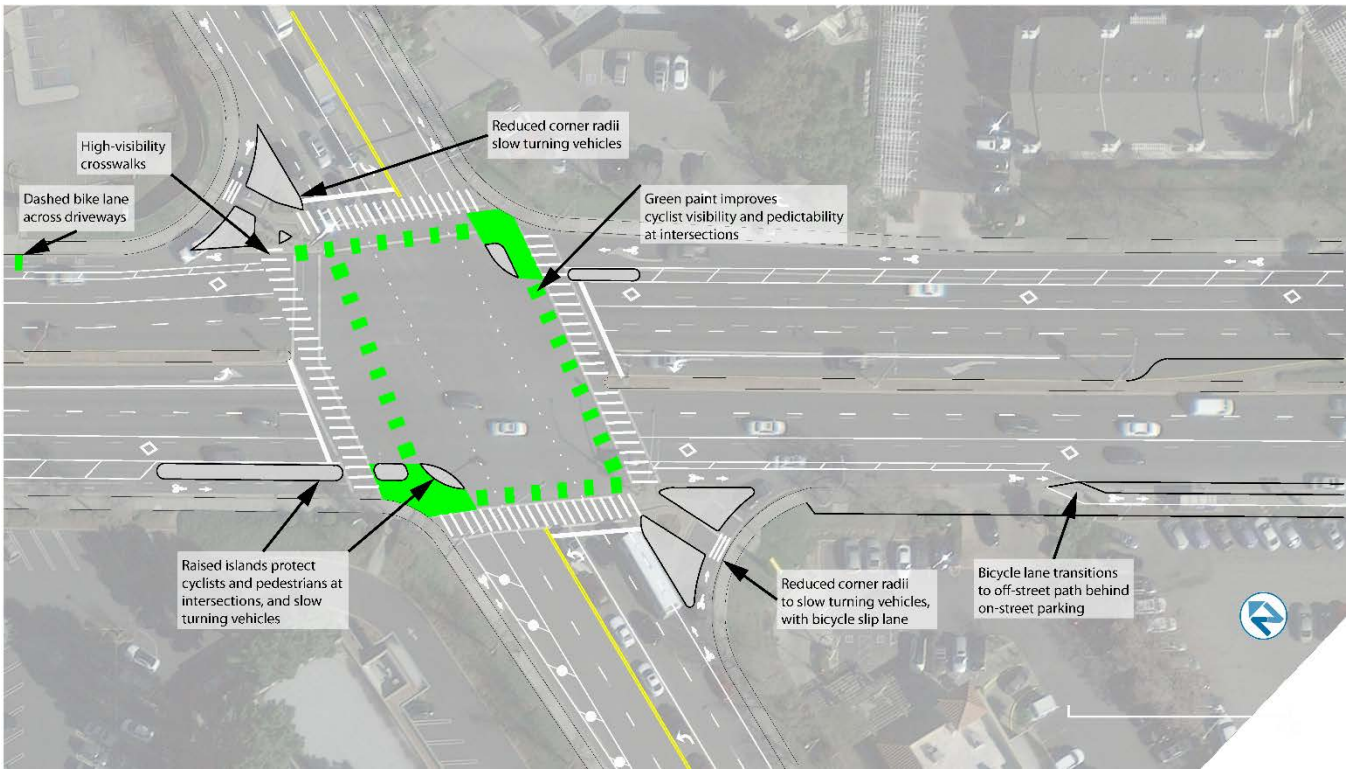
Long Term

The following treatments can be implemented in the long term:

- **Retail main streets** could be created as indicated in the Street Typology map, as properties are redeveloped. The suggested locations would leverage existing commercial development in the Downtown Node, and create a more fine-grained and pedestrian friendly grid.
- **Multiuse paths** could be created in the locations indicated in the Street Typology map, as properties are redeveloped. The paths would improve access for people biking and walking. If desired, these could be streets adding low speed access for vehicles in addition to people walking and bicycling, but that would likely require additional engineering studies to determine suitability.
- **Shared parking** will allow future complimentary developments to share a pool of parking, rather than rely on dedicated parking lots for each land use. This will greatly reduce the total amount of parking spaces needed, making more space for other land uses and making projects more economically feasible.
- **Consolidated driveways** reduce the potential for conflict between vehicles entering and exiting parking lots and people walking or biking past the driveway. Shared parking facilities will naturally have fewer driveways than independent parking lots, though there may be existing adjacent lots that could explore shared access in the shorter term.
- **Protected intersections** help improve safety on priority bike routes, and the City of Sunnyvale is planning to test protected intersection designs on other corridors in the City. These designs may not be appropriate on El Camino Real in the existing condition, but once buffered bike lanes are in place their suitability should be evaluated.
- **Protected bike lanes** add a physical barrier, such as raised curbs or soft hit posts, in the (painted) bike lane buffer, to improve separation between vehicles and people bicycling. They should be considered in areas where there is greater potential for conflict between vehicles and people bicycling, such as approaching intersections or in places where people park in bike lanes.
- **Parklets** are miniature “parks” that replace a few parking spaces. Typically cities allow these only at the request of the adjacent property. For example, many restaurants and bars like to provide outdoor seating, and they find the value of this seating higher than retaining a few parking spaces outside their establishment. Parklets may not be likely on El Camino Real, but in the longer term would likely be suitable on the newly created retail main streets.

Figure 10 shows a design concept for what intersections and roadway segments could look like in the long term, if the buffered bike lane and protected intersection design recommendations were to be implemented. Such a design concept will require a detailed analysis of each specific intersection to ensure that the concepts could be successfully integrated.

Figure 9 Example Intersection and Segment Treatments

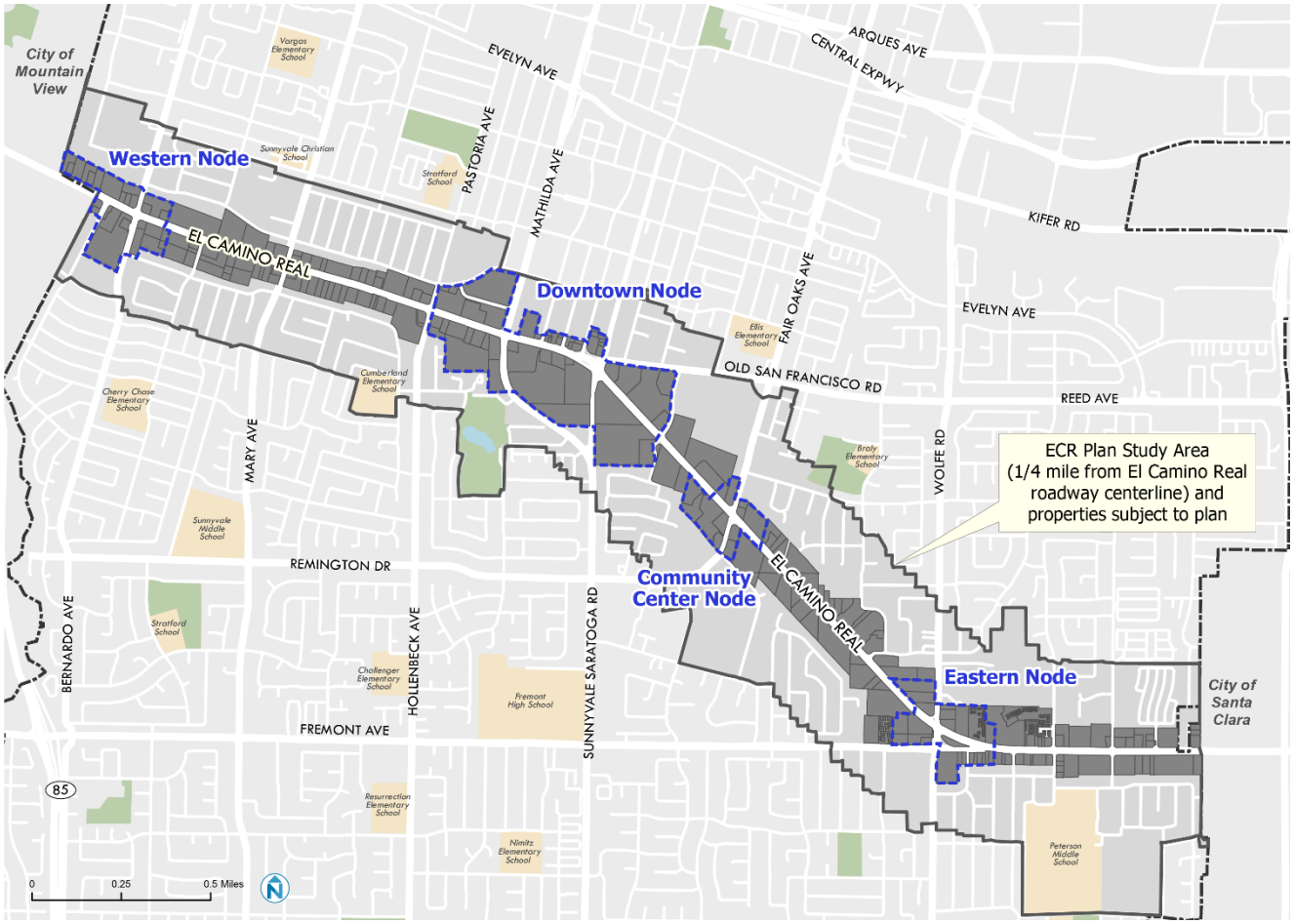


CHARACTER NODES

The ECR Plan area spans four nodes, with a distinct combination of identity-forming elements, urban design and street design features, as well as consistency and smooth transitions across the wider network of multimodal transportation systems. Land uses also vary along the study corridor, with different parking and mobility concerns associated with different land uses.

The recommended complete streets designs and elements were selected for their proven ability to increase safety for all users and help create lively and economically vital places. However, additional engineering studies may be required to determine suitability for specific locations and feasibility of design elements.

Figure 10 Character Nodes



Western Node

The Western Node is focused around Bernardo Avenue. This node represents the western gateway to the City of Sunnyvale from Mountain View and California State Route 85 as well as a key transit and shuttle node and a hub of activity including several successful South Asian restaurants and retail establishments.

