FREMONT DOWNTOWN COMMUNITY PLAN

+

DESIGN GUIDELINES

Adopted September 18, 2012 - Last Amended September 18, 2018
Resolution No. 2018-59

Fremont Downtown
Community Plan + Design Guidelines

CITY OF FREMONT

City Manager's Office, City Attorney's Office, Community Development, Community Services, Economic Development, Fire Department, Information Technology Services, and Public Works

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CITY OF
Fremont

FOREWORD

For as many years as Fremont has existed, there has been a vision for the creation of a vibrant central "downtown" area that can unite the City and serve as a regional destination. Many factors have shaped Fremont's downtown area over the past 55 years as it developed from farm land and rural homesteads into the 430+ acre 'City Center' we see today. As the City has adopted its General Plan 2035, it has become increasingly apparent that the original vision needs refinement to reflect the many changes that have occurred over the years as well as the many changes expected as the City continues to grow into the future. To this end, the "Downtown Community Plan and Design Guidelines" sets forth a vision for a new urban mixed-use 110-acre area within City Center. This vision achieves the ongoing goal of creating a sense of place within the City Center to attract residents, employers and visitors. This new plan also creates a high degree of flexibility within the land use scheme, in particular for the ground floor space, to allow buildings to adapt to a variety of uses over time and to respond to differing market conditions.

A healthy, vibrant City Center and Downtown District is crucial to the economic health and civic pride of a community. In fact, there are several reasons why downtown districts are an important and worthwhile investment in the economic health and quality of life in a community. Downtown business districts are prominent employment centers. This type of job creation translates into a stronger tax base and economic activity. Downtown revitalization efforts often encourage rehabilitation of vacant or underutilized land and buildings, which increases property values and helps attract new businesses, including small businesses, to the community. A vital downtown area also reduces urban sprawl by concentrating residential and commercial uses in one area with a variety of transit options. The goal of revitalizing a downtown to create a vital commercial core as the center of the community may be achieved by implementing strategies which focus on traffic, transportation links and parking, architecture and visual appearance, pedestrian improvements, safety, locating businesses, and marketing. These factors combined can create a dynamic urban core that results in an exciting destination for residents, employees, and visitors.

Fremont's Downtown District is poised to become a vibrant urban mixed-use district within the City Center. The Community Plan and Design Guidelines that follow describe how this area will be transformed into an urban, pedestrian-friendly district embodying sustainability and transit-oriented development principles. The public realm within the district will consist of a newly configured and redesigned "complete" street grid that serves multiple modes of transportation, accommodates parking and, in some instances, also serves to treat stormwater. Distinctive retail opportunities, civic plazas, entertainment/cultural art venues, a robust art program, and consolidated City government offices will also serve to attract residents from the City and the region. Finally, the Plan creates flexibility in accommodating a variety of land uses to respond to market conditions over time.

The City intends to reward new developments that adhere to Plan goals and guidelines with streamlined approval processes and, in earlier years, other incentives to make development both economically feasible but also highly desirable. Downtown offers the opportunity to partner with the City in the development of a vibrant and exciting new district within Fremont's City Center!

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Fremont Downtown
Community Plan + Design Guidelines

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Exhibit 1.1: Downtown District Vision: Capitol Avenue at State Street

1.0 PROJECT OVERVIEW

The Fremont Downtown Community Plan and Design Guidelines, is focused on a core area within the City Center encompassing approximately 110 acres. The area is centrally located within Fremont and is bounded by the arterial roadways of Fremont Boulevard, Mowry Avenue, Paseo Padre Parkway, and Walnut Avenue. It is the City's desire to redevelop this underutilized area into a sustainable, vibrant pedestrian-oriented mixed use destination for Fremont and the region.

The Downtown Community Plan and Design Guidelines set forth the land use and design guidelines within the District (refer to Land Use Exhibit 4.13). The Plan outlines the vision, goals and objectives contained within the General Plan. Along with the regulations set forth in the Downtown District in the City's zoning code, it serves as the implementing tool in the review of public and private development projects within this district. The Downtown District is located within the City Center, as defined by the General Plan 2035.

In conjunction with the Environmental Impact Report, passage of this Plan is also intended to provide streamlined project environmental reviews, provided the proposed project is within the framework of the Plan.

Projects that foster the vision, goals and objectives are to be rewarded via streamlined project review and, in earlier years, incentives to facilitate development.

This Plan builds upon previous studies prepared over the years, including the Fremont CBD Concept Plan 2001, as well as the 2035 General Plan. The plan will be implemented over the next 20 years.

A Vision for Downtown

The City of Fremont's vision for Downtown is to create a lively mixed use, transit-oriented sustainable neighborhood. The public realm will be more pedestrian-friendly and activated by street-level commercial, retail, civic uses and public open spaces that stimulate economic activity and entice high-quality, high-density development to the district. Development projects will take advantage of the close proximity and connections to the Fremont BART Station. The building development patterns will change character from today's low-density, vehicular-oriented suburban development fronting surface parking lots to a mid to high-density, transit-oriented development directly fronting streets and sidewalks.

The Downtown Community Plan sets the overall design parameters for the district's new development patterns (see Development Controls Exhibit 4.10). A hybrid form-based code serves to guide future development in terms of building orientation, massing and architectural character while providing flexibility in the land uses to meet changing market demands. The design guidelines outlined in Chapter 4 serve to direct development to a consistent level of aesthetic quality, to ensure an improved public realm and an identifiable sense of place.

Finally, the City of Fremont seeks to create a model for sustainable development. As such, this plan incorporates the green building thresholds consistent with the California Green Building Standards Code, or CalGreen, which went into effect on January 2011. The United States Green Building Council's (USGBC) new Leadership in Energy and Environmental Design for Neighborhood Development (LEED-ND) standards were also used as a guide for the Downtown Plan.

Guidelines and Plan elements that have sustainable attributes will be identified by the green leaf symbol.

Exhibit 1.2: Santana Row - San Jose, CA.

1.1 GOALS + OBJECTIVES

Downtown District Goals

The goals for Downtown redevelopment include:

- Create a social heart for the City
- Encourage economic development
- Create an identifiable civic center and public realm
- Leverage the BART Station for transit-oriented development
- Initiate a sustainable model neighborhood

Downtown District Objectives

The objectives for Downtown are consistent with those of the City Center:

- Create a distinct and memorable downtown destination.
- Encourage a vibrant district of mixed-use development
- Support economic vitality and expand business and retail opportunities for residents
- Improve the street + block pattern as well as the streetscape design and amenities
- Create a pedestrian and bicycle friendly environment
- Improve pedestrian connections to Fremont BART station and the Hub Shopping Center
- Encourage a strategic network of shared public and private parking facilities
- Reflect Fremont's cultural diversity
- Require energy efficient, green building construction and environmental stewardship
- Promote a thriving employment center that is a destination of choice

Exhibit 1.3: Envisioned Outdoor Sidewalk Cafes

1.2 EXISTING CONDITIONS

Project Area Context

Fremont is strategically located on the southeast side of San Francisco Bay in the northern part of Silicon Valley (Exhibit 1.4). Access to the City of Fremont is via Interstate Highways 880 and 680, however, neither highway is directly adjacent to Downtown. Downtown is bounded by four arterial roads: Mowry Avenue, Paseo Padre Parkway, Walnut Avenue, and Fremont Boulevard, (Exhibit 1.5) providing good vehicular access. The Fremont BART station is located within walking distance to the east of the district.

Located within the City Center, Downtown has street views of the Mission Ridge mountains, including Mission Peak. Fremont's Central Park and Lake Elizabeth, a major recreation spot, is about a mile away.

Adjacent to Downtown are medium-density apartments, two shopping centers (Fremont Hub and Gateway Plaza) and two hospitals with related medical facilities nearby.

Exhibit 1.4: Regional Map

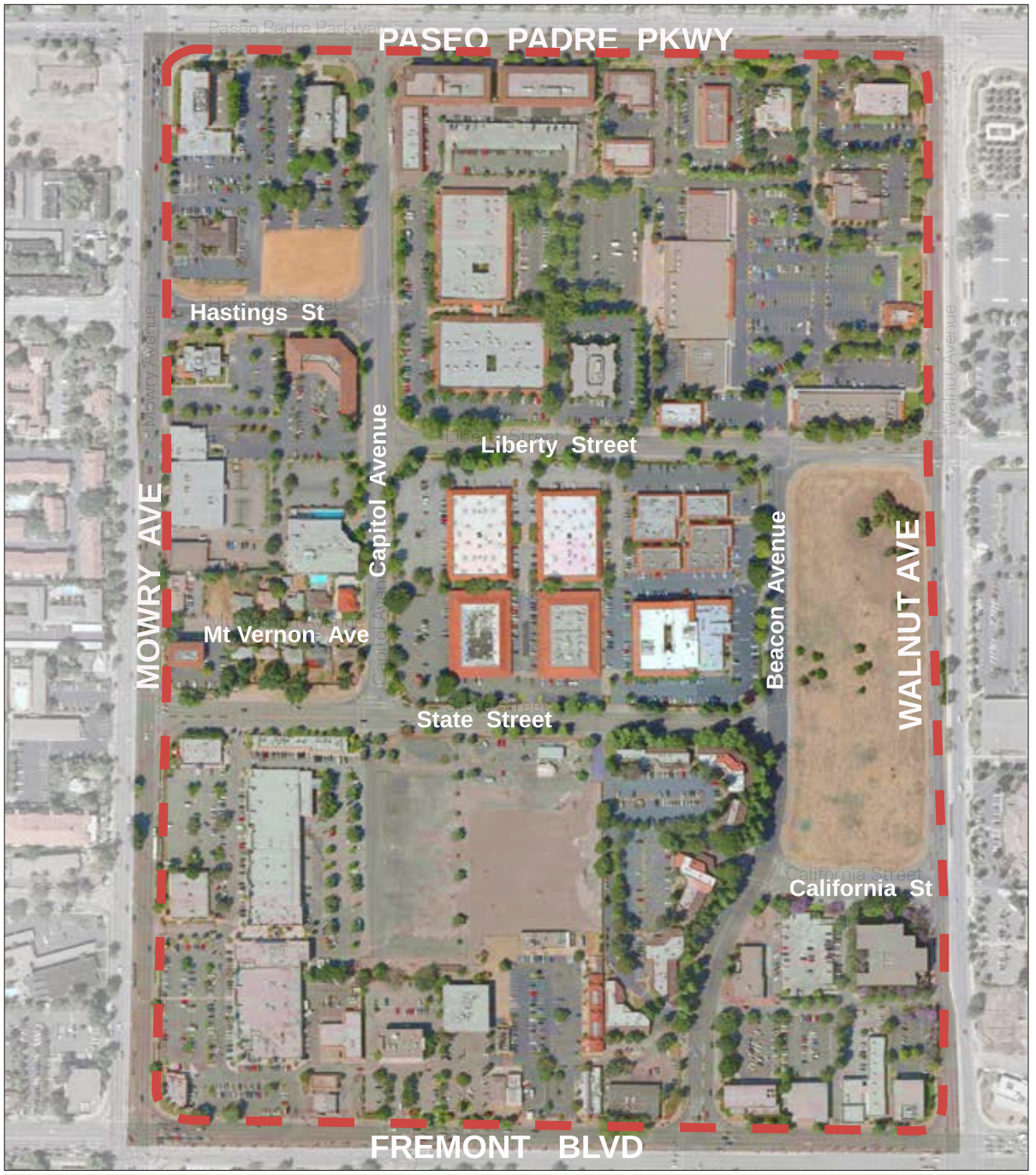

Exhibit 1.5: Aerial of the Downtown Project Area

Existing Conditions

The Downtown District covers 110 acres, of which 100 acres are development parcels and 10 acres are dedicated to public street right-of-ways.

Existing land uses are primarily commercial including: office, retail, neighborhood services, medical and banking facilities. Fremont City Hall is also centrally located here, but there are no public open spaces in the district.

The development pattern is low-density, low-rise buildings fronted by surface parking lots. Building heights are typically 1 - 2 stories with the tallest building on Paseo Padre Parkway and Capitol Avenue at 4 stories. The existing land parcels vary greatly in size and configuration, with building patterns reflecting these irregularities.

The district currently contains 1,125,060 gross square feet of development for an existing floor area ratio (FAR) of 0.28, even though it is zoned for a higher FAR of 0.5 and 0.8 within 1/2 mile of BART. Refer to Exhibits 1.7 and 1.8. There are 15 acres (8%) of vacant or unimproved property, and nearly 50% of the land is paved surface parking lots, highlighting the District's underutilized condition, as illustrated in Exhibit 1.5 Aerial.

Economic Development

While there is a significant supply of retail and office in and adjacent to the Downtown District, a substantial portion of it is low-performing in terms of sales tax generation and lease rates. But more importantly, it does not meet the aspirations of Fremont residents. Currently, there is a clear discrepancy between existing retail offerings in Downtown and the types of retail experiences Fremont residents are looking for. The underlying objective of this planning effort is to capture more of the community's retail spending and to prevent residents from traveling into other cities for their retail needs. Avoiding this 'leakage' will produce significant economic and place-making benefits for Fremont residents and the community.

Findings in the 2008 Economic Study prepared for the City of Fremont as part of the General Plan update indicated that the City could support a broad mix of retail uses in the Downtown because of the existing pent up demand that is currently not being served locally. Supporting this finding is the Downtown demographic profile. Specifically, daytime employment figures are just over 15,000 within a 1-mile radius and over 50,000 employees within a 3-mile radius.

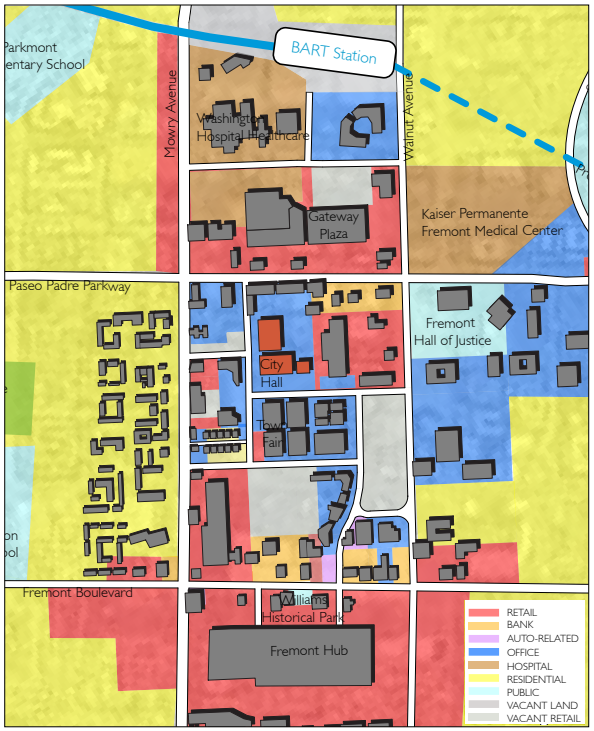

Exhibit 1.7: Existing Land Uses

Existing Downtown Development		
Commercial / Retail	497,980 gsf	44%
City Offices	145,000 gsf	13%
Residential	11,200 gsf (7 du)	1%
Office	470,880 gsf	42%
TOTAL	1,125,060 gsf	100%

Exhibit 1.8: Existing Downtown Development Land Uses
Source: City of Fremont Tax Assessor Records

Exhibit 1.6: Capitol Avenue - City Hall (Existing)

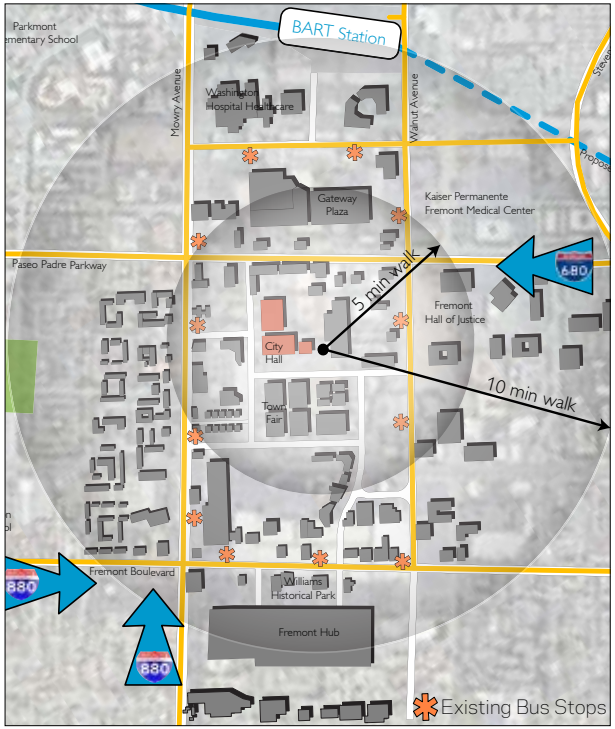

Exhibit 1.9: Street and Transit Access

Downtown is strategically located within walking distance to major employers such as Washington Hospital, Kaiser Permanente Hospital, the Palo Alto Medical Clinic, and the City of Fremont government offices. Downtown is adjacent to two major shopping centers: The Hub and Gateway Plaza and includes the Fremont Plaza Shopping Center.

This suggests that new retail projects could improve the existing retail mix in the Downtown and in the City at large and therefore help to address the community's unmet shopping needs and preferences.

Streets + Blocks

Currently, Downtown contains only 7 large-scale blocks, 7 internal intersections and no through streets, limiting pedestrian and vehicular circulation throughout the area. The streets are very broad, underutilized, and historically, have not allowed on-street parking. The oversized blocks, as long as 1,425 feet, discourage circulation with inconvenient and longer travel times.

Transportation

Downtown is well served by its bordering arterial roadways leading to Interstate Highways 880 and 680. At the City's most heavily-traveled intersection, Fremont Boulevard and Mowry Avenue, traffic counts exceed 75,000 vehicles a day. Alameda County (AC) Transit provides bus service linking to the BART station via seven (7) local routes by the District. The Fremont BART station is located two blocks east of Paseo Padre Parkway, Downtown's boundary.

Exhibit 1.6 continued from facing page

Bicycle Circulation Network

The District is served by a discontinuous City bicycle network with limited amenities. Dedicated bike lanes on Walnut Avenue and Paseo Padre Parkway lead to the BART station. Additional, newer bike lanes occur on Fremont Blvd., State and Liberty Streets, as well as Mowry, Beacon and Capitol Avenues.

Parking

The District's parking needs are served almost exclusively by on-site private surface parking lots based on standard suburban parking ratios. Until recently, no shared parking or street parking existed, however, the City has started to test and implement street projects: on-street parking has been installed recently on State and Liberty Streets and a pilot project with restriping for narrowed lanes and back-in parking was installed and tested with community surveys. It was determined that the back-in parking configuration would not be proposed in the re-design of Capitol Avenue.