Gateway Treatments

In order to reflect this role and character, multimodal circulation elements in this location should include gateway treatments such as more distinctive landscaping, canopy trees, decorative signage, and identity markers in the median and/or near the Bernardo intersection. The design of these elements will be detailed further Chapter 4 (Urban Design Concepts).

Complete Street Design

Complete Streets design—with a particular focus on large signalized intersections—is also a key element of this node. These street design elements will aim to provide greater clarity, safety, and efficient circulation for movements by all modes of transportation. Design features to be considered are:

- Lane narrowing and tighter turning radii to encourage travel at the desired speed and reduce collisions;
- High visibility crosswalks to improve the visibility of pedestrians at intersections;
- Green painted “elephants’ feet” prints to improve the visibility of bicyclists in intersections and driveways where warranted at key locations;
- Buffered bike lanes on El Camino Real;
- Protected intersection treatments to facilitate safe movement by bicyclists of diverse abilities;
- Protected median space for pedestrians. Crossing distances are long, and slower pedestrians may occasionally need to stop halfway across the street. The median waiting area should have a push button for the walk signal.

As noted in the phasing section, the above measures can be introduced in several phases, which allows the City to quickly implement and test ideas at relatively low cost. As funds allow, infrastructure can be upgraded. In the first phase designs can simply be striped with paint. In the second phase, flex hit posts or other temporary delineators can add a measure of additional visibility and safety. Finally, concrete curbs and islands can be added to provide physical barriers between vulnerable road users and traffic.

Downtown Node

The Downtown Node encompasses the intersections at Hollenbeck Avenue, Pastoria Avenue, Mathilda Avenue, Sunnyvale-Saratoga Road, and Sunnyvale Avenue. This node runs along the edge of the Downtown Civic Area and Heritage District to the north and is the focus of various successful retail areas on both sides of El Camino Real near Sunnyvale-Saratoga Road and Mathilda Avenue.

Transit Orientation

This node is the center point of the plan area with high traffic volumes and congestion through the intersection of El Camino Real and Mathilda Avenue, a key transit node at the Hollenbeck-Pastoria Avenue intersection as well as a future transit node at Sunnyvale Avenue as planned by VTA. This intersection provides an important non-motorized access to the Caltrain station across El Camino Real at Sunnyvale Avenue. The node also includes a growing medical complex along Old San Francisco Road, which has been upgraded to include various traffic calming features. This role should be reflected in features that focus on optimizing the throughput of people, transit-oriented development, and multimodal access to and through the area. An additional transit node flanking the Downtown is proposed at El Camino Real and Sunnyvale Avenue.

Complete Street Design

The multimodal and multi-functional character of the Downtown Node makes it a central point of access for many people travelling through Sunnyvale and to surrounding neighborhoods. Because of this relatively higher throughput of people, there is a need to safely accommodate all anticipated users in the Downtown Node, regardless of the mode of transportation they use.

In addition to multimodal functions that span the length of the Downtown Node, the intersection of El Camino Real at Hollenbeck Avenue-Pastoria Avenue serves as a school access route to Cumberland Elementary School, whose student catchment includes neighborhoods on both sides of El Camino Real. Likewise, intersections at Sunnyvale Avenue and Cezanne Drive serve as school access routes to Ellis Elementary School.

For these reasons, a Complete Streets design program—a nationally recognized policy which prioritizes a balanced and context-sensitive approach into the planning and engineering of streets and intersections—is particularly important for the Downtown Node.[2] Complete Streets elements for the Downtown Node could include all of the following:

- Lane narrowing to encourage vehicles to travel at the desired speed;
- Pedestrian crossing improvements to facilitate “park once” retail activity, transit, and pedestrian access;
- Higher visibility pedestrian crossing treatments at school access intersections; and
- Protected intersections and buffered bike lanes along El Camino Real

As with the Western Node, street design changes may be implemented through a phased approach. Similar improvements can be made at Sunnyvale Avenue if it were to become a major transit node.

[2] According to the National Complete Streets Coalition, there are over 900 Complete Streets policies nationwide. http://www.smartgrowthamerica.org/complete-streets

Community Center Node

The Community Center Node encompasses areas in the vicinity of the Sunnyvale Community Center and Fair Oaks Avenue. This node carries large volumes of vehicular traffic as well as functioning as an important crossing for bicycles and pedestrians as well as north-south transit movements from North Fair Oaks Avenue that connect to Sunnyvale-Saratoga Road to the south.

Complete Street Design and Transitions

Future development will enhance the multimodal and multi-functional character of the Community Center Node and the need to safely accommodate all modes of transportation. In addition, the intersection of El Camino Real at South Fair Oaks Avenue serves as a school access route to Ellis Elementary School and the Community Center.

Multimodal circulation within this node also features transitions between different street typologies along El Camino Real. One such transition between Grand Boulevard and Auto Row (as referenced in relation to Network Connectivity) occurs on the south side of El Camino Real to the east of the intersection of El Camino Real and Fair Oaks Avenue. In order to accommodate on-street parking and safe facilities for non-motorized transportation in the Auto Row area, on-street bicycle facilities transition to off-street multi-use facilities in this location (see Figure 14).

Complete Streets elements for the Community Center Node could include all of the following:

- Lane narrowing to encourage vehicles to travel at the desired speed;
- Pedestrian crossing improvements to facilitate park-once retail activity, transit, and pedestrian access;
- Higher visibility pedestrian crossing treatments for school access via Remington Drive-Fair Oaks Avenue;
- Off-street parallel multi-use path could be constructed when properties on south side of El Camino Real are developed.
- Protection of bike lanes at the intersection of El Camino Real and Fair Oaks Avenue, and;

As with the Western Node and Downtown Node, street design changes may be implemented through a phased approach.

Eastern Node

The Eastern Node includes the portion of El Camino Real to the east of Wolfe Road. This area has many successful Korean and East Asian establishments, planned development at the intersection of El Camino Real and Wolfe Road, as well as multi-family housing and assisted living.

Complete Street Design

Future development will enhance the multimodal and multi-functional character of this node and the need to safely accommodate all modes of transportation. The intersection of El Camino Real at Poplar Avenue also serves as a school access route to Peterson Middle School, which is located less than 250 feet away from the intersection.

Multimodal circulation in the area will provide improvements to pedestrian safety, bicycle access, transit access as well as vehicular circulation. Complete Streets elements for the Eastern Node could include all of the following:

- Lane narrowing to encourage vehicles to travel at the desired speed;
- Pedestrian crossing improvements to facilitate park-once retail activity, transit, and pedestrian access;
- Higher visibility pedestrian crossing treatments for school access via Poplar Ave;
- Protected intersection elements at the intersection of El Camino Real and Wolfe Road, and;
- Buffered bike lanes and accessible paths of travel to bus stops along El Camino Real.

As with the Western Node, Downtown Node, and Community Center Node, street design changes may be implemented through a phased approach.

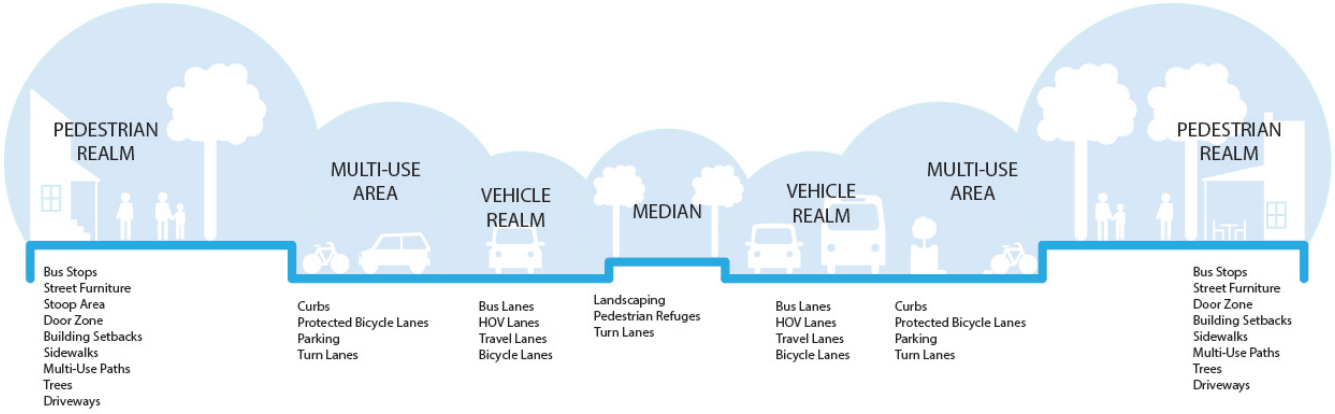
2 PEDESTRIAN-FRIENDLY STREET DESIGN CONCEPTS

The following street typologies are envisioned within the El Camino Real Corridor Specific Plan (ECR Plan) Area:

- Grand Boulevard
- Auto Row
- Transit Connector
- Retail Main Street
- Bike Boulevard

Each of these street typologies represent a different mix of multimodal transportation priorities and land use contexts. The street design standards provide for complete streets design, pedestrian-friendly elements as well as consistency with Americans with Disabilities Act (ADA) Guidelines. The features relate to a variety of elements within the street cross-section as described below. As noted above, additional engineering studies may be required to determine suitability for specific locations.

Figure 11 Cross Section Elements



These elements are summarized in the following table and described more fully on the following pages.

Grand Boulevard

GB

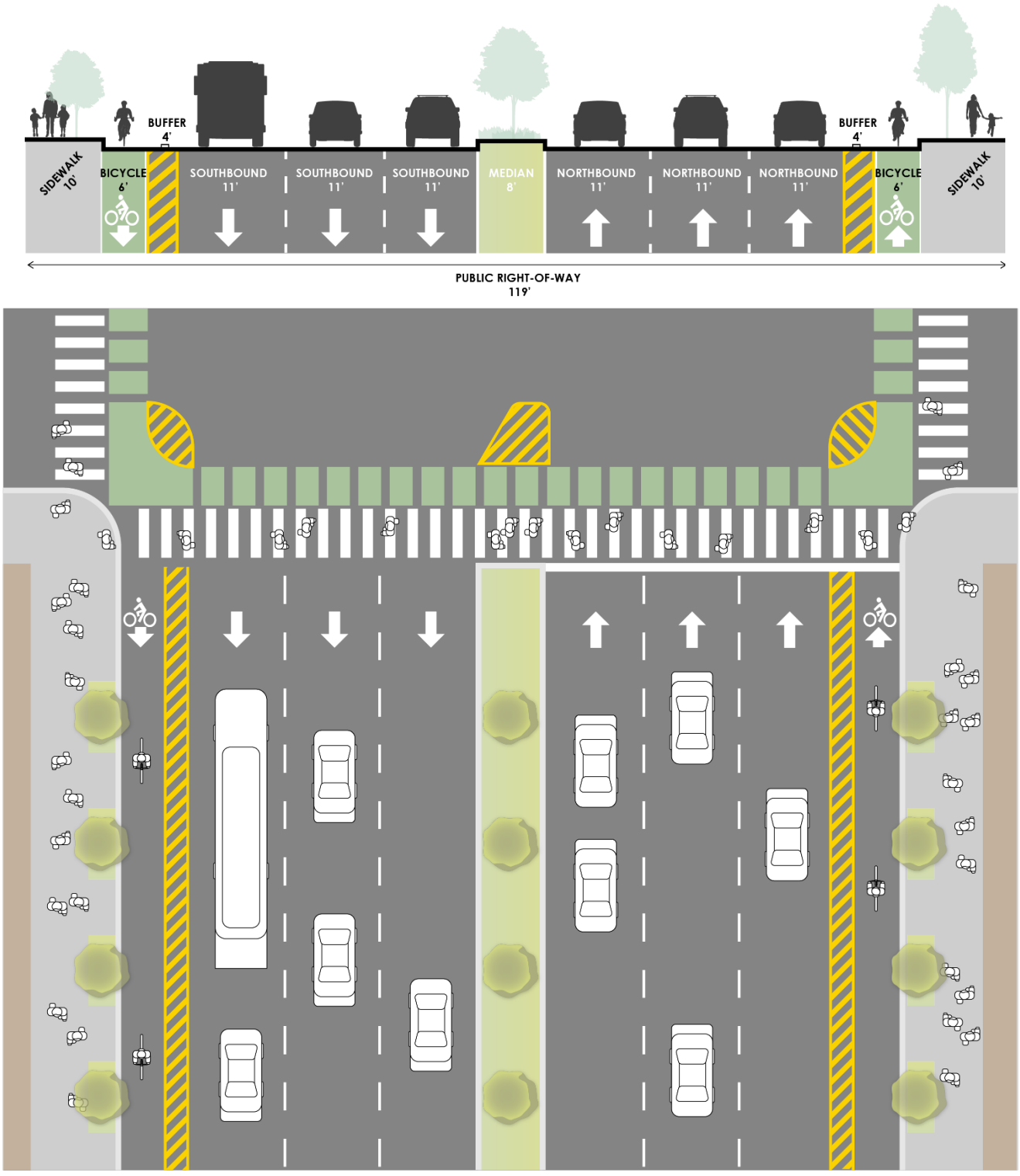
Octavia Street (formerly the Central Freeway), San Francisco (Credit: Steve Boland)

Avenue des Champs Elysees, Paris (Credit: flickr user Jay8085)

Rosemead Boulevard, Temple City (Credit: Joe Linton)

Context	Commercial, Retail, Office, Hotel, Civic, and Mixed Use
Definition	• 100+ foot right of way • Local and through traffic • Balancing all modes: transit, auto, bike, ped
Lanes	6 lanes
Desired Speed	25–35 miles per hour
Lane Width	11-foot auto travel lanes 6-foot bike lanes with 4-foot buffer
Ped and bike facilities	Wide (at least 8-foot) sidewalks and protected or buffered bike lanes with green paint across intersections and driveways
Medians/ buffers	Raised, landscaped center median and side buffers
Block Length	400 feet (as specified in the City's Mixed Use Toolkit)
Streets	El Camino Real

Figure 12 Conceptual Illustrative Section and Plan View of Grand Boulevard with minimum 119 foot right of way (future engineering studies will be required to ensure sutiability and feasibility)



Auto Row

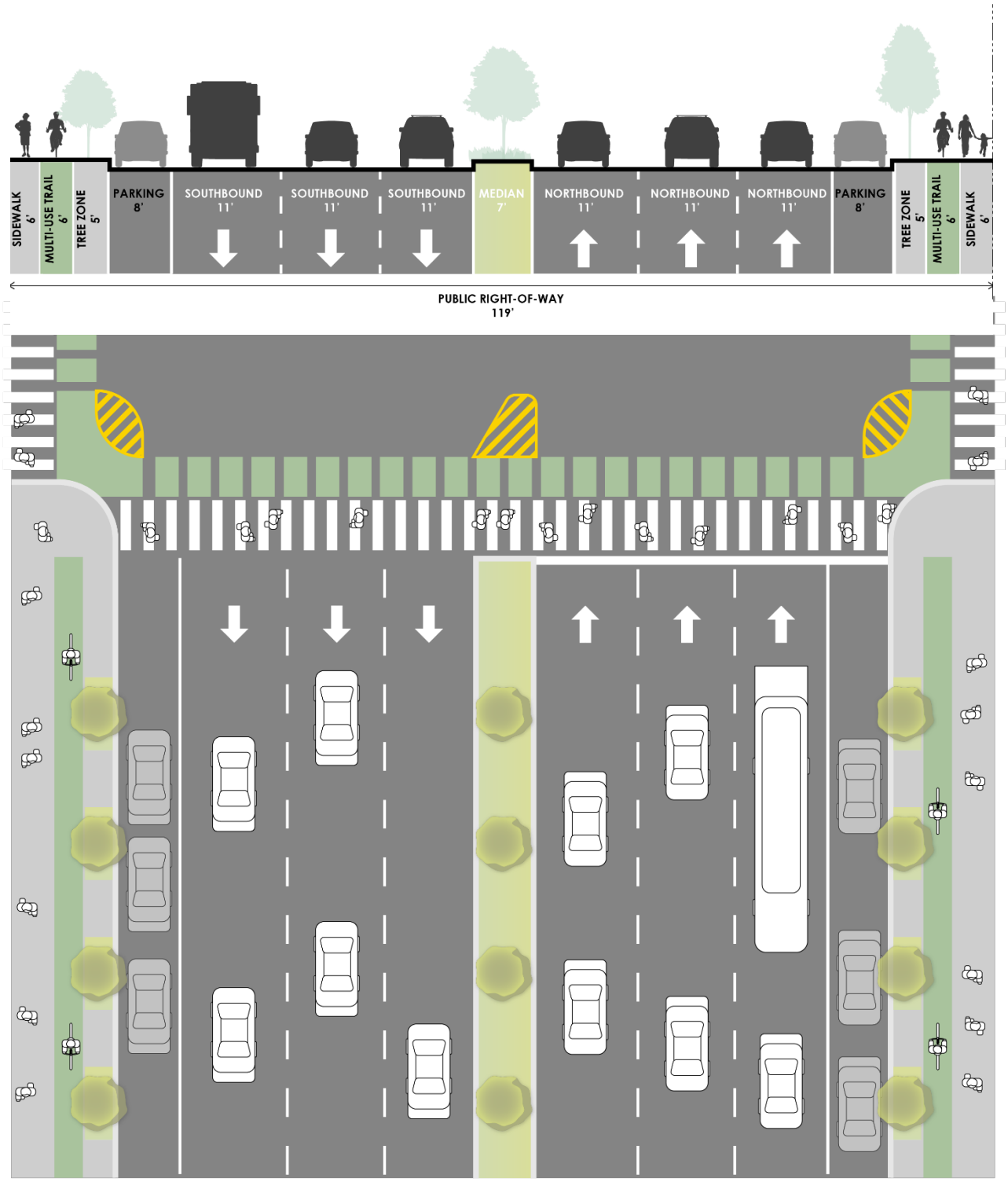
AR

Vassar Street, Cambridge MA (Nelson\Nygaard)

Commonwealth Avenue, Boston (Credit: Patrick Kennedy, http://www.bu.edu/bostonia/winter-spring12/autorow/)

Context	Auto-oriented commercial uses
Definition	• 100+ foot right of way • Local and through traffic • Balancing all modes: transit, auto, bike, ped, and parking
Lanes	6 lanes and parking
Desired Speed	35 miles per hour
Lane Width	11-foot auto travel lanes
Pedestrian and bike facilities	Multiuse path (at least 12-feet wide), with green paint across intersections and driveways
Medians and buffers	Raised, landscaped medians and side buffers
Block Size	600 feet
Streets	El Camino Real

Figure 13 Conceptual Illustrative Section and Plan View of Auto Row with minimum 119 foot right of way (future engineering studies will be required to ensure sutiability and feasibility)