Utilities

Public utilities are generally provided within the existing street grid. The area is well served and has sufficient capacity for near-term development projects. Adjustments to the systems will be required as the new roads and development occur. Utility service providers include: Water: Alameda County Water District; Sanitary Sewer: Union Sanitary District; Storm Water: City of Fremont; Gas + Electric: Pacific Gas + Electric; and Telecommunications: AT&T and Comcast.

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2.0 DISTRICT FRAMEWORK

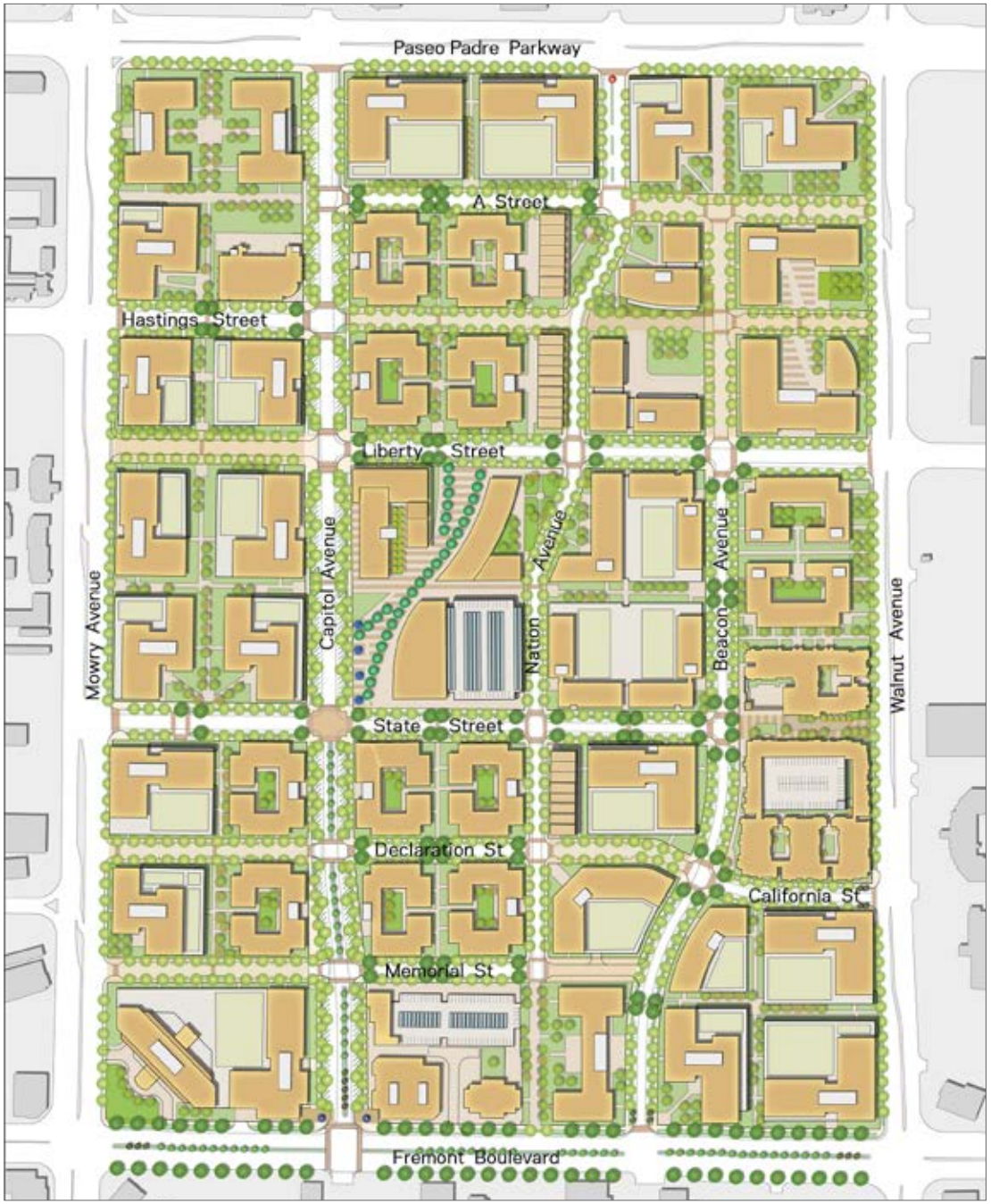


Exhibit 2.1: Illustrative Redevelopment Plan

2.1 STREET + BLOCK FRAMEWORK

To revitalize the Downtown District and spur economic development, a fundamental requirement for creating a more walkable destination is the adjustment of the existing street and block plan. The limited number of entry roads, lack of through roads, as well as the lack of pedestrian and bicyclist amenities discourage access, circulation and visibility into the district. As a result, the area is largely underutilized with no street activity.

With clearer, more frequent access points and better circulation flow, the increased traffic via foot, bike and car (and eventually, a shuttle or trolley) will help support commercial and mixed-use development within the district.

The proposed Street + Block Plan will create a new environment that supports a:

- Cohesive and distinct Downtown District that serves an urban center
- A pedestrian-friendly retail destination with a mix of businesses
- A complete street network with better access points
- Clear gateways to access Downtown
- Flexible block sizes for various land uses

The Plan responds to these objectives by creating: smaller, more walkable block sizes; narrower, more frequent through streets adjacent to new public open spaces; a recognizable hierarchy of streets; and more gateway entry points into the Downtown District. The Street Plan creates a new "Main Street" by extending Capitol Avenue west to Fremont Boulevard (Capitol Avenue currently

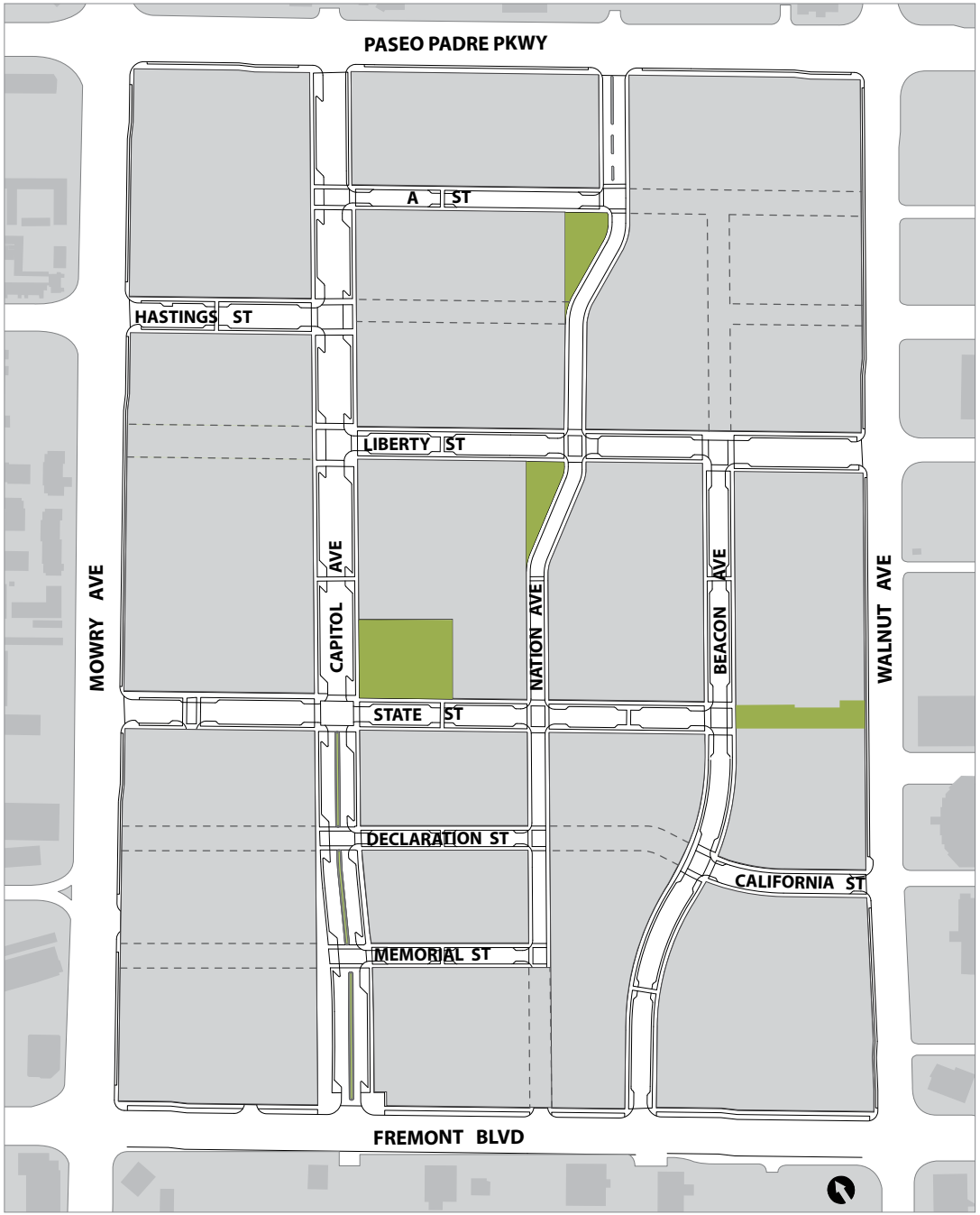


Exhibit 2.2: Street + Block Plan

terminates at State Street), linking The Hub Shopping Center to the west to the Gateway Plaza Shopping Center to the east, creating a significant City Center retail spine.

The proposed Street + Block Plan will include: (see Exhibit 2.2)

New Streets:

- Capitol Avenue extension – from State Street to Fremont Boulevard
- 1 new east - west street: New Middle Road
- 3 new north – south streets: A, B, and C Streets

New Public Open Spaces

- Civic Center Park
- 3 new civic parks

Improved Pedestrian Accessibility:

- Shorter blocks
- Mid-block pedestrian crossings
- Intersection sidewalk bulb-outs
- Pedestrian and vehicular easements
- Pedestrian, transit and bike amenities
- On-street parking and bicycle lanes
- Potential pedestrian scramble at the Capitol Avenue and State Street intersection
- Accessible ramps at crossings

Improved Sustainable Elements:

- Stormwater management system
- Increased permeable landscape areas
- Reduced surface parking lots
- More dense, compact development
- Improved access to transit

Streetscapes

Streets provide the framework of a vibrant community, providing a civic space for pedestrians to mingle, shop, dine and recreate while moving bicycles, cars, and buses, through and within the district. Capitol Avenue, extended to connect to Fremont Boulevard, is to be the main central spine with landscaped medians, diagonal street parking, and wide, amenity-rich sidewalks. Streets leading off of Capitol Avenue are important connectors to the adjacent arterial roadways and street grid. A new east-west roadway leads from Downtown's center in the direction of the Fremont BART Station, providing a clear and easy ten-minute walk. The remaining streets create the stage for community interaction and connections.

The proposed Street + Block Plan for the Downtown District, sets the framework for a highly sustainable, economically robust and livable community.

Land Use

The Land Use Plan for Downtown is intended to balance long-term market flexibility with specific focused development patterns to create a viable and cohesive district. The Plan allows a majority of parcels to be either commercial or residential in use, while retail is prioritized for Capitol Avenue and its adjacent arterial roadways. Fremont's new Civic Center, located in the center of Downtown, is intended to create a public realm and focal point with municipal parking conveniently located for the neighborhood. The municipal parking could be used in the off-peak hours by adjacent uses.

Development Density

This Plan increases the allowable density in Downtown to be in the range of 0.80 to 1.5 floor area ratio (FAR), or a potential of 2,860,700 gross floor area (gsf) to 5,363,800 gsf of development. The denser, compact development will create a more walkable and dynamic environment for Downtown.

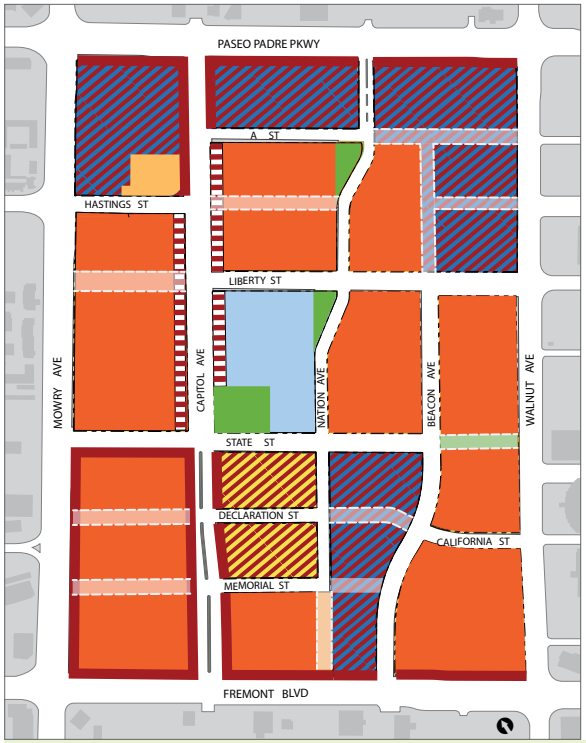


Exhibit 2.3: Conceptual Land Use Map

Existing Downtown Development	
Commercial / Retail	497,880 gsf
City Offices	145,000 gsf
Office	470,880 gsf
Residential	11,200 gsf
Residential Units	7 dwelling units
TOTAL - 0.28 FAR	1,125,060 gsf

The current zoning for the area has a control FAR of 0.8 for parcels within 1/2 mile of the Fremont BART station and 0.5 FAR for all other parcels, which translates into a potential of 2,364,400 gsf of development. The actual existing square footage of Downtown is 1,125,060 gsf, which is an FAR of 0.28 showing the district is underutilized.

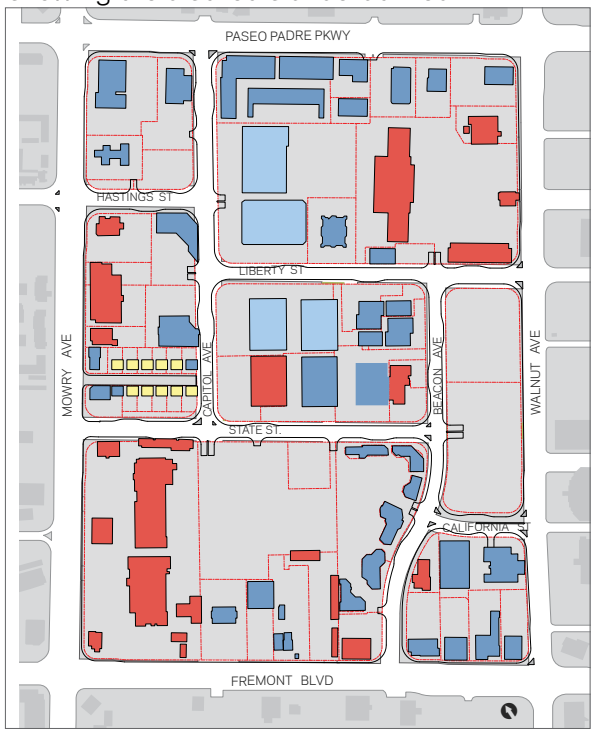


Exhibit 2.4: Existing Downtown Development

Near-Term Development - Projected	
Commercial/Retail	400,000 gsf
City Offices / P.Arts	250,000 gsf / 28,000 gsf
Office	705,000 - 1,905,000 gsf
Residential	2,000,000 - 800,000 gsf
Residential Units	2,000 - 800 dwelling units
TOTAL - 0.8 FAR	3,383,000 gsf

The near-term development scenario increases residential uses, currently the stronger market and necessary to create a more vibrant Downtown. Two permitted mixed-use projects are included. Existing, thriving commercial properties remain. A new City Center with performing arts center (P.Arts) creates a destination. FAR of 0.8 is minimum density.

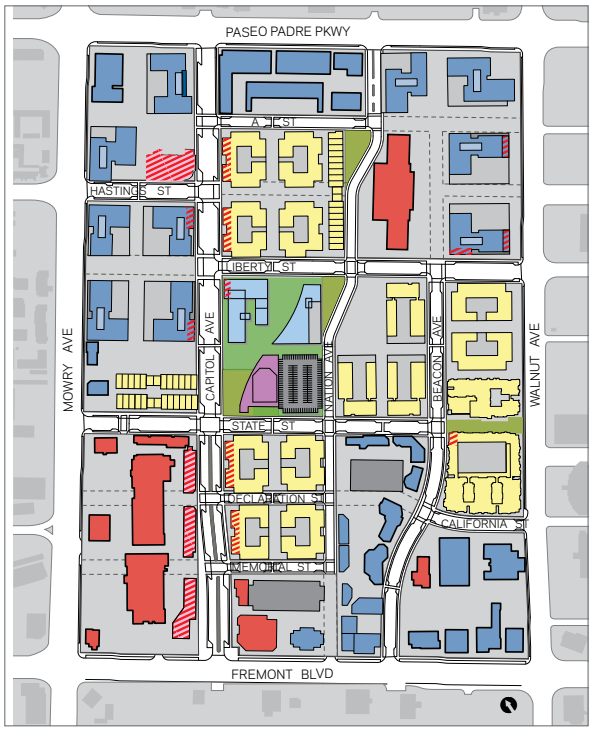


Exhibit 2.5: Projected Near-Term Development

Long-Term Development - Projected	
Commercial/Retail	500,000 gsf
City Offices / P.Arts	250,000 gsf / 28,000 gsf
Office	2,000,000 gsf
Residential Units	2,500,000 gsf
Residential Units	2,500 dwelling units
TOTAL - 1.5 FAR	5,278,000 gsf

The long-term development scenario represents the maximum development program allowable under the current CEQA analysis, in progress for 2012 approval. To respond to future market demands, a range is given for permitted office and residential development. In total, however, the program cannot exceed a 1.5 FAR, or 5.2 million gsf.

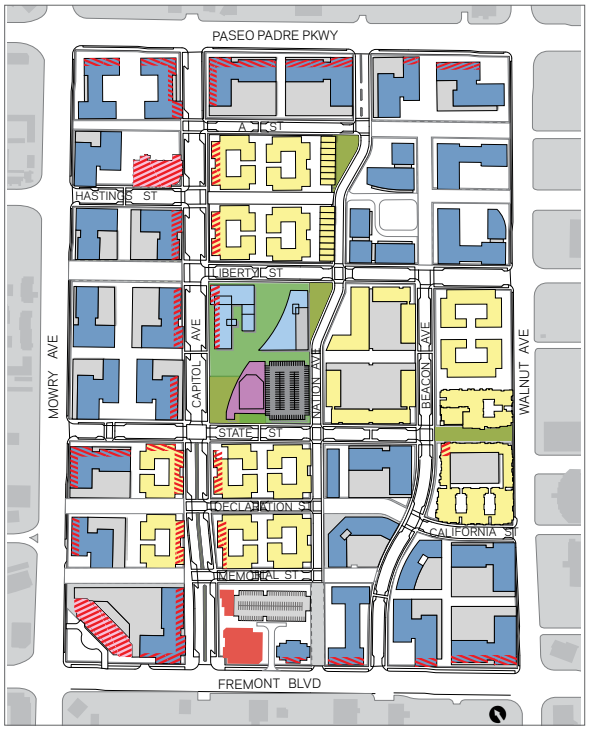


Exhibit 2.6: Projected Long-Term Development - Office Option

Civic Parks + Open Space

A key feature of creating a new identity for the Downtown District is a distinctive public realm, providing a variety of publicly accessible places from individual respite to large public gatherings. These spaces provide a variety of landscapes, scales and uses to support a thriving mixed-use district. Further, this network of public spaces is enriched by an extensive District Art Program, encouraging exploration and enlivening the experience of residents and visitors through out Downtown. The landscaped streets and parks also provide important sustainable benefits beyond quality-of-life including a reduction of heat island effect and providing public stormwater management. Three elements that provide a framework to the public open space, are:

Streets and Circulation Easements - The streets and easements provide a continuous network linked by a new Art Walk to encourage pedestrians and cyclists to explore a lively retail, commercial and residential environment.