Retail Main Street

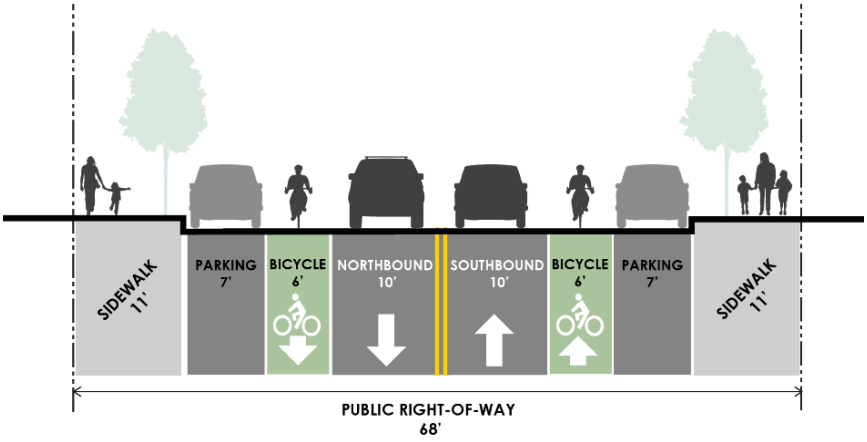
RM

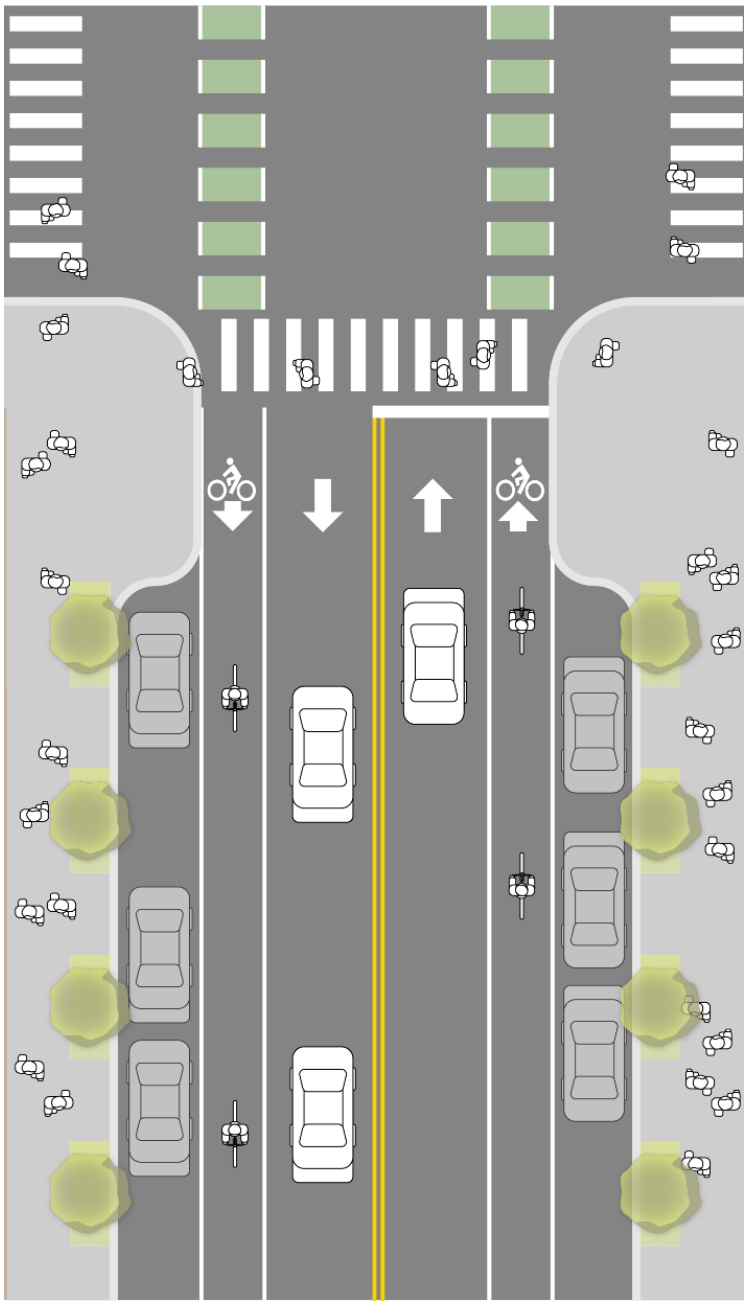
Murphy Avenue, Sunnyvale (Ria Hutabarat Lo)

Castro Street, Mountain View (Nelson\Nygaard)

Context	Retail, high density residential, and mixed uses
Definition	• 30–50 foot right of way • Local traffic • Emphasize walkability and shopfront access
Lanes	2 lanes plus bike lanes and parking
Desired Speed	15–25 miles per hour
Lane Width	10–11 foot auto travel lanes, (11' where necessary for transit or freight. 11' likely required for collectors or arterials.)
Pedestrian and bike facilities	Wide sidewalks, shared lane markings (sharrows) or bike lanes
Medians and buffers	Canopy trees on both sides, permeable paving under parking, bike parking, parklets and café seating
Block Size	300–400 feet
Streets	Old San Francisco Road, Murphy Avenue, portions of Fremont Avenue and Sunnyvale Avenue, new streets

Figure 14 Conceptual Illustrative Section and Plan View of Retail Main Street with minimum 68 foot right of way (future engineering studies will be required to ensure sutiability and feasibility)





Transit Connector

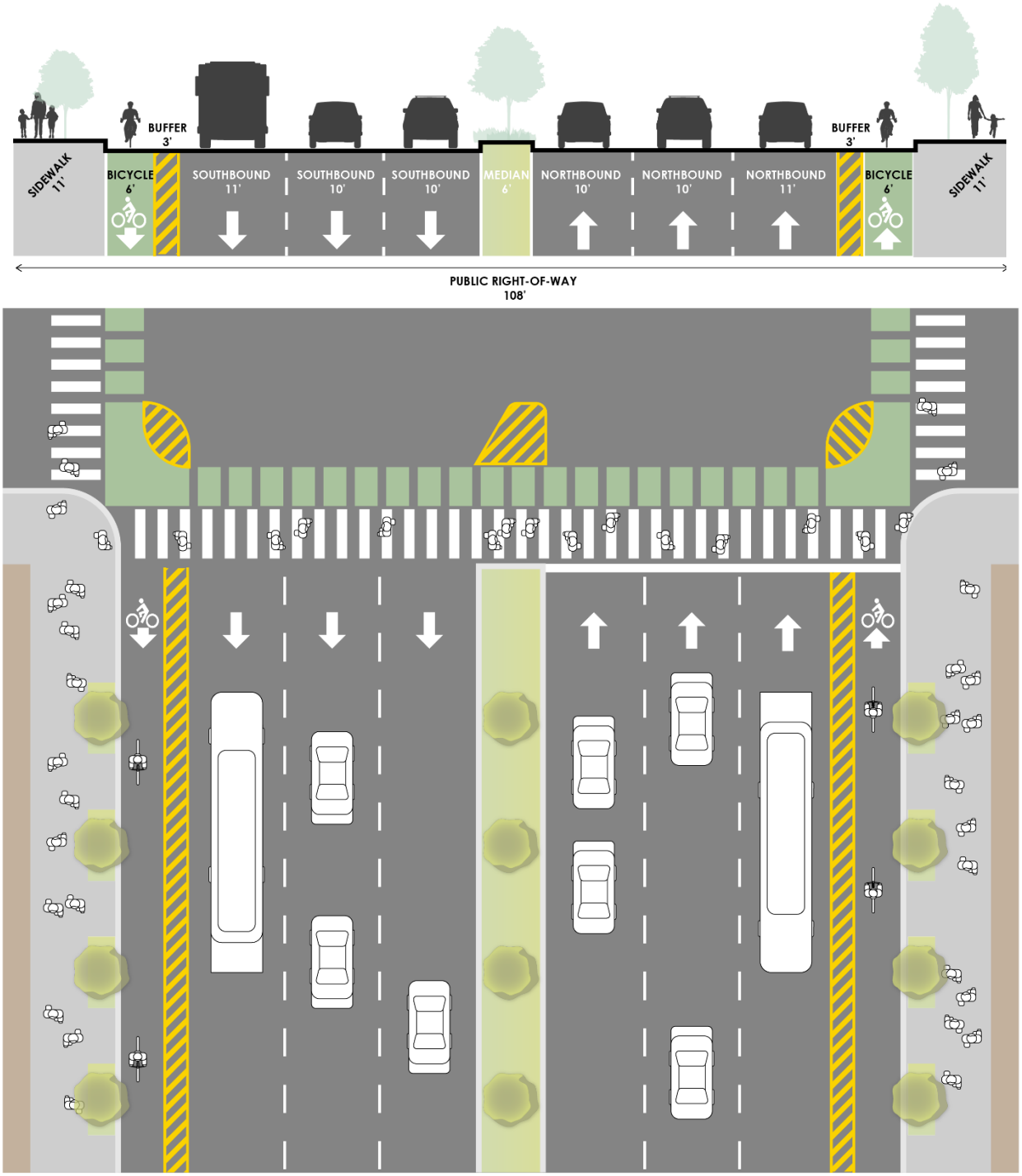
TC

West University Drive, Tempe, Arizona

Epping Road, Lane Cove, Sydney (flickr user John Ward)

Context	Various land use types
Definition	• 60–100 foot right of way • Local and through traffic • Emphasize transit access and person throughput
Lanes	Varies.
Desired Speed	20–35 miles per hour depending on context
Lane Width	10–11 foot auto travel lanes. 11' likely required on collectors or arterials.
Pedestrian and bike facilities	Sidewalks, buffered bike lanes or parking protected bike lanes where space permits.
Medians and buffers	Raised, landscaped medians, shade trees on both sides
Block Size	400 feet
Streets	Sunnyvale-Saratoga Road, Sunnyvale Avenue, Bernardo Avenue, Hollenbeck Avenue, and Fair Oaks Avenue

Figure 15 Conceptual Illustrative Section and Plan View of Transit Connector with minimum 108 foot right of way (future engineering studies will be required to ensure sutiability and feasibility)



Bicycle Boulevard

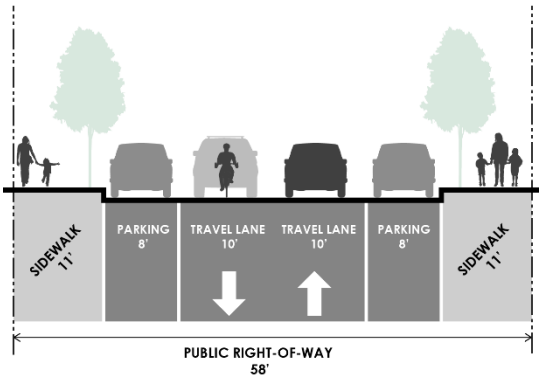
BB

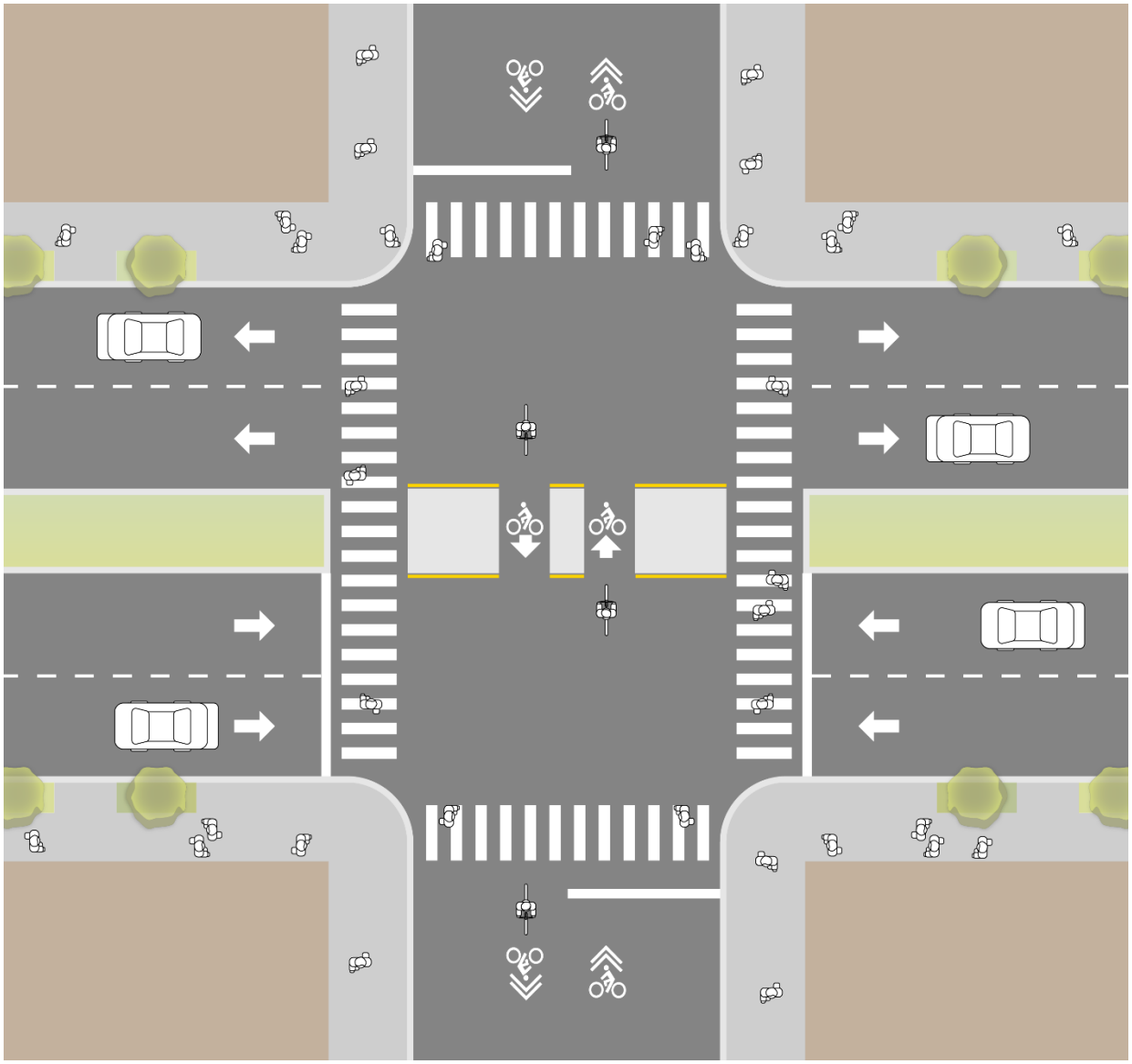
Hillegass Avenue, Berkeley, California

Martin Luther King Blvd at Going St, Portland, OR. Source: Nelson\Nygaard

Context	Residential or mixed land uses, usually parallel to arterials
Definition	• Local and through traffic • Emphasize safety and high comfort for bicyclists
Lanes	Varies; lanes usually unmarked
Desired Speed	20 miles per hour depending on context
Lane Width	10 foot auto travel lanes
Pedestrian and bike facilities	Shared markings ("sharrows"), sidewalks, parking protection, where space permits.
Medians and buffers	Shade trees on both sides, diverters, chicanes, and roundabouts for vehicles
Block Size	Varies
Intersections	At minor streets, the bicycle boulevard should have priority. At major streets, median diverters are recommended to limit through traffic and provide a safe space to wait before crossing the final distance. Design emergency vehicle access.
Street	Blair Avenue (portions)

Figure 16 Conceptual Illustrative Section and Plan View of Bicycle Boulevard with 58 foot right of way

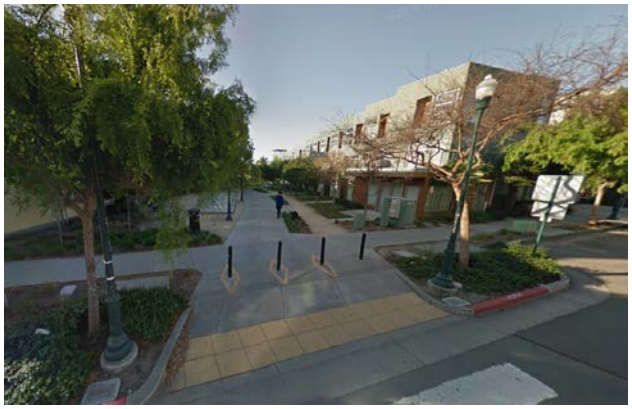




Multiuse Path

MP

Linden Alley, San Francisco (SF Planning Department)



Doyle to 9th Street Greenway, Emeryville (Google Maps)

Context	Varied including mixed use, retail, residential adjacent to retail or mixed use, parking lots, and drainage easements
Definition	• 10–30 foot right of way • Non-motorized traffic • Created as properties are redeveloped to improve pedestrian/bicycle access
Lanes	N/A
Desired Speed	10 mph
Lane Width	10-foot multiuse path
Pedestrian and bike facilities	Multi-use path with transitions to sidewalks and bike lanes as well as open space.
Medians and buffers	Trees, landscaping, lighting, and gathering / sitting spaces should be provided
Block Size	300 to 400 feet
Streets	Potential future paths connecting Knickerbocker to Greenview Drive, Blair Avenue to Hollenbeck Avenue, and other opportunities as appropriate

3 ACCESSIBLE DESIGN: BRINGING MODES TOGETHER

Universal access is central to the El Camino Real Corridor Specific Plan (ECR Plan) and is particularly important at locations where different modes of transportation interact or conflict with each other. This section outlines recommended accessible design guidance for multimodal junctions, with a focus on those along El Camino Real. Key potential junction types include:

- Pedestrian through zones
- Street frontages
- Street furniture zones
- Signalized intersections
- Unsignalized intersections and driveways.
- Mid-block crossings
- Transit stops and shelters

Recommended design elements are described below:

Pedestrian Through Zones

M1

Source: Nelson\Nygaard

Type	Pedestrian Infrastructure
Context	The Pedestrian Through Zone is the portion of the sidewalk intended for movement.
Elements	Sidewalk
Design Considerations	Minimum path of travel: 4’ Minimum passing width: 5’ Ideal sidewalk width: 8’ Ideal multiuse path width: 12’ Maximum cross slope: 2% Preferred running slope: 5%

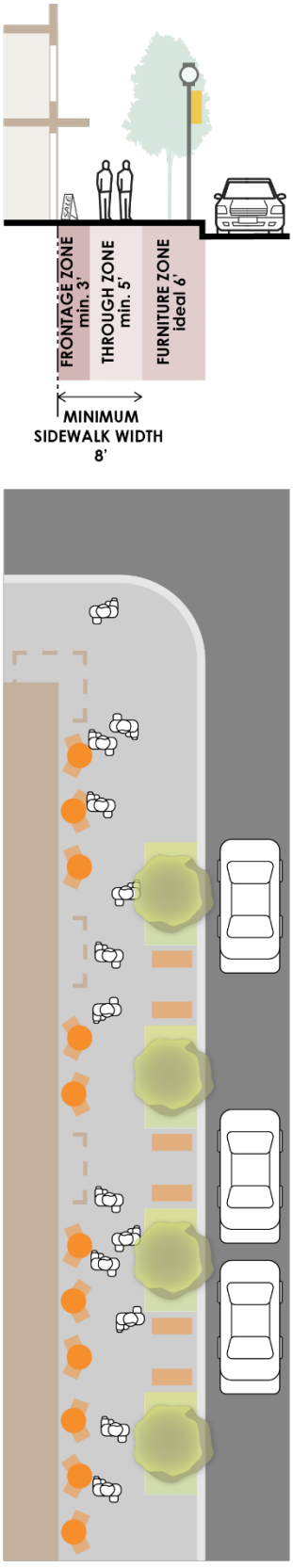
Street Frontages

M2

Source: Nelson\Nygaard

Type	Pedestrian Infrastructure
Context	The Frontage Zone is the portion of the sidewalk immediately in front of buildings.
Elements	Awnings, Umbrellas Café Seating Shop Signs Planters Sandwich Boards Door Opening Clearance
Design Considerations	Minimum width of zone: 3’ Minimum distance of furniture from building walls/faces (for maintenance, trash removal): 6” Preferred distance of furniture from building walls/faces (for maintenance, trash removal): 1’ Minimum head clearance for awnings: 10’ Preferred head clearance: 15 – 20’

Figure 17 Illustrative Section and Plan View of Pedestrian Zone



Street Furniture Zones

M3

Richmond, British Columbia

Type	Pedestrian Infrastructure
Context	The Street Furniture Zone lies between the Pedestrian Through Zone and the curb. Where bulbouts occur, these may be considered part of the furniture zone
Elements	Benches Shade/canopy trees, landscaping Pedestrian Lighting and Poles Trash Cans, Newspaper Stands Parking Meters Bike Racks Fire Hydrants Possible Parklets
Design Considerations	Ideal furniture zone width to allow tree growth: >6' Preferred: Keep path of travel as straight a line as possible, so a pedestrian does not have to weave around obstacles. Minimum distance of furniture from building entrances: 5' Preferred distance of furniture from building entrances: 10' Minimum distance of furniture from fire hydrants: 5' Sight triangles at corners

Signalized Intersections

M4

Protected Intersection, Davis, CA. Source: City of Davis, CA.

Type	Signalized intersections
Context	Commercial, Retail, Office, Hotel, Civic, Mixed Use, Auto Sales
Pedestrian Crossing	• Standard white marking or high-visibility ladder crosswalks • Leading Pedestrian Interval (LPI) of 2-3 seconds
Bicycle Crossing	• (Long term) Protected intersection treatments • "Elephant's feet" markings
Transit Accommodation	• Vehicle detection and signal priority
Design Considerations	Protected median space for roads wider than 90 feet, including push button for walk signal Corner ramps at least 6 feet wide oriented toward each crosswalk Curb ramp with tactile warnings shall always be contained by crosswalks. Best practice accessible signals[3] Pedestrian signals provided by infrared cameras automatically detect pedestrians without the need for signal activation.