Civic Center - Centrally located and providing a large public plaza, the City administrative offices, and a performing arts theater will also include adjacent parking facilities to support staff, visitors and nearby businesses.

Civic Parks - There are three proposed landscaped civic parks: two situated on City-owned property and adjacent to the proposed New Middle Road that serves pedestrians and bicyclists enroute to the BART station and one civic park is located at the end of State Street adjacent to Beacon Avenue in a new residential project.

Exhibit 2.7: Civic Space: Veterans Memorial - Walnut Creek, CA
Copyright: Cliff Garten Studio Source: Rik Sferra

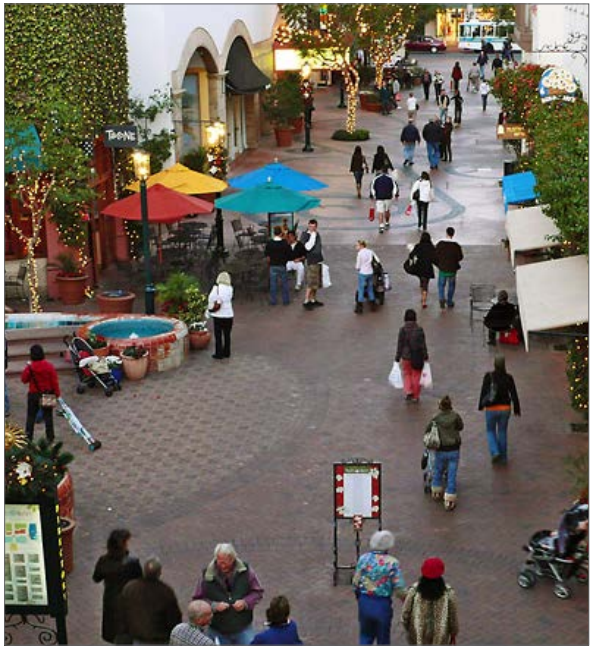


Exhibit 2.8: Pedestrianway: Paseo Nuevo - Santa Barbara, CA

Exhibit 2.9: Public Plaza: Santana Row - San Jose, CA

2.2 TRANSPORTATION + CIRCULATION SYSTEMS

This plan incorporates "complete streets" design concepts that accommodate all travel modes so that driving is an option, but not a necessity. The City's goals in this Community Plan attempt to meet both the mobility as well as parking needs of existing businesses, visitors, and employees while also accommodating the future development planned for Downtown. This will require creation of a truly multi-modal transportation system.

This section summarizes recommended improvements to the transportation system serving the Downtown District in order to accommodate all modes, including private automobiles, transit vehicles, delivery trucks, emergency vehicles, bicyclists, and pedestrians. The primary goals of these improvements are to:

- Create streets that are comfortable and convenient for pedestrians, so that walking is a pleasure and accessing residences and businesses is easy.
- Improve access to bus and rail transit and enhance transit passenger amenities at transit stops.
- Make the Downtown District a bicycle-friendly neighborhood, so that residents and visitors of all ages and abilities can feel comfortable and secure biking to work, services, and recreation trips.
- Create a roadway network that accommodates necessary automobile circulation but strategically manages vehicle volumes and speeds to minimize the negative impacts that auto traffic has on other modes of travel.

The improvements discussed below will make the Downtown District a regional model of a new mixed-use neighborhood with a truly "multi-modal" transportation network, integrating bicycle, bus, and BART access. The network will play a critical role in supporting the redevelopment of the district by providing expanded mobility choices for Downtown employees, residents, and visitors.

Vehicular Access

Existing Traffic Circulation + Parking

The existing traffic circulation of the Downtown District follows the existing suburban road pattern with discontinous internal streets feeding the surrounding arterial roadways. Mowry Boulevard is a four-lane arterial bounding the District that connects to I-880 and Mission Boulevard and carries the most volume of traffic in the area. It follows suit that the most collisions occur along Mowry Boulevard at the Paseo Padre Parkway, Hastings Street, and Fremont Boulevard intersections.

The District's existing internal roadways form a pinwheel configuration, creating dead-end streets that confuse way-finding, extend pedestrian walk routes, and discourage local through traffic.

Existing parking within the District is largely accomodated on-site with limited street parking. The City's requirements are comparable to other suburban Bay Area

Exhibit 2.10: Current Downtown Intersection
The current design of most intersections in the Downtown District, with wide turning radii and free right turn "slip lanes," encourages higher vehicle speeds and reduces pedestrian comfort when crossing streets.

Exhibit 2.11: Proposed Public Right-Of-Way Example

cities: office and commercial uses require one space per 300 square feet of floor area. Parking is mostly provided on surface lots along the street frontage, creating deep building setbacks from the street. Much of this parking seems to be in excess of demand, creating large vacant paved areas.

Proposed Vehicle Conditions

The proposed Street + Block Plan (see Exhibit 2.2) for the Downtown District should help address some of the connectivity issues by improving through connections and increasing the density of the street grid. Such an arrangement will allow vehicle traffic to be more evenly distributed throughout the District, provide more direct access to major arterials on the District's borders and provide improved access to local parcels.

Based on the proposed street network, Capitol Avenue would be extended to become the new primary street through the district, providing access to existing, and several proposed north-south streets. A new east-west street would be added parallel to and south of Capitol Avenue to provide additional connectivity, access, and to supplement vehicle movements on Capitol Avenue. These improvements would assist in developing a more efficient vehicle circulation network and one that would more effectively serve local employees, businesses, residents, and visitors.

Pedestrian Conditions

Existing Pedestrian Conditions

Wide traffic lanes and the overall width of the right-of-ways on Fremont Boulevard, Mowry Avenue, Paseo Padre Parkway, and Walnut Avenue encourage higher vehicle speeds, thereby reducing pedestrian connectivity and comfort. Numerous studies have shown that wider roads result in higher vehicle speeds which in turn result in increased pedestrian collisions and increased severity of pedestrian injury or death when collisions do occur.

The current configuration of intersections in the Downtown District also encourages higher vehicle speeds; the intersections tend to feature large, sweeping curb radii which enable drivers to turn corners at high speeds. Small, tight curb radii force vehicles to slow down when making a turning maneuver, therefore giving them additional time to see pedestrians entering the crosswalk and longer reaction times to avoid a collision. The District's existing intersection designs also tend to feature free right turn "slip lanes" which encourage higher speed turning across pedestrian crosswalks. These slip lanes are often accompanied by pedestrian refuge islands (also called "pork chops" due to their shape). The refuge islands have some benefits, in that they break-up long crossing distances into separate segments and allow pedestrians to concentrate on one lane of traffic at a time. However, "pork chop" intersections (with two separate crosswalk segments angled at 45 degrees) can impose some challenges for pedestrians with visual or

Exhibit 2.12: Existing Wide-Street Pedestrian Crossing
Existing streets in the Downtown District are auto-oriented and excessively wide, contributing to poor pedestrian environment.

Exhibit 2.13: Existing On-site Pedestrianway at Fremont Plaza

Exhibit 2.14: Proposed Sidewalk Cafe Example, Livermore, CA

mobility impairments, as well as a false sense of security.

Although the Fremont BART Station creates the largest need for high-volume pedestrian routes, there are no direct pedestrian routes to and from the Downtown District and the existing Fremont BART station. As a result, many pedestrians use the Gateway Plaza Shopping Center parking lot as an informal path, but this is not an ideal walking route. The pedestrian access route to the BART station poses challenges for pedestrians, including poorly marked crosswalks, numerous curb barriers and grade changes.

Currently, the Downtown District is predominantly office, commercial, and civic uses, with buildings set far back from the street. The sidewalk and front doors of these buildings are separated by a wide swath of landscaping or parking, resulting in little visual interest, no direct accessible path for pedestrians, and deadening the sense of vibrancy in the pedestrian realm.

Proposed Pedestrian Conditions

Given the current amount of right-of-way on the majority of streets in the Downtown District, there is great potential to create a high-quality and comfortable walking environment on all streets. This will involve re-allocation of a large portion of underutilized right-of-way to pedestrians and making a significant financial investment in pedestrian amenities such as landscaping, street furniture, and street trees.

Creating a high-quality pedestrian realm that not only facilitates pedestrian mobility and encourages an active street life, the District's proposed pedestrian network will help create a sense of place that makes people want to linger longer rather than rush through the District to get to their vehicle or destination. This will directly support and drive the economic revitalization of Downtown as numerous studies have shown that people spend more money in pedestrian-oriented shopping districts compared to adjacent auto-oriented shopping districts.

In order to achieve these goals, the following pedestrian design measures shall be implemented in the Downtown District.

Primary pedestrian streets: 15′ wide sidewalks shall be provided on both sides of all primary pedestrian streets, including commercial, civic, and mixed-use streets such as Capitol Avenue, Liberty Street, State Street, Hastings Street and Beacon Avenue. More generous sidewalks will allow for better pedestrian circulation (especially at peak times) while also providing ample space for enhanced pedestrian/place-making elements such as street trees, pedestrian-scaled lighting, art and street furniture. A 15′ wide sidewalk also ensures adequate room for businesses to provide outdoor dining for customers without impeding the required pedestrian path and customer comfort.

Secondary pedestrian streets: 10′ wide sidewalks shall be provided on all secondary pedestrian streets, including residential side streets. These new roads include: New Middle

Exhibit 2.15: Curb Bulb-Out Sidewalk
Curb bulb-outs will be installed wherever feasible to: reduce pedestrian crossing distances, increase pedestrian visibility when crossing streets, and reduce speeds of turning vehicles.

Exhibit 2.16: Ladder-style Crosswalk
Crosswalks at intersections and mid-blocks will be marked as appropriate to clearly demarcate areas where motorists can expect pedestrians to be crossing the street.

Road, A Street, B Street and C Street. This sidewalk width provides adequate capacity for a moderate degree of pedestrian traffic and space for street trees, other pedestrian buffers, and place-making elements, but at a scale that is appropriate for narrower residential streets.

Intersections: The Downtown District pedestrian network shall follow the best practices in pedestrian-oriented intersection design. Key intersection design principles for the District's pedestrian network includes:

- Tighter curb radii at all intersections to improve real and perceived comfort crossing the streets in the Downtown District, and to slow down vehicles to give motorists more time to see. Faster turns for emergency vehicles will continue to be accommodated from the outer lane, centerline, or opposite lane and turning into opposing travel lanes.
- "Bulb-outs" (also called 'Curb Extensions') will be installed at all intersections as necessary and feasible. Bulb-outs visually narrow the roadway, creating a "traffic calming" effect on vehicle speeds. As pedestrian volumes in the Downtown District increase with new development, bulb-outs will also benefit motorists: as pedestrian crossing distances are reduced, the time required for pedestrians to cross is also reduced, thereby reducing motorists wait time (Exhibit 2.15).
- "Ladder-style" or other distinctive pavement markings in crosswalks will be added to improve visibility and demarcation of the crosswalk space for motorists (Exhibit 2.16).
- Signal timing at major intersections should be increased as density in the District increases to allow more time for pedestrians to safely cross the street.
- A "Scramble Intersection" may be installed at the intersection of Capitol Avenue and State Street when pedestrian volumes increase in order to minimize vehicle queuing due to pedestrian traffic. Scramble intersections stop traffic in all directions at once so pedestrians can cross any way they wish, including diagonally. Conversely, the intersections stop all pedestrians so vehicles can turn without interference from pedestrians in the crosswalks. The roadway would be raised as a "table" with special paving to denote the unique function of this intersection. This design would include a higher street or lower curbs to accommodate wheelchairs and strollers (Exhibit 2.17 and 2.18).
- "Table Speed Bump" (speed tables) at intersections or crosswalks are areas of raised roadbed from curb-to-curb that are intended to slow and caution vehicles of crossing pedestrians. It eliminates the curb or ramp needed to cross the street, giving the pedestrian priority in convenience and accessibility (Exhibit 2.19).

Exhibit 2.17: Scramble Intersection and Ladder-style Cross-walk Markings Toronto, Canada

Exhibit 2.18: Typical Scramble Intersection Sign. USDOT FHA

Exhibit 2.19: Table Speed Bump Palo Alto, CA

Public Transportation

Existing Transit Conditions

The Fremont BART station location is two long blocks to the east of the District. In addition, a number of AC Transit routes begin and travel along all arterials surrounding the Downtown and end their service at the BART station providing connections to other areas within Fremont as well as cities located in the East Bay and South Bay areas.

In March 2010, the Downtown District experienced transit service modifications as a result of system-wide AC Transit service reductions. These service modifications took many existing line services and converted them into local circulator service. While most areas will still receive a similar level of public transit service, until the prior line services are restored, ridership will likely be negatively affected by these modifications because they no longer connect to as many destinations. The service modifications do not change overall headways, which are 30 minutes or greater for all routes traversing through Downtown.

Exhibit 2.20: AC Transit Bus

Proposed Transit Conditions

AC Transit bus service will play a critical and continued role in providing access and mobility for Fremont Downtown residents, employees, and visitors. With this in mind, transit infrastructure improvements should be considered to ensure that AC Transit can provide reliable and comfortable service within Fremont, and specifically within the Downtown District. Passenger amenities such as upgraded transit shelters, real-time service information, and improved signage would provide riders added benefit and comfort. Improvements to transit operations such as bus bulbs, transit-priority signals, and queue-jump lanes would ensure improved transit performance and reliability. The City of Fremont should continue to work with AC Transit to advance the implementation of these types of amenities when appropriate.

Due to Downtown's future potential for growth, and relative proximity to a variety of destinations, including BART and Altamont Commuter Express (ACE) trains, a Downtown-specific branded trolley bus circulator service might play an important role in supplementing current AC Transit service as buildout of the District intensifies. Such a service could be designed to meet the travel needs of Downtown workers and residents, but with a specific emphasis on carrying shoppers and/or persons not accustomed to riding AC Transit buses. As part of a possible future Transportation Demand Management Program, a shuttle with a high level of passenger amenity could carry shoppers to and from the BART station or a parking facility or to destinations in the District that may be perceived as too far to walk. A circulator bus shuttle could be operated at higher frequencies than AC Transit buses or a rail trolley and could be timed with the arrival and departure of BART, Capitol Corridor and ACE trains.

As density and intensity of the Downtown develops over time an additional opportunity includes creating a bus rapid transit (BRT) or rail trolley line down Fremont Boulevard to connect various uses throughout Fremont along its alignment. Although the specifics and destinations of such a line have yet to be fully analyzed, it could provide complimentary support for Downtown in providing local access and economic development opportunities. A Fremont Boulevard rail trolley would be a long-term goal for the District and City as funding sources for capital costs and operations would need to be identified.

These transit recommendations are based on the current and planned transit services within the District. Future transit stop locations in the Downtown District will be located with consultation from the aforementioned transit systems.

Currently, the BART line terminates at the Fremont station. However, by 2018, BART is to be extended 15 miles south of the Fremont BART Station, to Warm Springs, which will place the station in the "middle" of the BART system. The additional miles and potential riders greatly improves access to the Fremont Station.

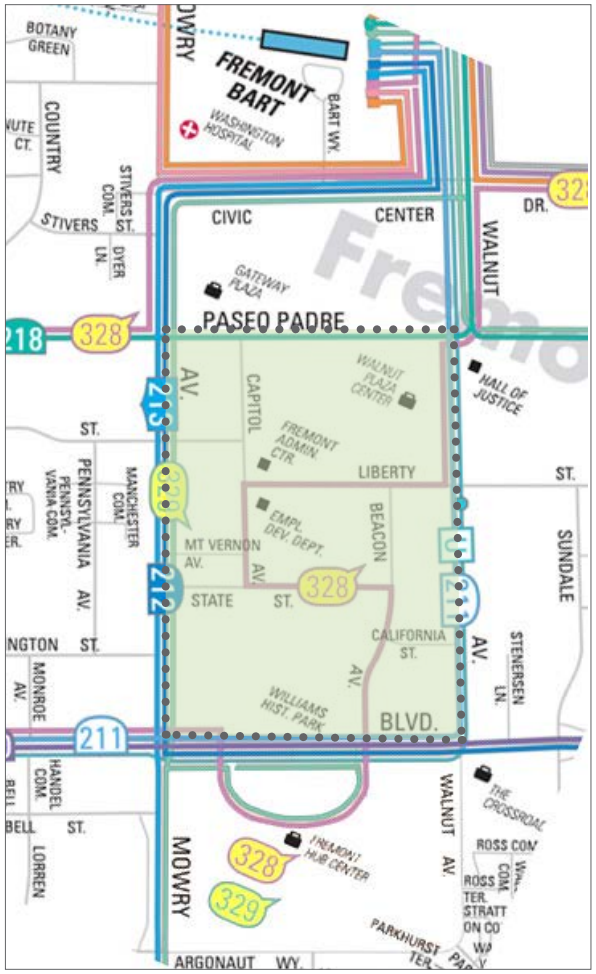
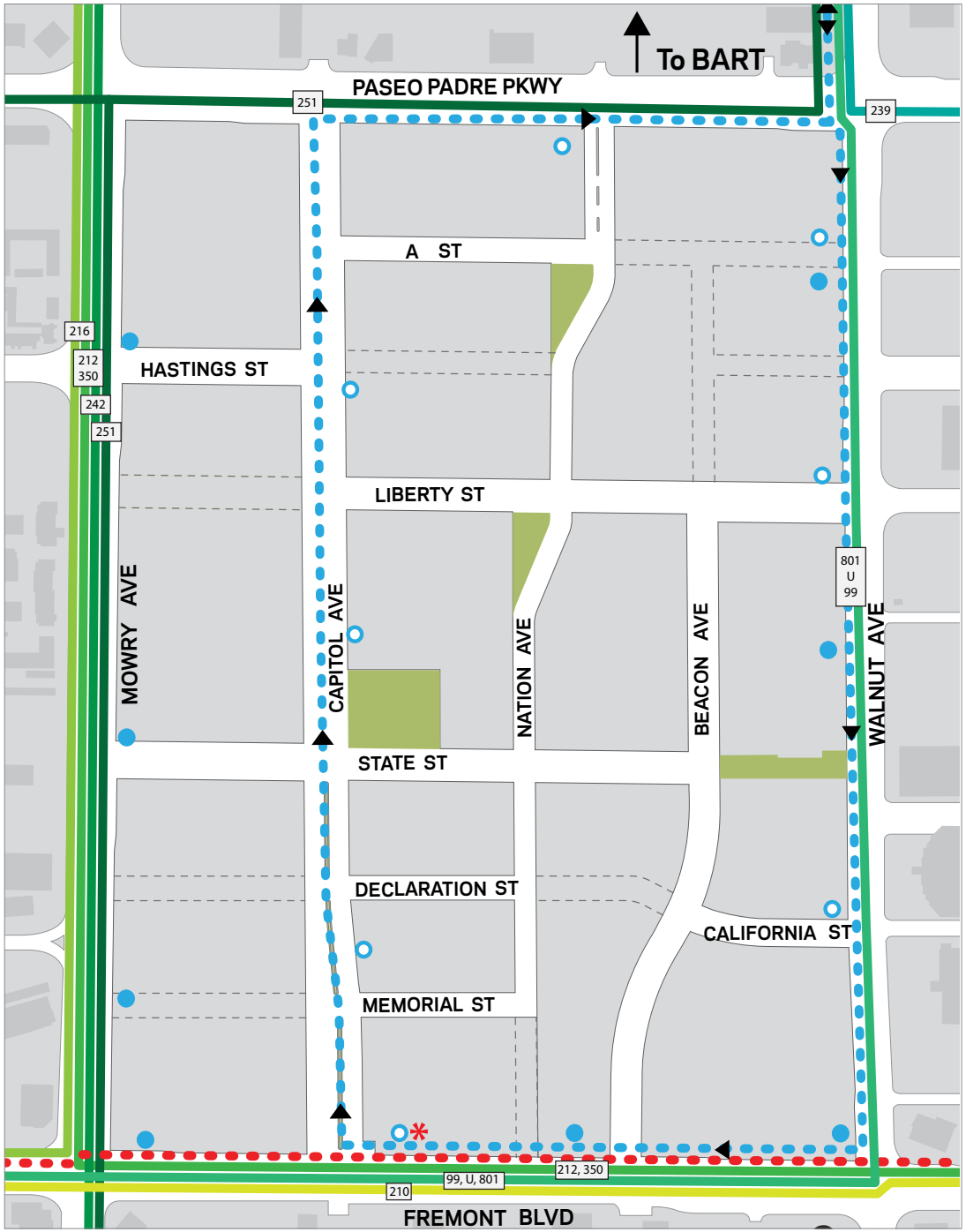


Exhibit 2.21: Existing Downtown AC Transit Bus Service Route

- 210
- 212, 530
- 239
- 242
- 99, U, 801
- 251

Exhibit 2.22: Proposed Public Transportation Map (right)

- Proposed Downtown Circulator Shuttle
- Proposed Downtown Circulator Stop
- Proposed Fremont Blvd. Trolley
- Proposed Fremont Blvd. Trolley Stop
- Existing Bus Stops



Bicycle Circulation

Existing Bicycle Conditions

The Downtown District is relatively well-connected by bicycle to the north, west, and east with bike lanes that connect to regional destinations. These connections branch from Walnut Avenue and from the corner of Paseo Padre Parkway at Mowry Avenue, connecting Downtown through an unbroken bikeway network to destinations such as Fremont Central Park, Fremont BART station, Washington Hospital, the Alameda Creek trail and Quarry Lake Regional Recreation Area. The Fremont-Centerville Station for Capitol Corridor and ACE rail services lies along the bike lane network. From the Quarry Lake Regional Recreation Area, the bike lanes connect to a separated bike path system along the Alameda Creek Trail which leads from Niles Canyon out to the bayshore at Coyote Hills Regional Park.

To the south the Downtown District is less connected by bicycle, offering bike lanes on Paseo Padre Parkway, Fremont Boulevard, and other on-street bike routes. The Glenmoor, Sundale, and 28 Palms neighborhoods to the west are primarily residential in character, though there are several schools and also several retail centers. The shortest routes from Downtown to regional destinations such as the City of Newark and the Dumbarton Bridge also lie to the west of Downtown.

Within the Downtown District, existing bicycle infrastructure includes:

- Bike Lanes (Class II) on Mowry, Walnut, Beacon, and Capitol Avenues, Fremont Boulevard, Paseo Padre Parkway, and State and Liberty Streets.

Proposed Bicycle Conditions

In order to improve bicycle convenience, comfort, and connectivity to and from the regional bicycle network, business and residences in Downtown, and major transit centers, this Community Plan expands the current bicycle network within the plan area as follows:

- All major through streets in the north-south and east-west direction would be designated bike lanes (Class II);
- All major streets in the east-west direction designated bike lanes (Class II), with the exception of Mowry Avenue;
- Minor streets within the Downtown District would be designed as "shared/green streets" enabling cars, pedestrians and bicycles all to utilize the entire right-of-way at slower speeds.
- Bicycle racks will be provided at convenient points along the commercial streets.
- On-site bicycle amenities such as parking, storage and changing rooms will be provided per the new CalGreen code requirements.

Exhibit 2.23: Existing Bicycle Route (Class III) on Mowry Ave.

Exhibit 2.24: Bike Lanes (Class II shown)
A variety of bike paths, lanes will be implemented in the Downtown District as appropriate for each street type. In addition, short segments of residential streets could be designed as shared/green streets where bikes, pedestrians, and slow-moving autos share the same roadway space.

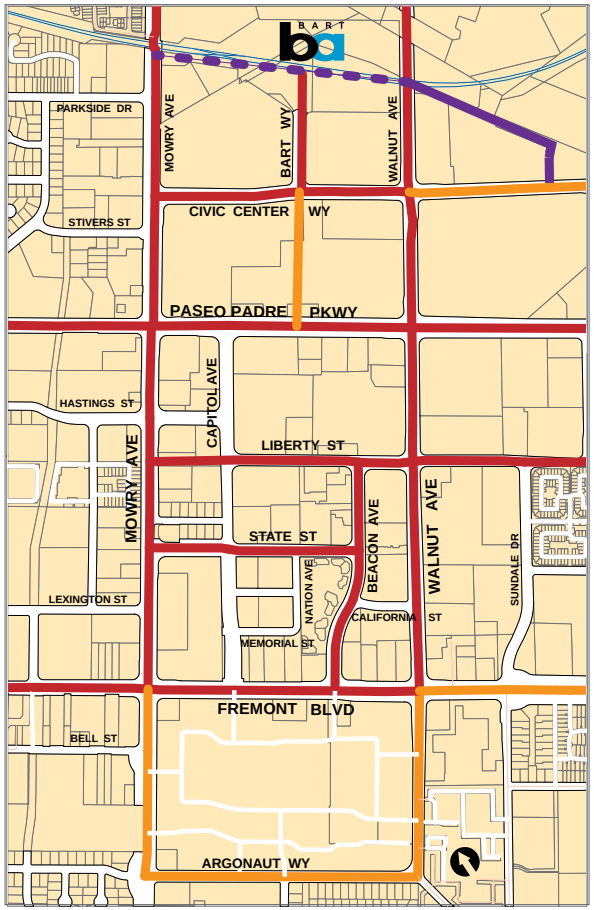


Exhibit 2.25: Existing Downtown Bicycle Circulation Map (top)

- Bike Lanes (Class II)
- Bike Routes (Class III)
- Shared Use Paths

Exhibit 2.26: Proposed Downtown Bicycle Circulation Map (right)

- Existing Bike Lanes (Class II)
- Existing Bike Routes (Class III)
- Existing Traffic Signals
- Proposed Bike Lanes (Class II)
- Proposed Bike Routes (Class III)
- Proposed Traffic Signal

2.3 PARKING PLAN

A critical component to the successful revitalization of the Downtown District is to develop a well managed parking supply that adequately addresses the current and future needs of the area. The City of Fremont's current parking requirements are fairly standard for a suburban community; however the vision for the Downtown District is to create a transit-oriented, pedestrian-friendly community.

It is critical to the economic vitality of the proposed redevelopment of the Downtown District that the appropriate amount of parking is provided to meet estimated demand.

For the Downtown District to be a unique place to live, work, and shop, and in order to achieve this vision, it will be critical to get parking standards and implementation programs correct. This means developing a parking plan that:

- Provides certainty so that the District will always be adequately parked;
- Create parking options to allow developers to choose the best way to meet (or reduce) their parking demand;
- Implement supportive and complementary trip reduction strategies such as improving public transit availabilities, car sharing and potentially subsidizing public transit passes; and
- Provide market based flexibility rather than static parking standards to minimize the footprint of parking as land use, and adapt to economic conditions, and social needs change over time.

Existing Parking Design + Policies

The City of Fremont's existing parking requirements are conventional for a suburban community. That being said, the zoning code describes special circumstances in which standard parking requirements would not be applicable or appropriate. For example, parking requirements are waived for minor additions or intensification of uses in certain town centers and in mixed-use districts. Parking requirements may be waived at the discretion of the zoning administrator and/or planning commission, so long that parking has been provided on-site and off-site within 400' for patrons and 700' for employees to the maximum extent feasible and that sufficient on-street parking exists, among other requirements. Finally, the zoning code allows for reductions in parking requirements for various scenarios where parking demand, in theory, should be less. Example scenarios include: where development is in close proximity to public transportation; where mixed-use development may share parking; and finally, in situations where mode share may include higher numbers of cyclists. These types of flexibility are proposed to be carried forward along with new standards and policies that support development within the Downtown District.

New Parking Standards + Policies

The following parking standards and policies are intended to provide flexibility, respond to market conditions, and address a mix of land uses as the District development evolves over time.

These standards and policies also seek to:

- Minimize exclusive-use parking so that costs associated with parking can be minimized;
- Ensure parking can be convenient and easy-to-find (the 'Park Once' philosophy); and
- Provide parking that supports transit and pedestrian circulation goals of the Plan.

The policies that follow are intended to create greater flexibility for developers while reserving tools for the City to address demand patterns as the District gets built out over time.

Exhibit 2.27: Smart & Final Store Parking Lot
Fremont Downtown District. Approximately 50% of the Downtown District is currently underutilized surface parking.

Base Parking Requirements

The following base parking policies and requirements are set forth in the City's Zoning Code and shall be observed. Additional requirements apply as set forth in the parking policies that follow in Chapter 4 Private Development. Other potential City parking strategies are also listed below. (13 policies and 14 strategies; City implementation tools and programs)

Parking Policies:

PP-1: There shall be minimum and maximum on-site parking requirements. Projects wishing to provide less parking than the required minimum may elect to secure off-site parking through an agreement, pay an in-lieu fee, or if proposed reduce their minimum parking burden by agreeing to provide non-exclusive parking.

PP-2: On-street parking shall not be counted toward individual site parking requirements. On-street parking supply shall be used to satisfy the City's normal residential visitor requirements and provide additional parking to off-set the lower commercial parking standards allowed within the basic requirements above.

PP-3: On-site parking within surface lots containing more than 10 stalls shall remain open for non-exclusive use while structured parking may be available for exclusive or non-exclusive use.

PP-4: Bicycle parking shall be provided for all projects. Four bicycle and/or two motorcycle parking spaces may be substituted for one vehicle parking space wherein the maximum number of vehicle parking spaces displaced shall not exceed 20% of the total parking supply.

Parking Strategies:

PS-A: Identify potential sites for public parking facilities, develop a funding mechanism (such as development impact fee assessed on vehicle trips or a parking in lieu fee), and pursue legal authority if needed to ensure the timely development of public parking facilities that are shared amongst multiple uses. The purpose of public parking facilities would be to support the goal of individual developments minimizing their stand-alone parking and to accommodate peak parking loads as existing surface parking lots redevelop.

PS-B: Establish Transportation Demand Management Program for the District and consider establishing an impact fee for projects that elect to provide more parking than the base requirement unless such additional parking is made available for non-exclusive use.

PS-C: In the event parking supply and demand becomes unbalanced the City should re-evaluate and adjust parking minimums and maximums.

PS-D: If parking spillover issues become a significant problem as build-out of the Downtown District proceeds over time, the City should develop enhanced strategies to limit spillover parking issues into adjacent residential areas and parking facilities. These strategies could include time limits and/or permit-only parking for on-street parking. This could well require additional police and traffic enforcement hours; however, the task could also be handled through a public-bidding process to a private-sector franchisee. The enforcement program could use enforcement vehicles equipped with automated license plate recognition units to minimize the resources needed for enforcement.

Downtown District Parking Requirements			
Type of Use	Minimum (non-exclusive use)	Minimum (Exclusive Use)	Maximum
Assembly Uses	1:5 seats	1:4 seats	1:3 seats
Commercial Uses (non-medical)	1:400 gsf	1:300 gsf	1:200 gsf
Medical Uses	1:300 gsf	1:250 gsf	1:200 gsf
Residential Uses	0.75 space/dwelling unit	1 space/dwelling unit	2 spaces/unit

Exhibit 2.28: Downtown District Parking Requirements

Operational Efficiencies

Improving parking operation efficiency reduces the physical footprint of parking, thereby freeing up land for other uses and increase the efficiency of the parking supply by helping visitors find available parking. Some of these strategies also have the indirect benefit of reducing vehicle trips or parking demand. As the Downtown District continues to develop; the following strategies may be utilized to fully meet parking demand or temporarily alleviate parking constraints.

Exhibit 2.29: Parking Permit Sign
To prevent commuters from parking all day in on-street parking spaces intended for visitors, time limits can implemented as needed as the redevelopment of Downtown District proceeds over time.

Parking Policies:

PP-5: Allow the use of tandem parking and parking stackers to meet parking requirements.

PP-6: Require project developers to provide preferential parking spaces for carpools and vanpool spaces within each development. Each carpool space may count for two parking spaces and each vanpool space may count for 3 parking spaces. The combined carpool and vanpool spaces should not exceed 10% of the total required parking for the development.

PP-7: Require that project developers offer the car sharing operator "right of first refusal" for one or more parking spaces. These car sharing spaces may be used for general parking up until such time as they are needed by a recognized car sharing operator. The following off-street car sharing parking space ratios shall be applied to private projects:

Residential Uses

- 24 dwelling units or less and projects proposing to provide no off-street parking spaces: None (although the City shall coordinate with the project developer and/or adjacent property owners to explore the desirability and feasibility of providing 1 or more on-street frontage parking space for car sharing).
- 25- 99 dwelling units: 1 space.
- 100 or more dwelling units: 2 spaces, plus 1 additional space for every 100 dwelling units over 100.

Non- Residential Uses

- For projects that provide 49 or fewer non-residential parking spaces: None (although the City shall coordinate with the project developer and/or adjacent property owners to explore the desirability and feasibility of providing 1 or more on-street frontage parking space for car sharing)
- For projects that provide 50 to 99 non-residential parking spaces: 1
- For projects that provide 100 or more non-residential parking spaces: 1, plus 1 additional for every 100 non-residential spaces over 100.

PP-8: Require project developers to provide preferential parking spaces at the same rate (discussed above). Wherever electric vehicle parking spaces are provided, the City shall also require project developers to provide an operable charging station, unless the project developer can demonstrate that this would be technically or financially infeasible. The requirements for electric vehicle parking spaces are additive to the requirements for car sharing parking spaces (whether held in reserve for future car sharing program or in active use by a car sharing operator). However, preferential parking spaces reserved for electric car sharing vehicles can count towards the parking requirements for both electric vehicles and car sharing vehicles (whether held

in reserve for future car sharing program or in active use by a car sharing operator).

Parking Strategies:

PS-E: The City shall explore the feasibility of providing one or more public parking spaces (either on-street or off-street) and charging stations for electric vehicles at strategic locations throughout the District.

PS-F: In addition, the City shall explore the feasibility of a coordinated district-wide valet parking program as feasible

PS-G: The City shall explore the feasibility of providing one or more highly-visible public parking spaces (either on-street or off-street) for car sharing vehicles at strategic locations throughout the District.

Parking Design

The manner in which on-and off-street parking is designed will play a critical role in the success of the district from both a sustainability and urban design perspective. A number of best practice design parking principals will be incorporated into future off-street parking facilities and on-street parking in order to promote the most efficient use of the parking supply while ensuring that parking facilities do not dominate and detract from the public realm.

Parking Policies:

PP-9: Curb cuts be consolidated and their width minimized.

PP-10: Parking shall either be wrapped with active uses, occupied spaces, or screened by landscaping.

PP-11: During permit approvals for large public parking garages, consider including electronic displays that identify parking availability to approaching vehicles.

PP-12: Allow on-street parking in the Downtown District on the majority of the streets. The proposed expansion of on-street parking will provide approximately 700 additional parking spaces for the District. and provide a buffer between pedestrian and moving cars. On-street parking shall be designed according to the principles contained in Chapter 3: Public Streetscape for proposed street designs and on-street parking:

- Wherever parallel parking is proposed, parking lanes shall be designed to the minimum width feasible; On streets with striped bike lanes, a buffer space shall be included as part of the bike lanes in order to ensure that bicycles can safely ride outside of the “door zone” .
- Wherever angled parking is proposed, bike lanes will be striped in order to reduce conflicts between bikes and cars.
- Wherever feasible, on-street parking lanes shall be designed with special paving materials to promote flexible use (such as special event programming) and support potential stormwater mitigation strategies.

Parking Strategies:

PS-H: Implement a coordinated parking signage system to direct motorists to location of available parking and reduce traffic congestion caused by circling for parking.

2.4 TRANSPORTATION DEMAND MANAGEMENT (TDM) STRATEGIES

Proposed TDM Programs

There are a number of Transportation Demand Management (TDM) strategies which can be utilized to reduce vehicle traffic and parking demand. Using cost-effective TDM programs that encourage the use of alternative modes of transportation is often cheaper and more environmentally sustainable than providing additional roadway space or parking facilities.

This Plan includes TDM implementation programs to reduce vehicle travel and parking demand to the maximum extent feasible.

Parking Policy:

PP-13: The City will consider developing a program where projects wishing to exceed the maximum parking contribute an impact fee used to assist with the future Transportation Demand Management Programs within the District. Prior to authorizing on-site parking in excess of the parking-maximums, the project developer shall demonstrate that other options have been evaluated to reduce on-site parking demand by other methods, including:

- Parking demand management strategies such as parking cash-out for employees and unbundled parking for residents; and
- Vehicle trip reduction strategies, such as subsidized transit passes, car sharing programs, or free employee/visitor shuttle from BART.

The impact fee could be waived at such time the property owner makes the parking available on a non-exclusive basis.

Parking Strategies:

PS-I: Transportation Management Association (TMA). As redevelopment progresses, the City will consider the formation and management of a TMA. The TMA can be funded by development impact fees, parking in-lieu fees, and required pro rata membership dues for new Downtown businesses based on number of customers and employees. It would be responsible for implementation of district-wide vehicle trip reduction strategies. TMA-sponsored programs could include those listed below.

PS-J: Subsidized transit passes.