[3] Research on Accessible Pedestrian Signals: http://www.apsguide.org/appendix_c_features.cfm

Intersections	Consideration for Ladder crosswalk (feasibility study required): El Camino Real & Hollenbeck-Pastoria Avenues, El Camino & Mary Avenue, El Camino Real & Sunnyvale Avenue, El Camino Real & Cezanne Drive, El Camino Real & Remington Drive South Fair Oaks Avenue, El Camino Real & Poplar Avenue (school access) Standard white marking at other intersections.

Unsignalized Intersections and Driveways

M5

Lincoln Park, Illinois. Source: Bike Walk Lincoln Park

Type	Unsignalized intersections adjacent to residential and commercial uses
Pedestrian Crossing recommendations	• Adequate and level clearance (4 feet wide, less than 2% grade) across all vehicular ways • High-visibility ladder crosswalks should be considered across side streets that meet El Camino at unsignalized intersections • Continue City practice of requiring decorative paving or other special treatment for driveways
Bicycle Crossing recommendations	• Green paint across all vehicular conflict points (at least 5 feet wide)
Ramps	Curb ramps parallel with sidewalk, and include tactile warnings before driveway edge
Intersections	El Camino Real & Knickerbocker Drive, El Camino Real & Taaffe Street, El Camino Real & Frances Street, El Camino Real & Norman Drive, El Camino Real & Sycamore Terrace

Transit Stops and Shelters

D6

Castro Street Bus Stop, Mountain View. Source: QT Luong

La Jolla, California

Type	Transit stops including: • basic stops (≤40 weekday boardings) • core stops (40–199 weekday boardings); • major stops (≥ 200 weekday boardings)
Context	Currently curbside on the far side of intersections
Pedestrian Facilities	• Pedestrian signal • High visibility zebra crosswalk
Bicycle Accommodation	• Bicycle U-rack(s) – please refer to section on bicycle parking
Transit Accommodation	• Standard bus stop sign or enhanced bus stop sign (major) • Landing pad, seating, real time arrival information • Route map, schedule display (core/major) • All-weather shelter and in-shelter, solar or pedestrian-activated lighting (core/major) • Trash can (core/major)
Design Considerations	Clear 8' x 5' landing pad required in the front of bus stop (may include space under shelter) Stop length for 2 buses (210' on El Camino Real, 80' on side streets) Accessible paths of travel to stop (see pedestrian through zone)

The above standards incorporate standards for upgrading stations and stops from the VTA's Transit Passenger Environment Passenger Plan (TPEP), completed in May 2016. The appropriate level of amenities and

prioritization of improvements is based on average weekday boardings.[4] Along El Camino Real the vast majority of bus stops are classified as major stops.

Figure 18 Bus Stop Classifications along El Camino Real in Sunnyvale

Stop Location	Average Weekday Ridership (2014)	Classification (2016)
El Camino & Remington	4,796	Major Stop
El Camino & Wolfe	4,614	
El Camino & Fair Oaks	3,077	
El Camino & Hollenbeck	2,848	
El Camino & Knickerbocker	2,652	
Hollenbeck & El Camino	1,760	
El Camino & Pastoria	1,673	
El Camino & Bernardo	1,628	
Fair Oaks & El Camino	1,408	
Fair Oaks & Iris	1,067	
Old San Francisco & Carroll	946	
Wolfe & El Camino (Ns)	844	
Wolfe & Fremont	824	
Remington & El Camino	683	
El Camino & Maria	642	
Wolfe & El Camino	577	
El Camino & Mary	526	
El Camino & Sunnyvale Saratoga	516	
El Camino & Sunnyvale	490	
El Camino & Sycamore	485	
El Camino & Mathilda	477	
El Camino & Henderson	405	
Old San Francisco & Central	372	
El Camino & Cezanne	372	
El Camino & Poplar	325	
Wolfe & El Camino (Md)	324	
Wolfe & Maria	223	
El Camino & Grape	221	
Remington & Manet	190	Core Stop
Remington & Michelangelo	173	
Hollenbeck & Danforth	98	
Sunnyvale & Olive	69	
Old San Francisco & Bayview	14	Basic Stop
Wolfe & Eleanor	10	

[4] VTA Transit Passenger Environment Plan: http://vtaorgcontent.s3-us-west-1.amazonaws.com/Site_Content/VTA%20TPEP_Final%20Report.pdf, p. 11 (accessed August 2016)

4 URBAN DESIGN ELEMENTS

This section describes urban design elements that occur in the pedestrian zone and the median of the street. The pedestrian zone (detailed in Figure 18) can generally be divided into three portions:

- furniture zone (between the curb and the sidewalk)
- pedestrian through zone
- frontage zone (between pedestrian through zone and street frontages of land uses)

In some cases, the parking lane may also be used for pedestrian-related elements such as parklets.

This section provides information on key transportation related elements as well as the placement within the street of general urban design related elements. The guidelines supporting these standards will be prepared as part of the Public Realm Design Guidelines section of the El Camino Real Specific Plan (ECR Plan).

Art and Identity-Forming Elements

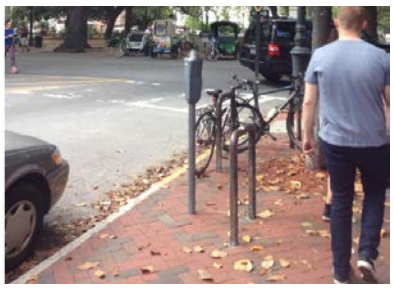
D1

Montreal Bus Stop with Swings. Source: Olivier Blouin

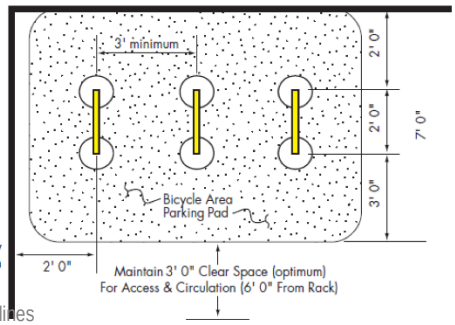
Placement	Art may be incorporated to any portion of the street providing that ADA requirements are still met e.g. pedestrian through zone paving, transit shelters, frontage zone, design of landscaping, materials

Bicycle Parking (Short Term)[5]

D2



Savannah, Georgia



VTA Bicycle Technical Guidelines

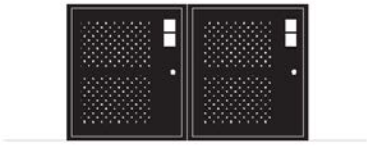
Savannah, Georgia

Context	Short-term bicycle parking is designed to meet the needs of those visiting businesses and institutions, typically for up to two hours. Short-term users may be infrequent visitors to a location, so parking installation must be visible and self-explanatory.
Placement	• On-site racks must be visible from, and close to, the entrance served (<50'), and in view of passersby. • On-street bike corrals can provide 8 to 12 bike spaces within one auto parking space in places with limited sidewalk • Sidewalk racks in the furniture zone should be placed between parking stalls to avoid conflicts with opening car doors.
Appropriate elements	• Bike racks made of rust-resistant carbon steel or stainless steel • Area lighting • Weather protection should be provided for a portion of the racks • Signage should direct bicyclists to the parking
Design and dimensions	• All racks must be sturdy and well-anchored (see figure) • Square tubing is preferable to round tubing, which can be cut quietly with a handheld pipe cutter.

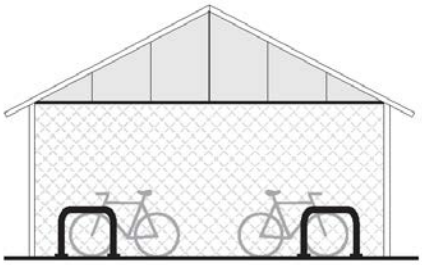
[5] Sources: City of Sunnyvale Citywide Design Guidelines (2013), Essentials of Bike Parking, APBP (2015), Bicycle Technical Guidelines, Santa Clara Valley Transportation Authority (VTA) (2012)

Bicycle Parking (Long Term)[6]

D3



BIKE LOCKERS



SHELTERED SECURE ENCLOSURE

Figure 19 Long-Term Bike Parking at Washington DC Bike State (flickr user Eric Gilliland)

Context	Long-term parking is designed to meet the needs of employees, residents, public transit users, and others who need to leave their bicycles unmonitored for several hours and require security and weather protection.
Placement	Appropriate locations vary with context and may include: • a room within a residential building or workplace • a secure enclosure in a parking garage • a cluster of bike lockers at a major transit stop, • conveniently located lockers outside of the pedestrian way.
Appropriate elements	• Controlled access: leased lockers, on-demand lockers, or keycard/ code access to cage or room • Safeguards such as lighting and surveillance cameras • Weather protection and all-weather surfaces • Effective guide signage
Design and dimensions	Short-term bicycle racks in a secured area should accommodate a variety of bicycles and accessories, including recumbents, trailers, children's bikes and long-tails. Bike lockers holding 2 bikes are usually 42" wide, 78" long, 47" high.

[6] Sources: City of Sunnyvale Citywide Design Guidelines (2013), Essentials of Bike Parking, APBP (2015)

Parklets

D4

San Mateo, California

Context	Parklets are platforms built along the curbside lane with direct access to and from the pedestrian zone via the furniture zone.
Placement	Areas with high demand and low supply of public spaces Busy retail corridors, especially with sizable pedestrian throughput Locations where outdoor seating would restrict pedestrian flow Parklets should be at least one parking space away from a corner
Features	• Street furniture • Café seating • Planter pots or landscaping • Corrals for short-term bike parking
Design and Dimensions[7]	Parklets shall be flush with the sidewalk at all points of entry and have a path at least 36” Minimum width of 6 feet (or the width of the parking lane) and desired length of at least 20 feet A wheel stop or reflective bollard must be installed approximately 4 feet from each end of the parklet. A 3-foot railing must be installed to protect people from adjacent traffic. The railing should be able to withstand 200 feet of force.