The City could explore the feasibility of requiring all new development to provide subsidized transit passes to employees and residents. Residents and employees could be provided with a free "Clipper" smart card (formerly "TransLink") and a specified monthly fare subsidy could be deposited on the card for use on BART, AC Transit, or other transit operators. The TMA could negotiate a "bulk discount" purchase with the Metropolitan Transportation Commission (MTC) and participating transit operators to maximize the amount of transit subsidy that can be feasibly provided to residents and employees.

PS-K: Carsharing program.

Having a viable car-sharing program in the Downtown District would allow commuters who are able to take transit to work to do so knowing that a car would be available if needed for work meetings or personal errands. The City will explore the feasibility of requiring new development projects to implement on-site car sharing program for use by their

Exhibit 2.30: Transit Pass
Providing residents and employees with a direct transit subsidy—potentially automatically loaded onto their Clipper transit card each month—has been shown can increase transit usage and reduce vehicle congestion and parking demand.

Exhibit 2.31: Zipcar Signage
A car-sharing program in the Downtown District would allow more commuters to take transit to work, knowing that a car would be available at work if needed.

residents or employees. Alternatively, projects may contribute funds to the TMA to incentivize a car sharing operator with a district-specific or citywide program.

PS-L: Guaranteed Ride Home.

The Guaranteed Ride Home program, sponsored by 511.org would allow commuters who are able to take transit to work to do so knowing that they could get home in the event of a family emergency or when they unexpectedly need to work late when transit service is less frequent. Residents and employees of the District would be able to use this option a limited number of times in a given year. The TMA shall make employees aware of this program.

PS-M: Free trolley bus shuttle.

The City and TMA shall periodically explore the feasibility of providing a trolley bus shuttle that circulates in the area when the District population creates sufficient demand. The shuttle would be branded, in coordination with the signage and marketing materials for the Downtown District, and would be low-cost or free for all passengers. Shuttle service would be as frequent as financially feasible and provide direct access to major destinations including BART and ACE transit nodes. The purpose of the shuttle would be to supplement existing AC Transit bus service with targeted service to the Downtown District to make it easier for transit passengers to access the District without a car.

Exhibit 2.32: Internal Shuttle Bus example
A free shuttle bus serving the Downtown District would supplement existing AC Transit bus service and support the "Park Once" vision for the District.

PS-N: Transit, pedestrian, and bicycle improvements.

The City shall explore the feasibility of using TMA funds to pay for improvements to transit, pedestrian, and bicycle infrastructure.

2.5 UTILITIES + INFRASTRUCTURE

Utility services to the existing properties in the Downtown District are provided by utility lines within the existing public street grid. Since the existing blocks are large and streets discontinuous, many utility lines traverse across private properties with mapped easements.

As the area is developed and the proposed new streets are installed, the new utilities will be extended through new streets to continue providing services throughout the Downtown area. Some of the lines will need to be relocated within the streets or within to-be-acquired public right-of-ways.

Presently the Downtown community includes 1,125,060 SF of development, and is zoned for development up to 2,983,000 SF. The Community Plan proposes a minimum development density of 0.8 FAR which matches the maximum current zoning (2,861,000 SF) and a maximum 1.5 FAR development density of 5,278,000 SF. Since the 0.8 FAR development density is the current District entitlement, it is anticipated that development up to the current maximum zoning could be accommodated by the existing infrastructure with only minor improvements to the existing utilities and installation of new infrastructure to serve new streets. Additional improvements may be necessary if development exceeds the current zoning density.

Domestic Water System

The Alameda County Water District is responsible for water supply and distribution throughout the City of Fremont. The District obtains water from a variety of sources including the State Water Project, San Francisco's Regional Water System, the Niles Cone Groundwater Basin, desalinated brackish groundwater, and surface water from the Del Valle Reservoir. Water is treated at and distributed from the District's main water treatment plant on Mission Boulevard, adjacent to Highway 680 and also from well fields near Mowry Avenue.

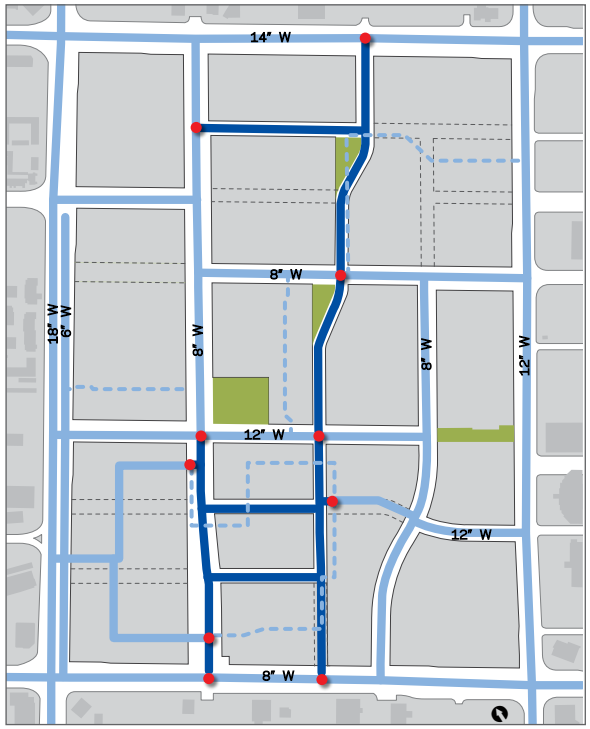


Exhibit 2.33: Proposed Domestic Water System Map

In its existing condition, the Downtown District is served by a network of water mains that follow the existing streets. The majority of the existing water mains in the area are 8" with 12" mains located along State Street and California Street. These mains connect to the existing mains in Mowry Avenue (18"), Paseo Padre Parkway (14"), Walnut Avenue (12") and Fremont Boulevard (8") at several locations. Existing fire hydrants are spaced at approximately 300' intervals along existing streets.

It is anticipated that new 8" to 12" water mains will be installed in new streets to provide water service and fire protection along the new public right-of-ways and properties served by them. Fire hydrants will be nominally spaced at 300' along the new streets. No improvements to the existing water distribution system are proposed. Domestic water mains extend across private parcels in several areas. As redevelopment occurs, some of these water mains will need to be reconfigured to accommodate development

Sanitary Sewer System

The Union Sanitary Sewer District provides wastewater treatment, collection and disposal in the City of Fremont. Flows collected within the sanitary sewer system flow to the District's Alvarado Wastewater Treatment Plant in Union City for treatment. The Alvarado Wastewater Treatment Plant was upgraded in 1996 and has capacity to treat 30 MGD (million gallons per day) average dry weather

flow and receives an average dry weather flow of 24.5 MGD.

In its existing condition, the Downtown area is served by sanitary sewer mains ranging in size from 6" and 10" that connect to existing mains in Mowry Avenue (8"), Paseo Padre Parkway (8"), Walnut Avenue (24") and Fremont Boulevard (6") at several locations.

It's anticipated that new 8" to 12" sanitary sewer mains will be installed in new streets to provide sanitary sewer service to the properties fronting the new public right-of-ways. It is likely that the 6" sanitary sewer main in Fremont Boulevard will need to be replaced as well as other mains identified by the Union Sanitary District.

Storm Drain System

The City of Fremont and Alameda County Flood Control & Water Conservation District (ACFC) jointly owns and operates the storm drain system serving the Downtown District. This area is part of the Mowry Slough Water Shed which ultimately discharges to the San Francisco Bay.

In its existing condition, the Downtown area is served by storm drain mains in the existing streets. These storm drain mains vary in size from 18" to 60" and serve Mowry Avenue, Paseo Padre Parkway, Walnut Avenue and portions of their tributary areas. Storm drain through the Community Plan area connects to the existing 7' by 6' box culvert in Fremont Boulevard. In its existing condition, the Downtown District is substantially impervious. The City of Fremont has not identified any significant existing storm drain capacity issues in the District.

New storm drains ranging in size from 12" to 24" will be installed in new streets to provide drainage to the new rights-of-way and the adjacent properties. It is anticipated that new green space proposed in the Community Plan in combination with implementation of storm water quality measures will result in no net increase in storm water runoff from the Community Plan area. Should more detailed storm drain analysis completed with development of specific areas result in an increase in storm water runoff, it is anticipated that this can be mitigated with minor on-site detention in underground vaults or large diameter pipe. No improvements to the existing storm drain system are currently proposed.

New storm drain inlets and laterals may be required at locations where existing drainage patterns are disrupted by street modifications, including the addition of bulb-outs at intersections and mid-block pedestrian crosswalks.

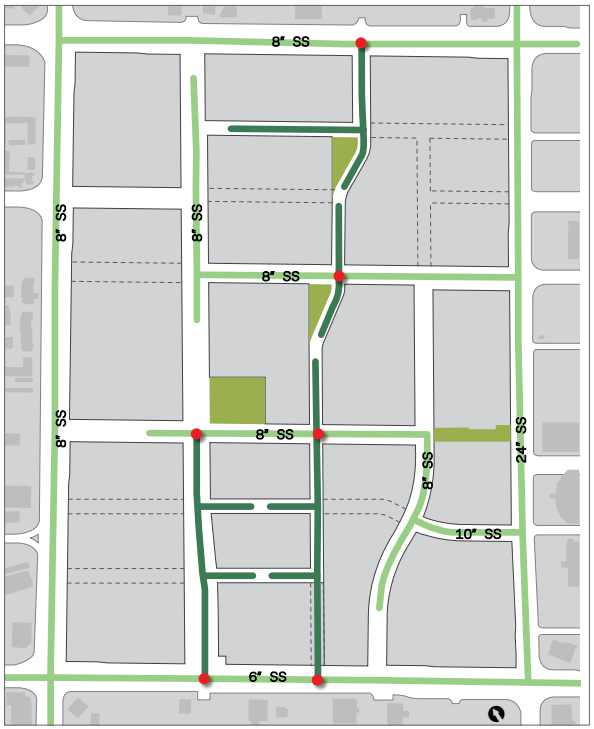


Exhibit 2.34: Proposed Sanitary Sewer System Map

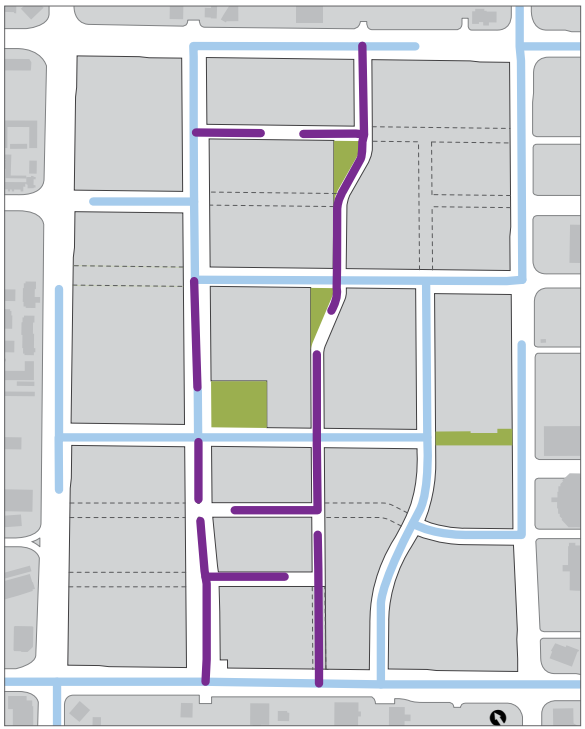


Exhibit 2.35: Proposed Storm Drain System Map

Stormwater Quality

Stormwater runoff in the public right-of-ways will be treated with stormwater treatment measures sized and spaced to accommodate the impervious area within the right-of-way. The stormwater treatment measures will be sized and strategically located throughout the Downtown District in order to capture and filter all public stormwater. Landscaped medians and other planted areas in the public right-of-way may also be used to provide storm water treatment of the public streets so long as the street's drainage flow allows for them. These proactive, holistic approaches to stormwater treatment will reduce heat island effects and pollution from runoff.

Downtown stormwater on private lots will be treated in conformance with the Regional Water Quality Control Boards requirements for Low Impact Development (LID). Treatment measures may include bio-filtration, rain water gardens, green roofs, pervious paving systems, or other treatment measures that provide the required level of treatment. See Section 3.4 for additional details regarding stormwater treatment in the private and public arena.

Exhibit 2.36: Multi-lingual Street Drain Signage

Gas and Electric Services

Pacific Gas and Electric (PG&E) provides gas and electric service to the Downtown area. Based on available information, it appears that both systems are well networked through the area and that service is currently available along all of the existing public right-of-ways. New facilities including transformers, switch gear and junction boxes, will be installed in new streets to provide service along all of the new public right-of-ways. Should any over-head electrical services currently exist within the District they will be required to be relocated underground as part of the first development project they abut.

Telecommunications

Telecommunications and cable television service in the Fremont Downtown Community Plan area are provided by AT&T and Comcast. Based on review of the District, it appears that communications facilities are networked through the area and service is available along all existing public right-of-ways. A search of AT&T and Comcast webDistricts indicates that both companies are able to provide business level high speed internet access. Where new streets are installed, communication facilities will be extended along the streets so that service will be available for new public rights of way.

Abandonment of Existing Public Utility Easements

Since new buildings will be required to front at or close to the right-of-way boundary/street line, existing franchise utilities that are located on private properties immediately behind the street right-of-way/within the existing public utility or service easements (PUE), will have to be relocated at the developer's expense. Additionally, the public utility easement will also have to be vacated by City Council action.

Excess Street Right-of-Way

Right-of-way in excess of what would be required to build the street per Downtown District guidelines would be available for purchase from the City if needed. Interested applicants shall initiate a dialogue with the real property division at the City, and, if necessary, follow up with a plat and legal to describe the meets and bounds of the proposed acquisition. Portions of the following streets in the District may have excess right-of-way: Beacon Avenue, Hastings Street, Liberty Street, and State Street.

3.0 PUBLIC STREETSCAPE

Exhibit 3.1: Rendering of Proposed Capitol Avenue Gateway at Fremont Boulevard

3.1 STREET TYPOLOGIES

Streets are the lifeblood of a vibrant community, providing a civic space for pedestrians to mingle, shop and recreate while providing bicycles and vehicles routes to, through, and within the District.

To create a network of distinct and identifiable streets, the District streets are organized by type to reveal their intended character and use. Refer to Exhibit 3.2 for the location of the streets described here after. The District's five street typologies are:

Downtown Spine

As the District's organizing spine or "main street', Capitol Avenue with its new extension connecting to Fremont Boulevard, landscaped medians, diagonal street parking, and wider amenity-rich sidewalks sets the stage for the heart of Downtown. Connecting the Fremont Hub Shopping Center to the west, the new Civic Center at midpoint, and then Gateway Plaza Shopping Center to the east with the BART station beyond, the throughfare will be the primary pedestrian spine between these destinations.

Downtown's 'main street' is:

- Capitol Avenue

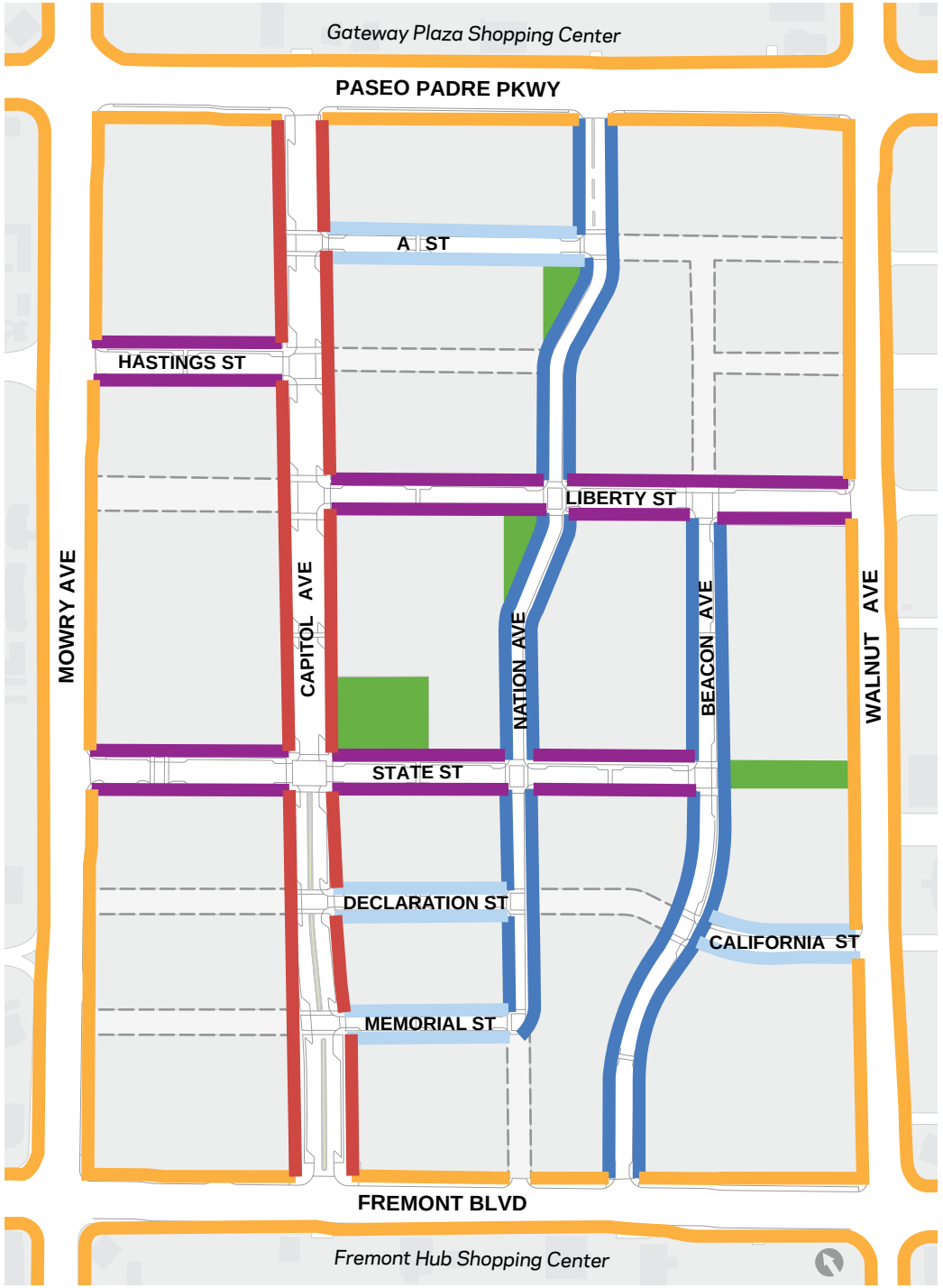


Exhibit 3.2: Street Typologies

- Downtown Spine
- Edge Streets
- Gateway Streets
- East - West Streets
- North - South Streets
- Easements

Edge Streets

Defining the perimeter of Downtown, the Edge Streets are existing arterial roadways leading to the other Fremont neighborhoods and the nearby highways beyond. These streets have a broad width, carrying large traffic volumes, which act as main connections to the Downtown District.

These Edge Streets include:

- Fremont Boulevard
- Mowry Avenue
- Walnut Avenue
- Paseo Padre Parkway

Gateway Streets

Gateway Streets, leading off of Capitol Avenue, are important connectors to the bounding Edge Streets and the adjacent Fremont street grid, linking to the larger City context. Because they are access points, these streets also serve as important gateways to Downtown, so their design includes a landscaped median intended to accommodate art/landscaping and creating a distinct marker at the District's entrance/ boundary.

- State Street
- Liberty Street
- Hastings Street

East - West Streets

The east-west streets efficiently direct circulation through the District. New Middle Road will provide: service access to adjacent Downtown development blocks; access to the proposed municipal parking garage; and a direct and safe pedestrian and bicycle route that meets Paseo Padre Parkway at an existing traffic signal to connect to the Fremont BART station to the east. These two streets provide important access to development parcels that may otherwise have limited access due to the restricted curb cuts allowable along Capitol Avenue, Fremont Boulevard and Walnut Avenue.

- Beacon Avenue
- New Middle Road

North - South Streets

The north - south streets are intended to be more intimate and encourage lower vehicle speeds. They are meant to service the street's local denizens for circulation, access and parking. These narrower streets are the only Downtown streets that do not have dedicated bike paths. Refer to Exhibit 3.2 for the street locations.

- California Street
- A Street
- B Street
- C Street

Exhibit 3.3: Pedestrian-Oriented Streetscape

* Refer to Exhibit 3.2 (left) for locations of streets

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3.2 STREETSCAPE CHARACTER

Fremont's Downtown streetscapes are intended to be vibrant, urban, pedestrian-friendly 'complete streets' replacing the existing wide, automobile-oriented streets. 'Complete streets' are roadways designed to enable safe, attractive, and comfortable access and travel for all users. Pedestrians, bicyclists, motorists and public transport users of all ages and abilities are able to safely and comfortably move along and across a complete street.

This section describes the design concepts for the development of the public streetscape. The City has adopted unique standard details for the right-of-way improvements.

Unifying Concepts

The public streetscape should emphasize an urban pedestrian, bike and transit-friendly quality with wide tree-lined sidewalks and consistent amenities and materials.

- The streets are designed 'complete', accommodating all modes of travel: pedestrian, bicycle, transit and vehicle.
- Streetscape furnishings and materials are to be modern, elegant, distinct and sustainable to provide an identifiable district character.
- The District seeks to integrate storm water treatment areas with the streetscape design. Street trees will use storm water filter planters with tree grates to treat the public storm water.

On the following pages, the specific design concepts for each of the District's streets are provided, listed in alphabetical order.

Exhibit 3.4: Streetscape Example

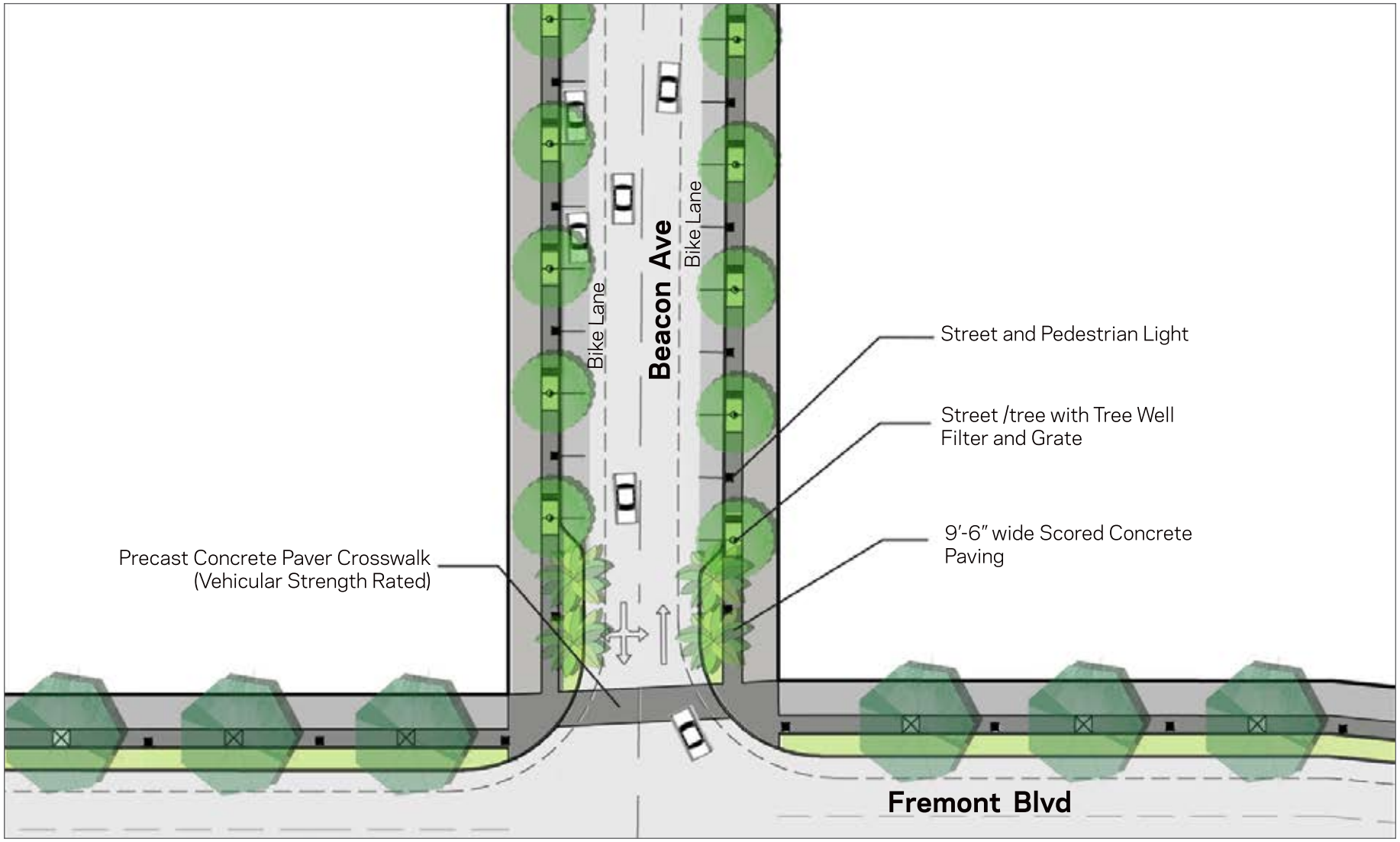
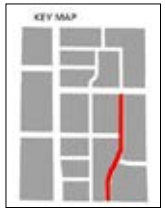


Exhibit 3.5: Beacon Avenue - Street Plan (top)
Exhibit 3.6: Beacon Avenue - Street Configuration Dimensions Chart (bottom)



Beacon Avenue California St. to Liberty St.	Right of Way	Curb to Curb	Sidewalk	Parking Lane	Bike Lane	#3 Lane	#2 Lane	#1 Lane	Median	#1 Lane	#2 Lane	#3 Lane	Bike Lane	Parking Lane	Sidewalk
Existing	86	50	18	-	-	-	13	12	-	12	13	-	-	-	18
Proposed	80	50	15	8	6	-	-	11	-	11	-	-	6	8	15

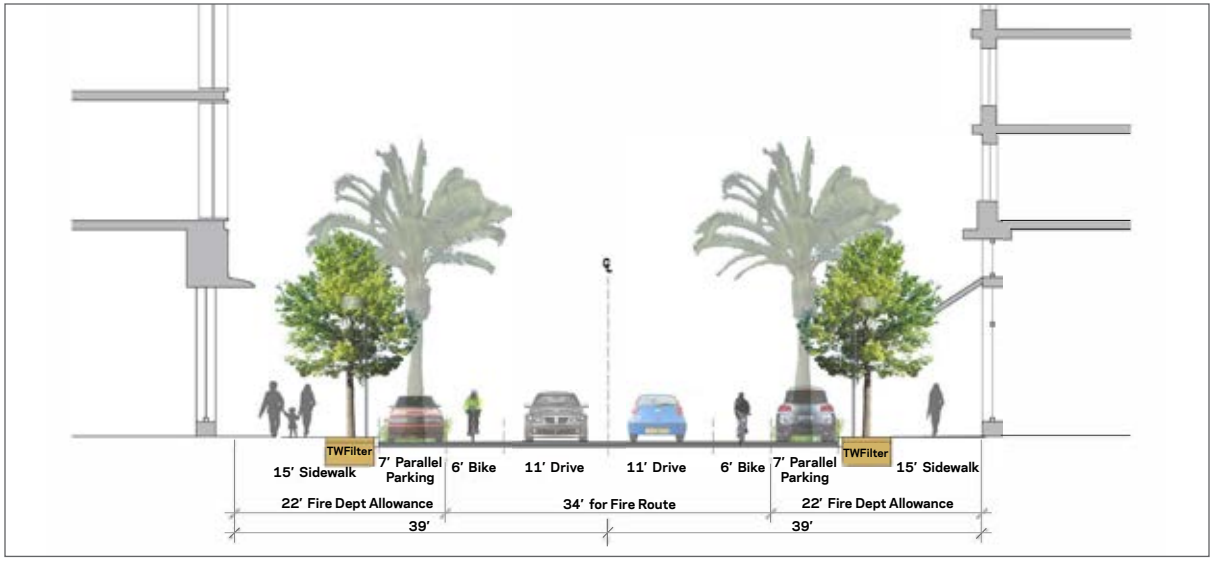


Exhibit 3.7: Beacon Avenue - Street Section

Beacon Avenue

Beacon Avenue is an existing two-way street to be narrowed in width and reconfigured to allow street parking and bike lanes.

Beacon Avenue is proposed to have one drive lane in each direction, with parallel parking on both sides. Bike lanes are continuous in both directions and 6' wide.

Sidewalks are 15' wide and flanked by consistently spaced, fine-leafed deciduous street trees planted in tree well filter planters, as part of the stormwater management plan. New regularly-spaced modern street lights illuminate the sidewalk.

Mid-block crosswalks provide a strong pedestrian linkage across the street.

Sidewalk paving consists of integral color concrete with different surface treatments. The scoring pattern differentiates the main walking path from the street tree zone where the 5' wide band continues into the corner intersections.

Beacon Avenue Materials

Street Trees
Celtis sinensis, Accent Palms at Fremont Blvd. entry - Phoenix dactylifera

Sidewalk
Concrete paving in San Diego Buff (Davis Color) with longitudinal scoring (48" typical) and a five foot wide accent paving strip at trees (24" scoring typical) San Diego Buff (Davis Color) with stamped Rock Salt Finish.

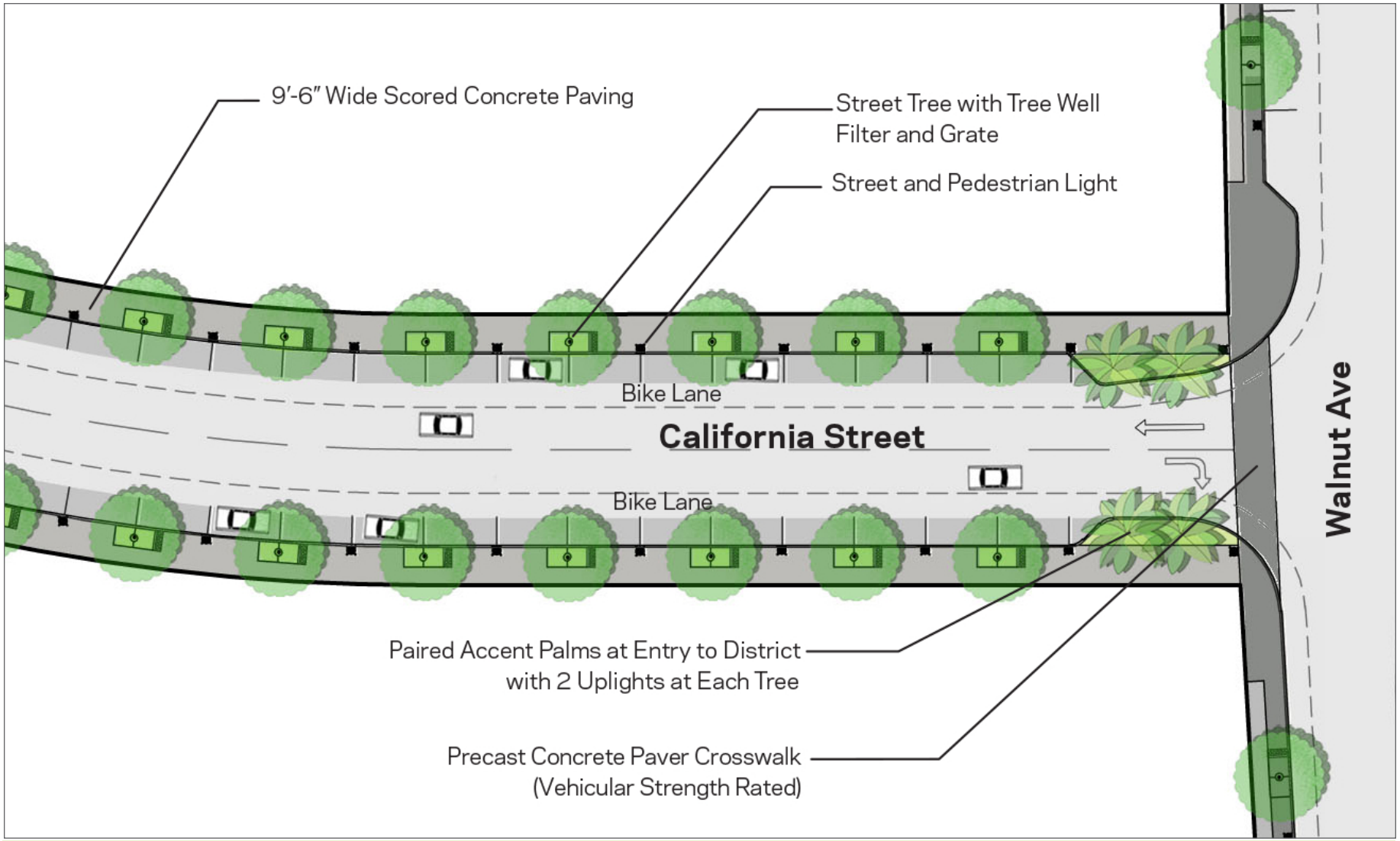


Exhibit 3.8: California Street - Street Plan (top)
Exhibit 3.9: California Street - Street Configuration Dimensions Chart (bottom)

California Street	Right of Way	Curb to Curb	Sidewalk	Parking Lane	Bike Lane	#3 Lane	#2 Lane	#1 Lane	Median	#1 Lane	#2 Lane	#3 Lane	Bike Lane	Parking Lane	Sidewalk
Existing	72	66	18	-	-	-	13	12	4	12	12	13	-	-	18
Proposed	68	48	10	7	6	-	-	11	-	11	-	-	6	7	10

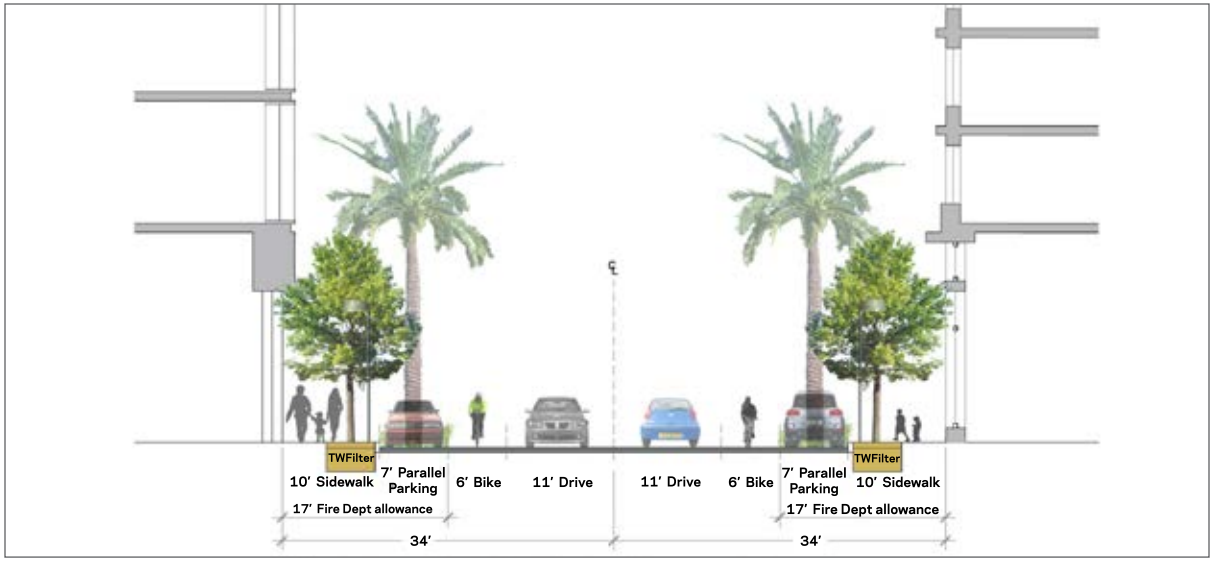


Exhibit 3.10: California Street - Street Section

California Street

California Street is an existing one-block long north-south street to be narrowed in width and reconfigured to allow street parking and bike lanes.

It is proposed to have one drive lane in each direction,with parallel parking on both sides. The bike lanes is continuous and 6' wide.

Sidewalks are 10' wide and flanked by consistently spaced street trees planted in tree well filter planters, as part of the stormwater treatment plan. New regularly-spaced modern street lights illuminate the 10' wide sidewalk.

The paired palm trees at the intersection with Walnut Avenue within the sidewalk planting areas serve to create a visual marker that you have entered the Downtown District in a different way from the median plantings on other gateway streets. The street tree concept is to have medium-scale deciduous trees creating a canopy for this entry to the District.

California Street Materials

Street Trees
Armstrong Maple
Accent Palms at Walnut Avenue entry - Phoenix dactylifera

Sidewalk
Concrete paving in San Diego Buff (Davis Color) with longitudinal scoring (48" typical) and a five foot wide accent paving strip at trees (24" scoring typical) San Diego Buff (Davis Color) with stamped Rock Salt Finish.