[7] Sources: Urban Street Design Guide, National Association of City Transportation Officials (2013); San Francisco Parklet Manual (2015)

Gateway Treatments

D5

Miami Beach, Florida

Hayward, California (135 feet) http://static.panoramio.com/photos/large/87282262.jpg

Pleasanton, California

Locations	City borders Character node entries
Features	Human scaled Reflects history and identity of place
Placement	Furniture zone Median Above right-of-way

Wayfinding and Orientation

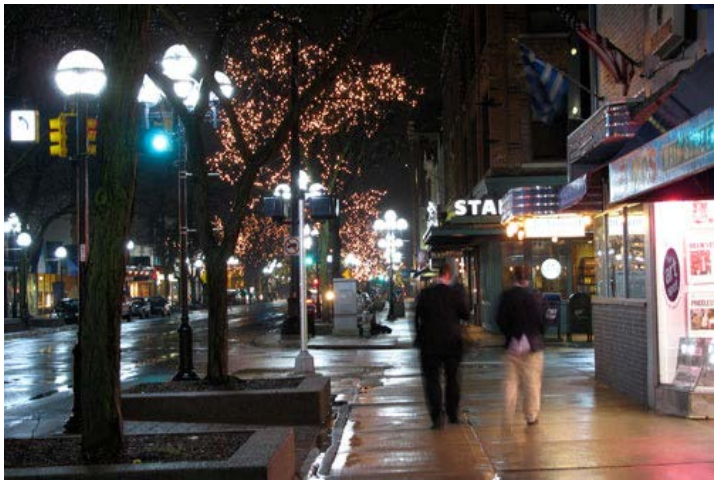
D6

Portland Pedestrian Wayfinding. Source: Portland Bureau of Transportation

Rationale	Wayfinding is important for establishing identity and providing a consistent program of orientation and directions to help users reach different destinations.
Placement	Wayfinding should generally be located in furniture zone (outside driveway and vision sight triangles) Place signage at all "decision points" for a person: • Entering Sunnyvale • Disembarking the bus • Reaching the end of a protected bicycle route or multiuse path • Key intersections
Elements	• Intrinsic wayfinding such as viewsheds to key destinations should be considered • Street signs • Real time transit arrival times • Direction to key destinations • Distance or estimated walk time to destinations • Character forming elements

Lighting

D7



Source: APA Great Places in America

Placement	Lighting should be located in the furniture zone and median Lighting is particularly important for enhancing pedestrian visibility at all intersections, crossing points, and waiting locations such as transit stops
Element	Street lighting Pedestrian lighting (human scaled)

Seating and Street Furniture

D8

Burlingame Avenue, Burlingame. Source: Nelson\Nygaard

Placement	Furniture zone Café seating may also be placed in the frontage zone
Elements	Potentially include sitting surfaces as well as seating

5 PARKING POLICY AND MANAGEMENT

INTRODUCTION

Parking is abundant along much of the El Camino Real corridor. Parking is free and largely unregulated, both on and off street. The most recent parking inventory and occupancy study was conducted by VTA in 2013 based on aerial photographs. This 2013 aerial study revealed overall peak parking occupancies of 51% off-street, 28% on-street, and a combined peak occupancy of 50% overall, which is far below the peak optimal rates of 90% off-street and 85% on-street[8]. At a segment level, the highest peak occupancies were observed along the eastbound segments of El Camino Real from Bernardo Avenue to Grape Avenue (86%) and Mary Avenue to Hollenbeck Avenue (100%), and the westbound segment of El Camino Real from Poplar Avenue to Henderson Avenue (80%).

Development has occurred along El Camino Real since the VTA study was conducted in 2013, however visual observations indicate that there continues to be considerably more parking supply than peak demand. For designated priority development areas (PDAs) this is inefficient, since many land uses have less land for the active use than for parking, and it contributes to a built form that is unattractive and less safe for pedestrians and cyclists. Unnecessarily high parking requirements also affect the financial feasibility of projects and affordability of housing, and can complicate changes of use leading to higher business vacancy rates.

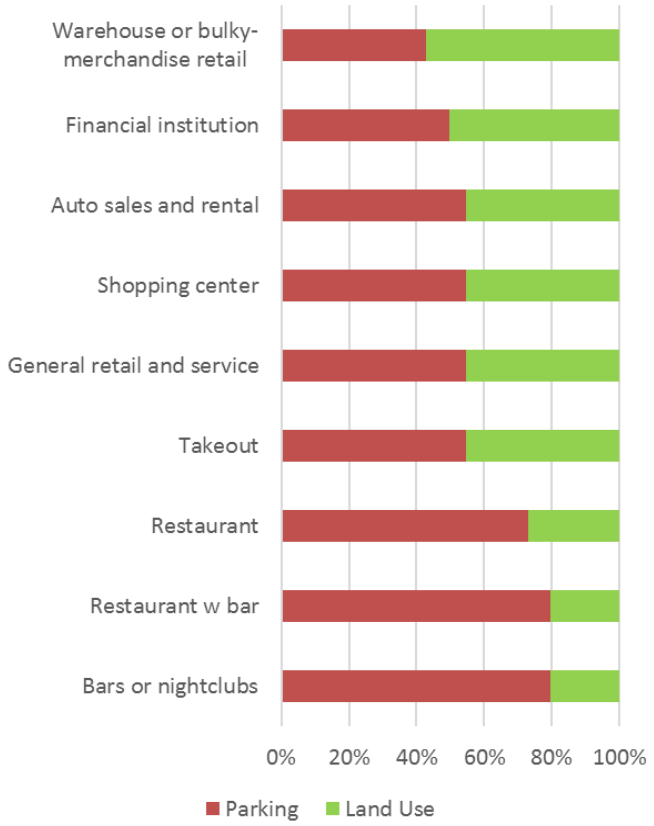
Parking policy and management encompasses various types of strategies:

- Amendment of off-street parking requirements within the corridor specific plan area
- Travel demand management (TDM) strategies within the specific plan area
- Parking design requirements
- Parking management strategies

[8] "The High Cost of Free Parking", Donald Shoup, APA Planners Press 2005

Lower Parking Minimums

P1



Spatial implications of Sunnyvale's minimum parking requirements based on Municipal Code Table 19.46.100(a) result in more parking than land uses

Milpitas, California

Rationale	Excessive parking provision increases trip generation.[9] Good transit access and average peak parking occupancies suggest parking is oversupplied. Parking for infill development is costly, which reduces development feasibility, housing affordability, economic vitality.
Recommendations	Plan area minimum parking requirements for Commercial, Retail, Office, Hotel, Civic, Mixed Use, and Residential uses will be at least 20% lower than other areas of the city. Further reductions are permitted based on TDM implementation
Precedents	Milpitas Transit Area Specific Plan has a 20% reduction in minimum parking requirements Mountain View's North Bayshore Precise Plan has a zero minimum parking requirement
Supporting strategies	Residential parking permit program to mitigate spillovers Shared parking Transportation Demand Management programs
Location	Throughout

[9] "The High Cost of Free Parking", Donald Shoup, 2005

Blended Rates

P2

City	Actual Peak Parking Occupancy / 1,000 SF	Minimum Requirement / 1,000 SF or Actual Built Supply / 1000 SF	Parking Unused at Peak Hour / 1000 SF
Hood River, OR	**1.23**	1.54	0.31
Oxnard, CA	**0.98**	1.7	0.72
Newport Beach, CA	**1.78**	1.84	0.06
Corvallis, OR	**1.5**	2	0.5
Monterey, CA	**1.2**	2.14	0.94
Sacramento, CA	**1.18**	2.19	1.01
Seattle, WA (SLU)	**1.75**	2.5	0.75
Kirkland, WA	**1.98**	2.5	0.52
Palo Alto, CA	**1.9**	2.5	0.6
Santa Monica, CA	**1.8**	2.8	1
Ventura, CA (Westside)	**1.26**	2.87	1.61
Chico, CA	**1.7**	3	1.3
Hillsboro, OR	**1.64**	3	1.36
Bend, OR	**1.8**	3	1.2
Salem, OR	**2.04**	3.15	1.11
Lancaster, CA	**1.37**	3.67	2.3
Redmond, WA	**2.71**	4.1	1.39
Beaverton, OR	**1.85**	4.21	2.3
Soledad, CA	**1.21**	4.21	3
Tiburon, CA	**2.64**	4.59	1.95

Selected Mixed-Use Districts

Santa Cruz, California (Nelson\Nygaard)

Rationale	The plan area functions as a series of mixed use park-once districts with complementary peak parking periods Parking requirements that differ by land use discourage renovation and redevelopment since a change of use may require additional parking. It could also discourage reuse of existing buildings. Blended rates for shared parking incentivize developers not to oversupply parking and incentivizes better urban form.
Recommendation	In commercial areas, particularly with smaller parcels, Developers may use a blended rate of 2.5 spaces per 1000 square feet for off-street parking if that parking is made available as shared public parking. If the parking is not shared, existing zoning requirements apply.
Precedents	Sacramento's zoning code update (2012) introduced a rate of 2 spaces/1000 square feet along suburban transit corridors for most commercial land uses. Other examples include Dana Point and East Palo Alto.
Supporting strategies	Where potential spillover may be a concern, neighborhoods may opt into a Residential Parking Permit program
Location	Character nodes

Shared Parking

P3

Walnut Creek shared parking garage with ground floor café. Source: Ria Hutabarat Lo

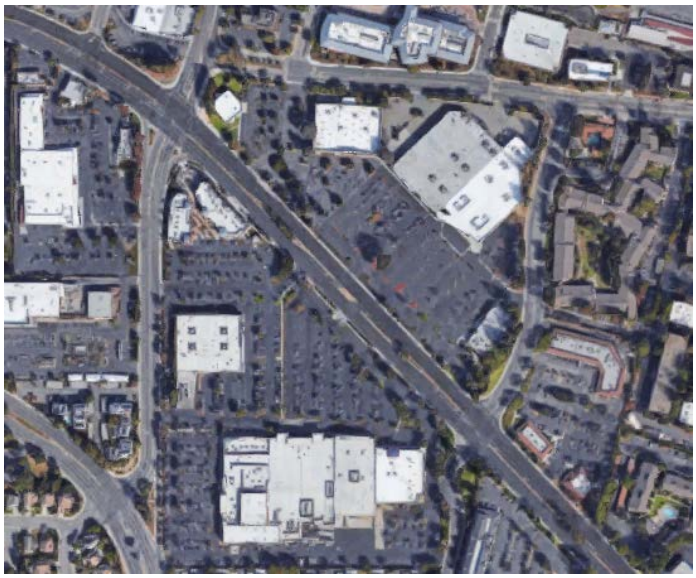
Cezanne Apartments, Sunnyvale, CA (Source: Google)

Milpitas, CA. Source: Nelson\Nygaard

Rationale	Shared parking is key to a Park-Once-and-Walk district, providing access to multiple activities within a walkable environment. This enhances customer experience, parking efficiency, and economic vitality. Over time, consolidating driveways will improve pedestrian and bicycle safety
Recommendation	Mixed-use areas should use shared parking analysis to calculate parking demand (with internal capture and complementary schedules). Shared parking supplies need not be contiguous, but must employ district-wide policies & wayfinding.
Design	Shared parking can be provided within a quarter mile (5-minute walk) of land uses.
Precedents	Sunnyvale Municipal Code has a blended parking requirement for shopping centers that assumes shared parking between all of the tenants and is lower than if the uses were stand-alone.
Supporting strategies	Transportation Demand Management, Parking Maximums

P4

Parking Maximums



More land for parking than buildings. Google Maps © 2016.