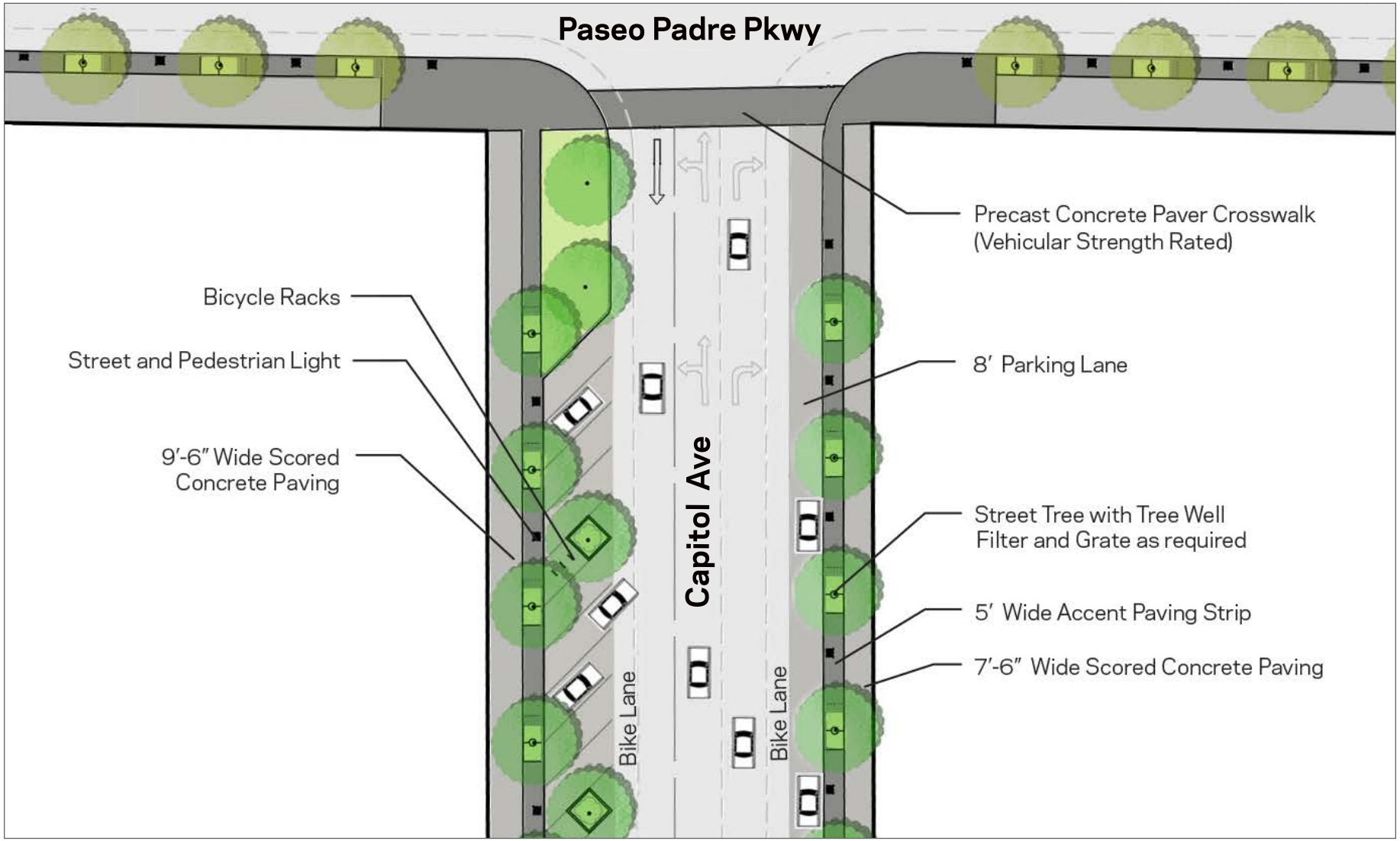
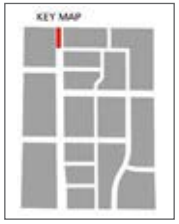
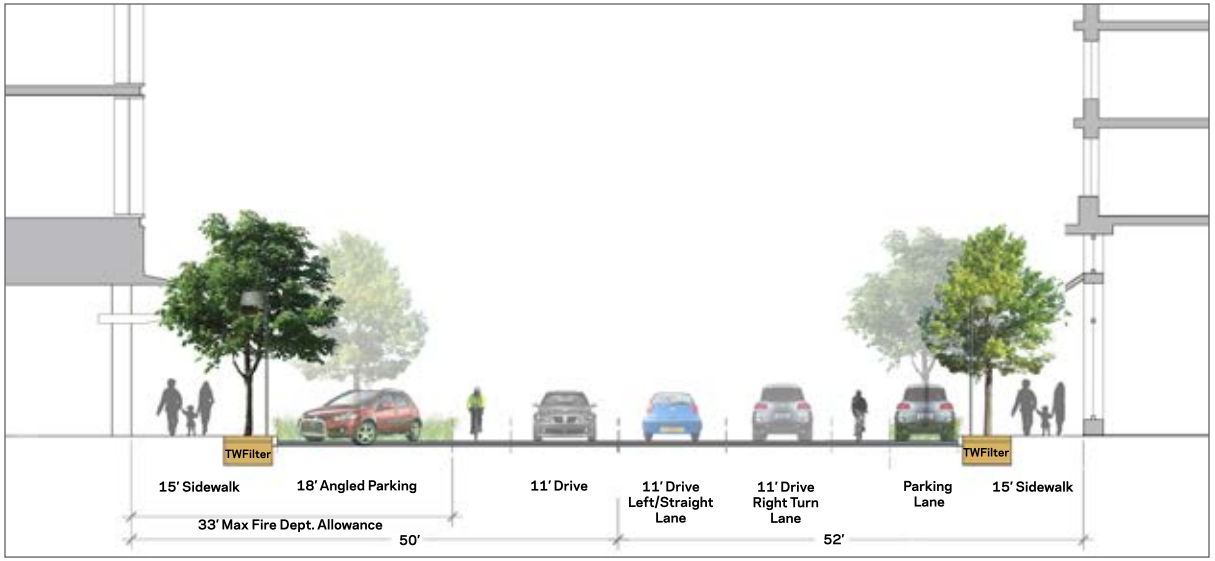


Exhibit 3.11: Capitol Avenue: East Segment - Street Plan (top)
Exhibit 3.12: Capitol Avenue: East Segment - Street Configuration Dimensions Chart (bottom)



Capitol Avenue Paseo Padre Pkwy to A Street	Right of Way	Curb to Curb	Side-walk	Parking Lane	Bike Lane	#3 Lane	#2 Lane	#1 Lane	Median	#1 Lane	#2 Lane	#3 Lane	Bike Lane	Parking Lane	Side-walk
Existing	102	66	18	-	-	13	13	12	4	12	13	-	-	-	18
Proposed	102	72	15	18	6	-	-	11	-	11	11	-	7	8	13 - 15



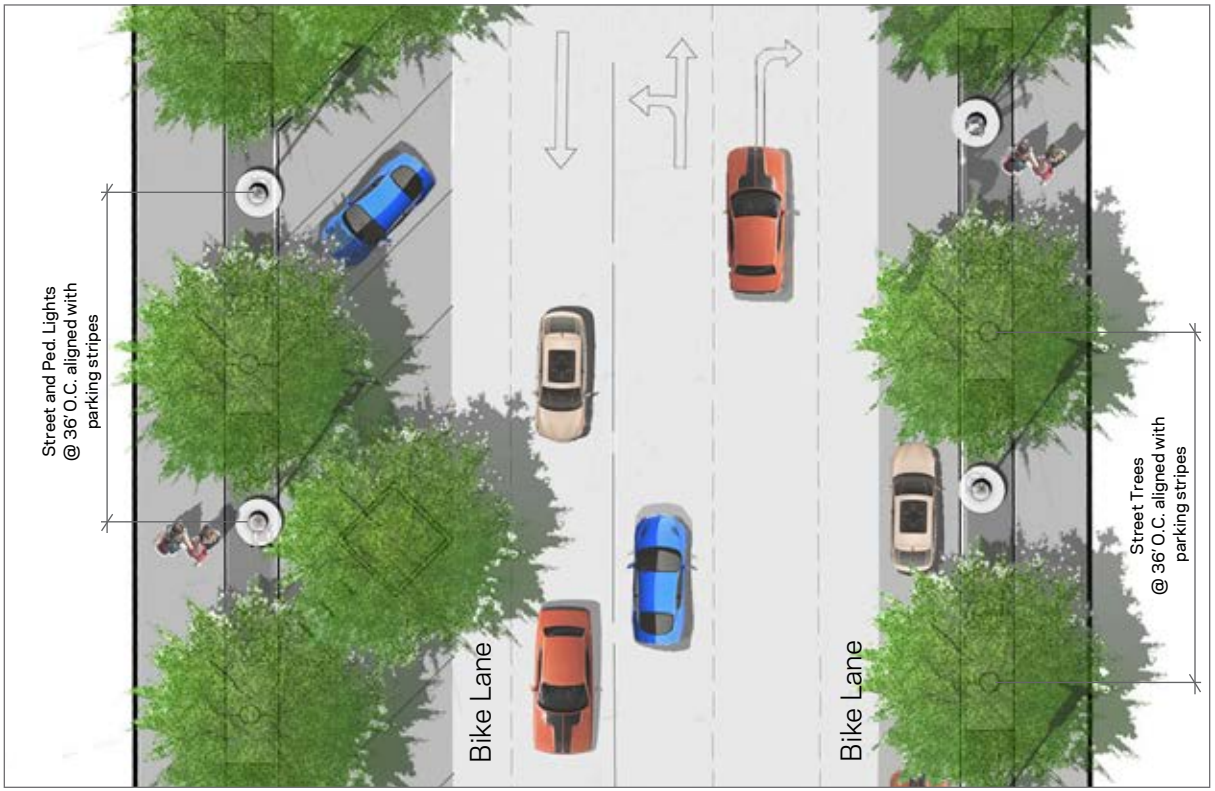


Exhibit 3.13: Capitol Avenue: East Segment - Street Section

Capitol Avenue - East Segment

Capitol Avenue is the "Main Street" of the Fremont Downtown. In the eastern segment of this street, it is proposed to have the existing street improved with: one drive lane in each direction and a left/straight turning lane at Paseo Padre Parkway, angled parking on one side, and parallel parking on the other. Bike lanes are continuous with designated on-street parking areas. Curb-cuts are prohibited on Capitol Avenue.

Sidewalks are 15′ on the north side and 13′ on the south side to accommodate existing infrastructure. Consistently spaced street trees planted in tree well filter planters flank the sidewalks. New regularly-spaced modern street lights illuminate the sidewalks.

Sidewalk paving consists of integral color concrete with a different surface treatment. The scoring pattern differentiates the main walking path from the street tree zone and the 5′ band at the street trees continues into the corner plazas as well.

Capitol Avenue Materials

Street Trees
Celtis sinensis

Sidewalk
Concrete paving in San Diego Buff (Davis Color) with longitudinal scoring (48" typical) and a five foot wide accent paving strip at trees (24" scoring typical) San Diego Buff (Davis Color) with stamped Rock Salt Finish.

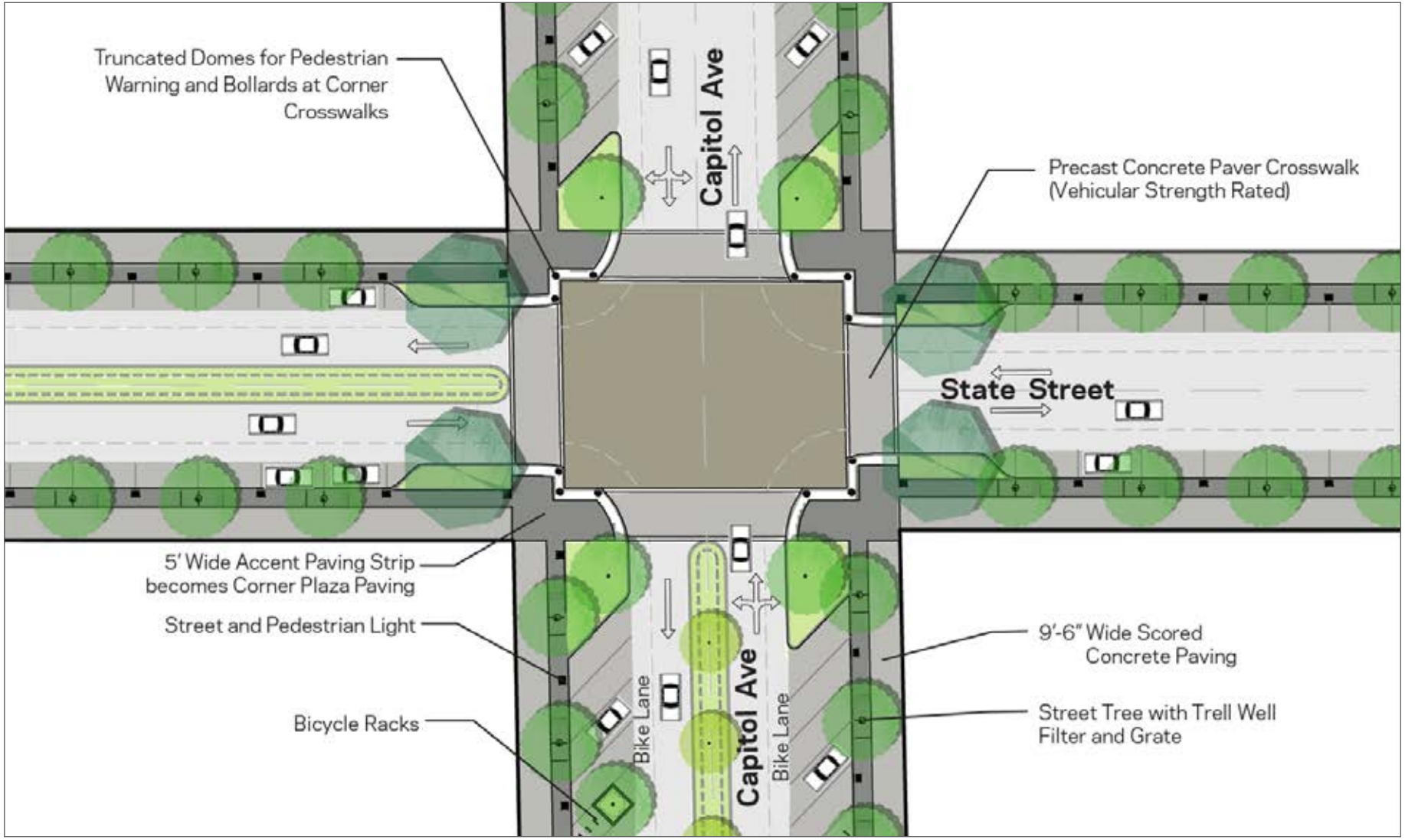
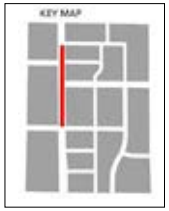


Exhibit 3.14: Capitol Avenue - Street Plan (top)
Exhibit 3.15: Capitol Avenue - Street Configuration Dimensions Chart (bottom)



Capitol Avenue A Street to State Street	Right of Way	Curb to Curb	Sidewalk	Parking Lane	Bike Lane	#3 Lane	#2 Lane	#1 Lane	Median	#1 Lane	#2 Lane	#3 Lane	Bike Lane	Parking Lane	Sidewalk
Existing	86	50	18	-	-	-	13	12	-	12	13	-	-	-	18
Proposed	100	70	15	18	6	-	-	11	-	11	-	-	6	18	15

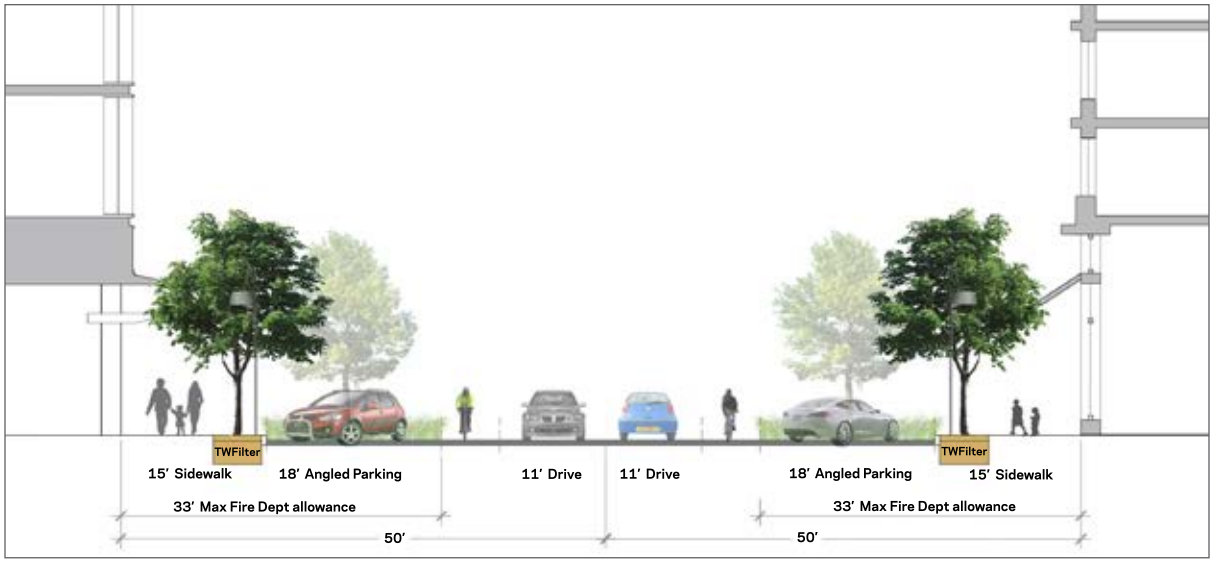


Exhibit 3.16: Capitol Avenue - Street Section

0 10' 20'

Capitol Avenue - Liberty St. to State St.

The existing roadway goes from Liberty Street to State Street with angled parking on both sides. Curb-cuts are prohibited along Capitol Avenue. Bike lanes are continuous 6' wide with designated on-street parking areas. A 14' wide right-of-way dedication along the north side of the street will be required.

Sidewalks are 15' wide flanked by uniform street trees planted in tree well filter planters, that treat public stormwater. New modern lights illuminate the sidewalk.

Sidewalk paving consists of integral color concrete with a different surface treatment. The scoring pattern differentiates the main walking path from the street tree zone and the 5' band at the street trees continues into the corner plazas as well.

Capitol Avenue Materials

Street Trees
Celtis sinensis .

Sidewalk
Concrete paving in San Diego Buff (Davis Color) with longitudinal scoring (48" typical) and a five foot wide accent paving strip at trees (24" scoring typical) San Diego Buff (Davis Color) with stamped Rock Salt Finish.