North Bayshore Precise Plan—existing prototypical condition

North Bayshore Precise Plan—potential condition

Rationale	Excess parking supply generates more traffic, reduces walkability, and undermines Transportation Demand Management. Providing excess parking makes housing less affordable and development less feasible, particularly when shifting from surface to structured supplies.
Description	Parking maximums in the nodes and for commercial uses should not be more than 110% of average peak parking demand based on area-wide surveys or best-fit land use code from the ITE *Parking Generation* manual.
Precedents	Sunnyvale Municipal Code requires parking maximums for nonresidential uses North Bayshore Precise Plan, which does not have parking minimums, only maximums
Supporting strategies	Transportation Demand Management, Shared Parking

Preferential Parking

P5

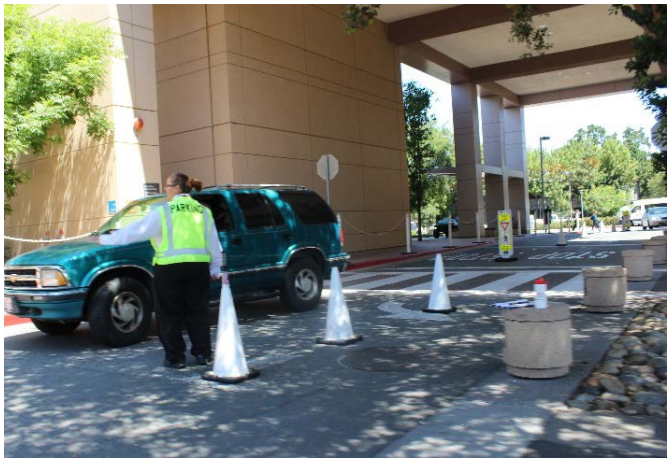
Source: Nelson\Nygaard

Source: Flickr user: SmartSign

Rationale	To encourage ridesharing, the most convenient parking spaces for commercial developments should be reserved for carpools and vanpools.
Recommendation	Commercial locations, particularly those with TDM programs and constrained parking, will provide preferential parking for registered carpool/vanpool users.
Precedents	Genentech campus in South San Francisco, Sunnyvale Municipal Code requires the provision of preferential parking for office, industrial, and research/development uses.
Supporting strategies	Transportation Demand Management Parking Maximums

Managed Parking

P6



Medical Center valet service. Source: Nelson\Nygaard

Pali House, West Hollywood. Source: Nelson\Nygaard

Rationale	The City should support the owners of businesses and parking lots/facility owners in managing parking supply
Context	Character nodes, hospitality or service land uses (restaurant, hotel, medical)
Description	Valet parking is permitted to be counted as a strategy that increases parking capacity during periods of peak parking demand. The city may establish standardized language, signage, and management tools including a parking district or transportation management association if warranted.
Precedents	Mountain View Hospital Valley Fair Shopping Center Mountain View North Bayshore Precise Plan
Supporting strategies	Unbundled parking On-street meters Shared parking

Transportation Demand Management

T1

Boarding the 522, San Francisco. Source: Nelson\Nygaard

Packard Foundation, Los Altos, California (Flickr user: Steven Woo)

Rationale	Transportation demand management strategies reduce traffic and parking impacts
Description	Based on the Sunnyvale TDM Ordinance, office and industrial developments are subject to a mixture of incentives and TDM requirements, including trip caps in return for density bonus. The same requirement could apply to commercial uses along the El Camino corridor. All multi-family residential developments over 10 units require a TDM program. Transportation demand management programs for residential, office, and industrial development are administered by the Community Development Department and enforced by the Department of Public Works.
Precedents	North Bayshore TDM Plan Guidelines San Francisco TDM Ordinance
Supporting strategies	Reduced parking requirements, shared parking, complete streets, paid parking

ADDITIONAL PARKING MANAGEMENT STRATEGIES

Sunnyvale's new General Plan has laid out ambitious plans to provide more housing and make walking and bicycling for short trips more attractive. As Sunnyvale grows, parking policies will need to evolve over time to support more walkable land uses and still ensure that parking remains available for those who need to drive. The following three parking management strategies are presented to round out the toolbox of available strategies, and may help Sunnyvale achieve the goals laid out in the new General Plan.

Sunnyvale General Plan, Land Use and Circulation Element, Policy 31:

Move progressively toward eliminating direct and hidden subsidies of motor vehicle parking and driving, making the true costs of parking and driving visible to motorists.

- **Action 1:** Pursue opportunities for user fees such as paid parking, paid parking permits at workplaces, and paid parking places for on-street parking in transit-rich residential neighborhoods, and promote corporate parking cash-out programs.
- **Action 2:** Manage City-provided public parking though pricing and location strategies in order to match supply and demand, shift the market costs to users of vehicle parking, maintain mobility and access to Sunnyvale businesses, and reduce vehicle trips.
- **Action 3:** Advocate at the regional, state, and federal levels for actions that increase the visibility of the true costs of parking and driving to motorists and improve the cost return attributable to driving.

A brief summary of each strategy is provided below, please refer to the following pages for more detailed information.

- **Unbundled Parking**. Parking is charged separately from the main property use. Total cost is the same for many people, but those who don't need parking spaces pay less. This measure has been shown to reduce parking demand significantly, making development with fewer parking spaces possible. This contributes, amongst other things, to more affordable housing.
- **Paid/Metered Parking**. Paid parking charged at appropriate rates to ensure 85% occupancy is the most effective strategy for making sure that everyone who needs to park can find a space, while ensuring the most efficient use of available parking supply. Note that in areas with low demand, the appropriate price is zero. Elsewhere, the price should be adjusted until 85% occupancy is achieved. To address concerns about spillover parking to surrounding neighborhoods, this strategy is often combined with residential parking permits.
- **Parking Revenue Reinvestment**. Introducing paid parking where it has previously been free can be challenging. Many communities have therefore elected to reinvest parking revenues in the neighborhoods in which they were collected. The revenues could be used to address other community concerns such as street maintenance, lighting, amenities, and safety improvements.

Unbundled Parking

T2

Monticello Village near Lawrence Station, Source: MVE + Partners

Madera Apartments near Mountain View station. Source: Prometheus

Rationale	Unbundled parking spaces are charged separately from the main property use so users only purchase or lease the amount of parking they want. Parking price is set so that the combined price equals the prior combined price including parking. Lower vehicle ownership is incentivized.
Context	Residential development, commercial landlords
Description	Rental residential properties must charge separately for the living unit and parking space(s). Tenants may rent as many or as few spaces as they want. Commercial landlords must charge tenants for parking spaces as a separate line item from office/workspace.
Precedents	San Francisco zoning code (citywide) Santa Monica Zoning Code (central areas)
Supporting strategies	California law requires employers with more than 50 employees to offer employees who do not drive the cash value of parking. Unbundled parking makes this relationship more explicit by clearly defining the parking price.

Paid/Metered Parking

T3

SFpark meter, San Francisco. Source: Nelson\Nygaard

Rationale	Paid parking is the most efficient management strategy for areas where parking demand exceeds available supply during peak times. Correctly priced parking helps ensure turnover of parking spaces, ensuring availability. By making sure there are always available spaces, circling for parking is reduced.
Context	Commercial areas, character nodes, areas with uneven or limited availability.
Description	Meter rates should be introduced when occupancies reach 80% and should be set at a level that ensures an average occupancy of 85%, with annual adjustment (up or down) to maintain this target occupancy rate.
Supporting Strategies	Reduced Parking Minimums Transportation Demand Management Parking Revenue Reinvestment Coordinated pricing strategy with off-street parking
Precedents	Downtowns everywhere

Parking Revenue Reinvestment

T4

"Your meter money makes a difference in Old Pasadena. Safety – Streets – Cleanliness – Alleys". Source: Nelson\Nygaard

Rationale	Parking revenue from meters and in-lieu fees should be invested in the area in which it was collected. This could be administered through a parking benefit districts
Context	Character nodes including Downtown Node, other commercial areas. Potentially also residential areas adjacent to commercial areas. Limited paid parking can be used to manage spillover parking.
Description	Paid parking can be made more palatable by using parking revenue to reinvest in the area it was collected. For example, parking revenues could fund streetscape improvements, cleanup, community guides, lighting, or other amenities desired by the community. Funds may be managed through a parking district or transportation management association.
Supporting Strategies	Paid Parking, Demand-based Pricing
Precedents	Old Pasadena, CA Austin West Campus District Ballpark District, Washington, D.C. Redwood City, CA

Parking Design

T5

Surface parking design

Wrapping of structured parking in Bevely Hills. Source: Nelson\Nygaard

Rationale	Parking design affects walkability, bikeability, and the attractiveness of transit access to destinations. Parking design also plays an important role in enhancing or detracting from area character
Context	Character Nodes, neighborhood commercial districts
Features	Visual impacts of public and private off-street parking should be minimized through placement behind buildings, retail wrapping of facilities, landscaping, and minimizing driveway curb cuts. Driveways and internal areas of parking facilities should clearly delineate and prioritize pedestrian movements. Parking wayfinding should be provided. Parking should allow flexibility for future trends such as more space-efficient automated parking or autonomous vehicle parking.
Precedents	Beverly Hills