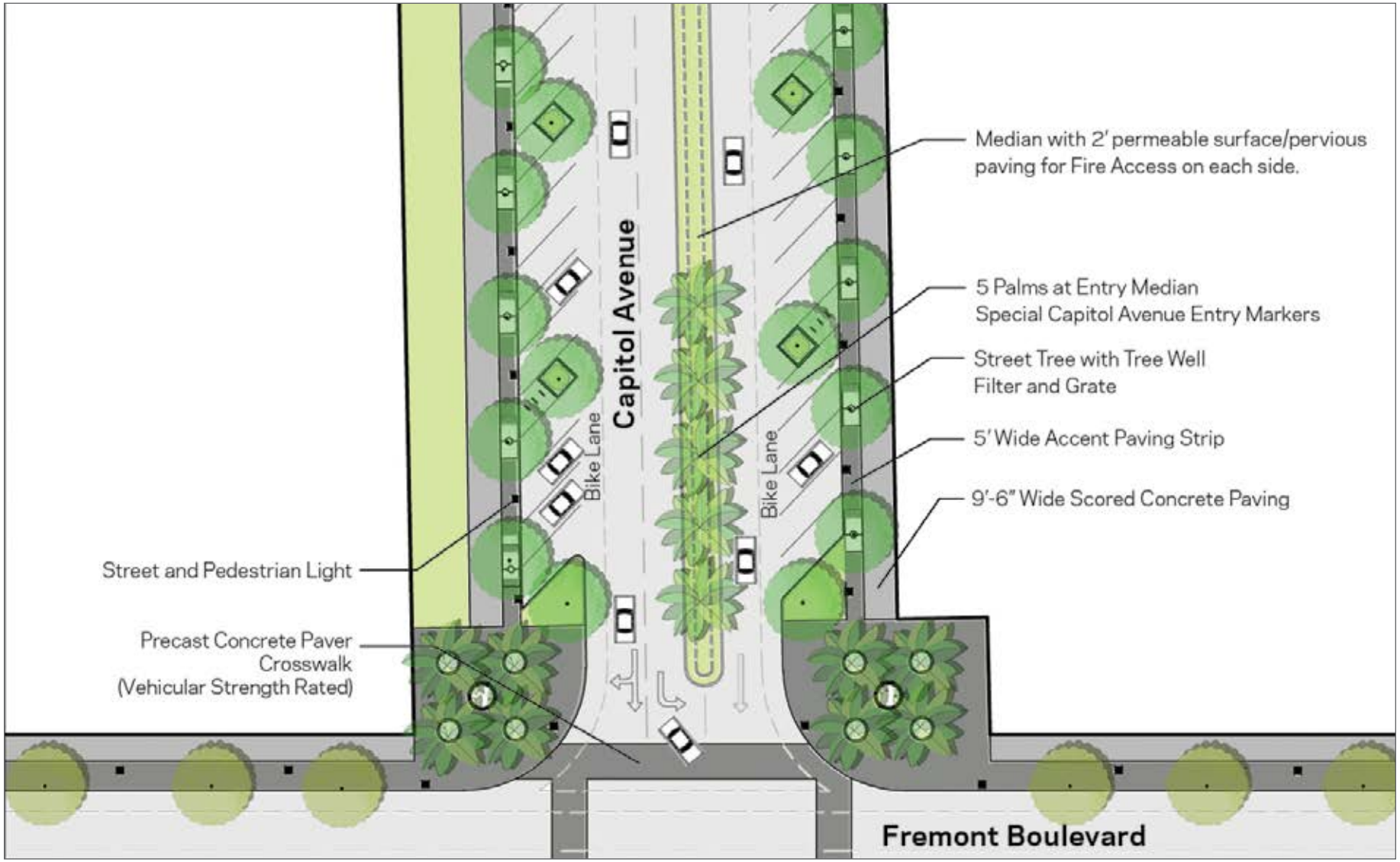
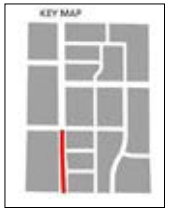


Exhibit 3.17: Capitol Avenue West - Street Plan (top)
Exhibit 3.18 Capitol Avenue West - Street Configuration Dimensions Chart (bottom)



Capitol Avenue C St to Fremont Blvd	Right of Way	Curb to Curb	Sidewalk	Parking Lane	Bike Lane	#3 Lane	#2 Lane	#1 Lane	Median	#1 Lane	#2 Lane	#3 Lane	Bike Lane	Parking Lane	Sidewalk
Existing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Proposed	122	81	15	18	6	-	11	11	11	11	-	-	6	18	15

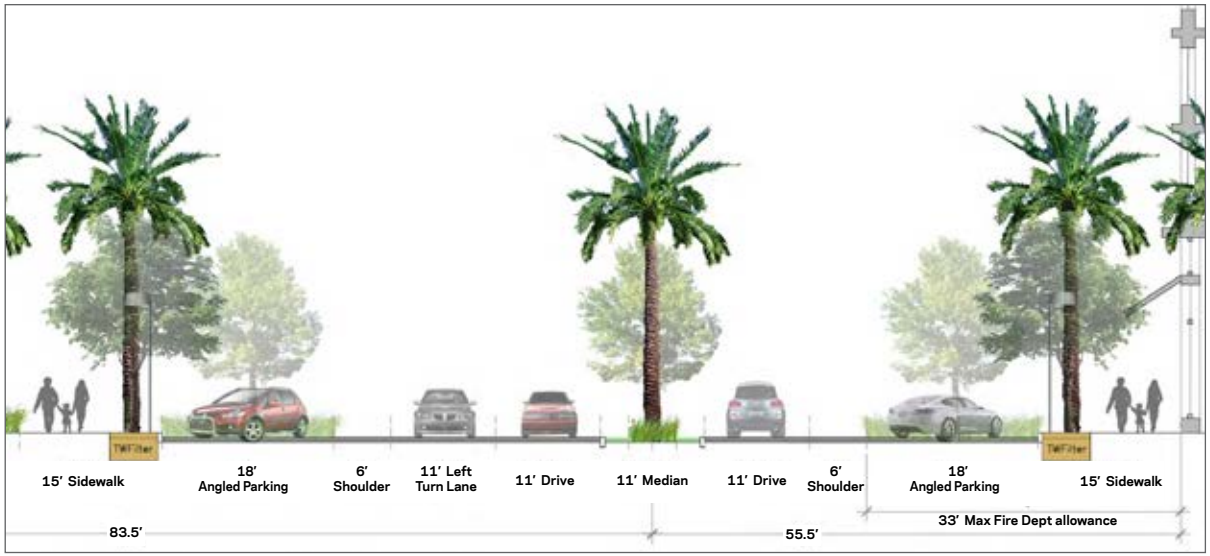


Exhibit 3.19: Capitol Avenue - West Segment - Street Section

0 10' 20'

Capitol Avenue - West Segment

The proposed roadway goes from State Street to Fremont Boulevard. It is proposed to have one drive lane in each direction with a left-turn lane onto Fremont Boulevard, and angled parking on both sides. Curb-cuts are prohibited along Capitol Avenue. Bike lanes are continuous 6' wide with designated on-street parking areas.

Sidewalks are 15' wide flanked by uniform street trees planted in tree well filter planters, that treat public stormwater. New modern lights illuminate the sidewalk. Mid-block crosswalks provide a strong pedestrian linkage across the street through a break in the continuous, planted median. The median tree is a smaller scale evergreen tree to provide foliage in the winter months. The specific tree placement, median breaks, and materials of construction will be further refined as development occurs and the building heights and configurations are known.

Sidewalk paving consists of integral color concrete with a different surface treatment. The scoring pattern differentiates the main walking path from the street tree zone and the 5' band at the street trees continues into the corner plazas as well.

Capitol Avenue Materials

Street Trees
Celtis sinensis

Median Trees
Arbutus Marina standards with Phoenix dactylifera as the Entry Accent.

Sidewalk
Concrete paving in San Diego Buff (Davis Color) with longitudinal scoring (48" typical) and a five foot wide accent paving strip at trees (24" scoring typical) San Diego Buff (Davis Color) with stamped Rock Salt Finish.

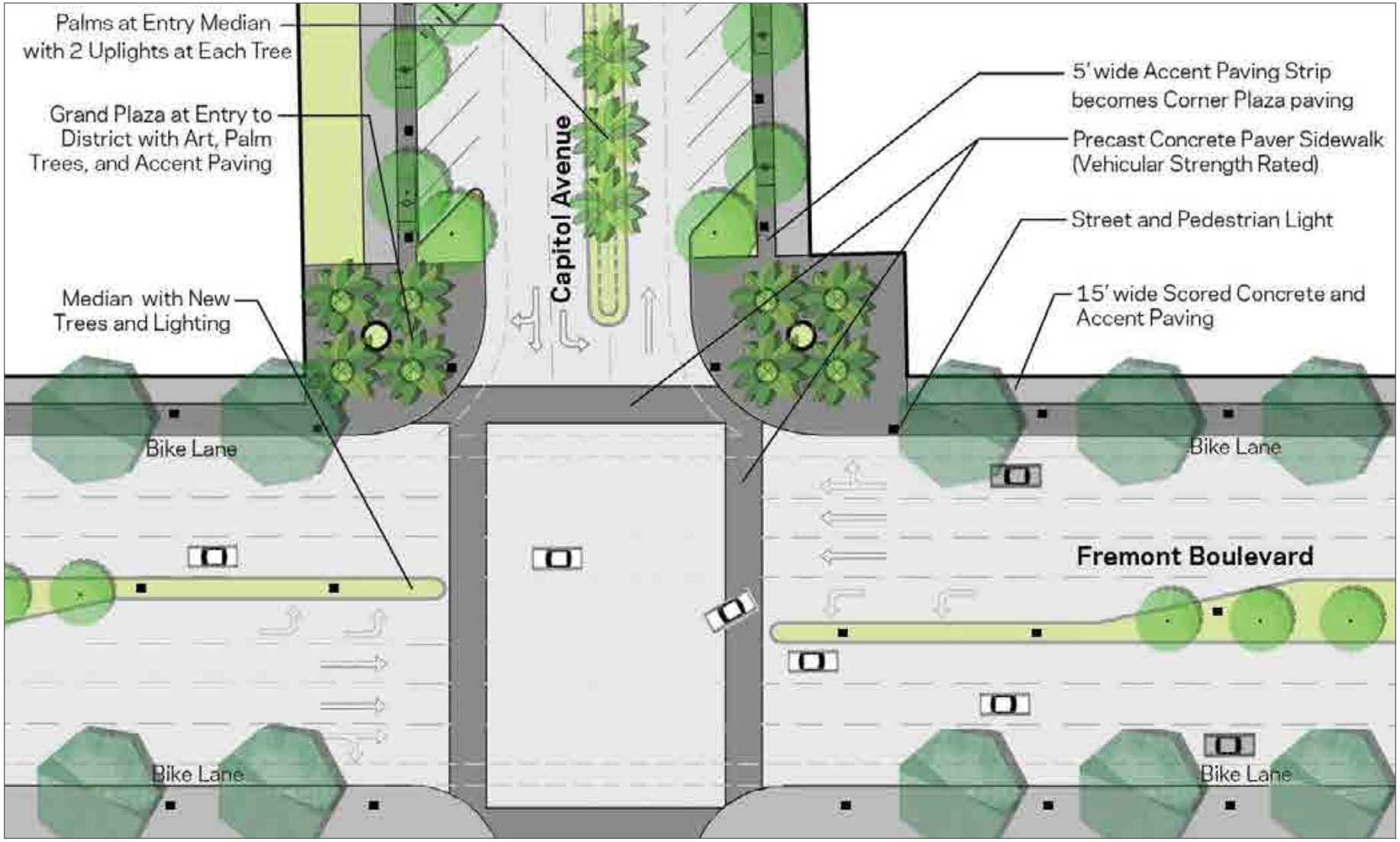
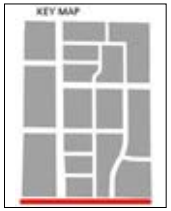
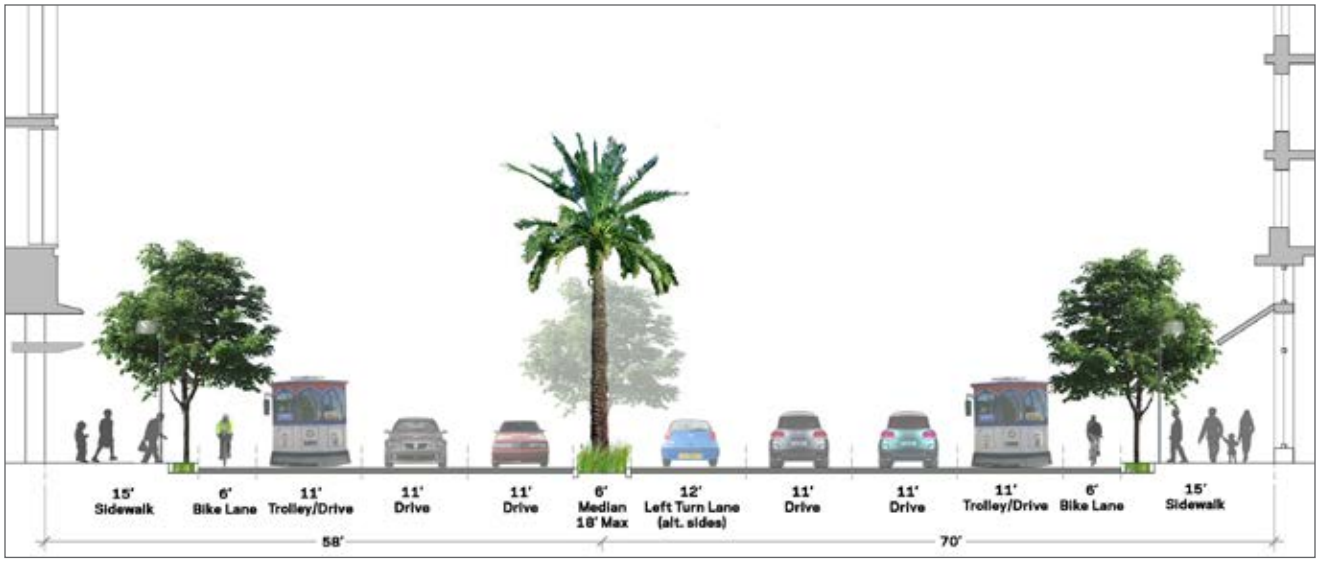


Exhibit 3.20: Fremont Boulevard - Street Plan (top)
Exhibit 3.21: Fremont Boulevard - Street Configuration Dimensions Chart (bottom)



Fremont Blvd. Mowry Ave. to Walnut Ave.	Right of Way	Curb to Curb	Sidewalk	Land-scape Strip	Bike Lane	#3 Lane	#2 Lane	#1 Lane	Median	#1 Lane	#2 Lane	#3 Lane	Bike Lane	Land-scape Strip	Sidewalk
Existing	128	108	10	-	8	12	12	13	18	13	12	12	8	-	10
Proposed	128	98	15	-	6	12	11	11	18	11	11	12	6	-	15



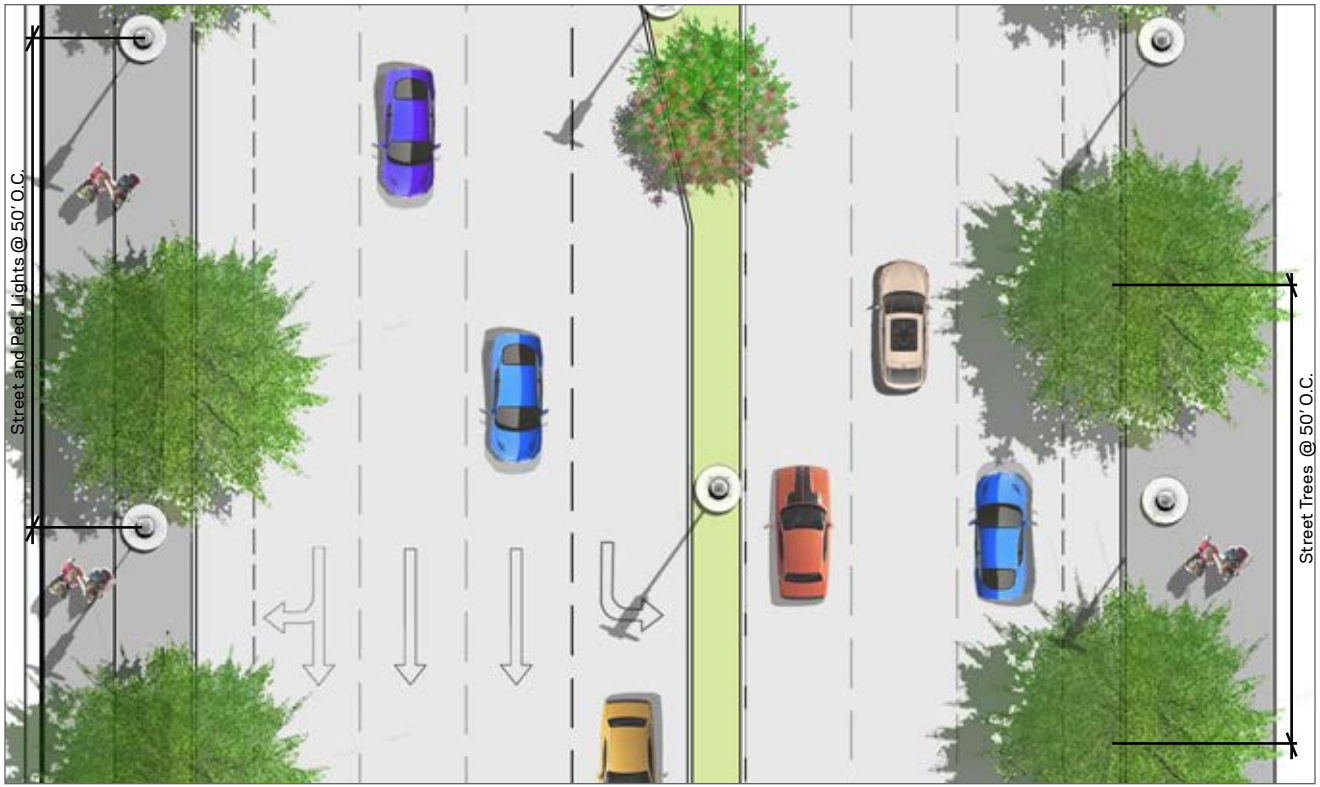


Exhibit 3.22: Fremont Boulevard - Street Section

0 10' 20'

Fremont Boulevard

Fremont Boulevard is an important roadway fronting the District. It is a major arterial road that links to adjacent communities and Highways 84 and I-880. Its new geometry will retain that role with the addition of a potential transit lane, transit stops, and dedicated bike lanes. It is proposed to maintain the existing right-of-way, but reduce the travel lanes to 11' to accommodate a landscaped median and future Bus Rapid Transit or trolley line linking to other Fremont neighborhoods. The bike lanes are continuous and 6' wide. There is also a continuous planted median to help control the visual scale of the road. No on-street parking will be allowed.

Sidewalks are separated by planting strips to help create a more protected pedestrian zone away from the fast moving traffic. The landscaped strip and tree well filters are part of the stormwater treatment plan. Pedestrian-scaled lights illuminate the sidewalks.

Fremont Boulevard Materials

Street Trees
Platanus acerifolia "Yarwood"

Median Trees
Quercus agrifolia, with Phoenix dactylifera as an entry accent.

Sidewalk
Concrete paving in San Diego Buff (Davis Color) with longitudinal scoring (48" typical) and a five foot wide accent paving strip at trees (24" scoring typical) San Diego Buff (Davis Color) with stamped Rock Salt Finish.

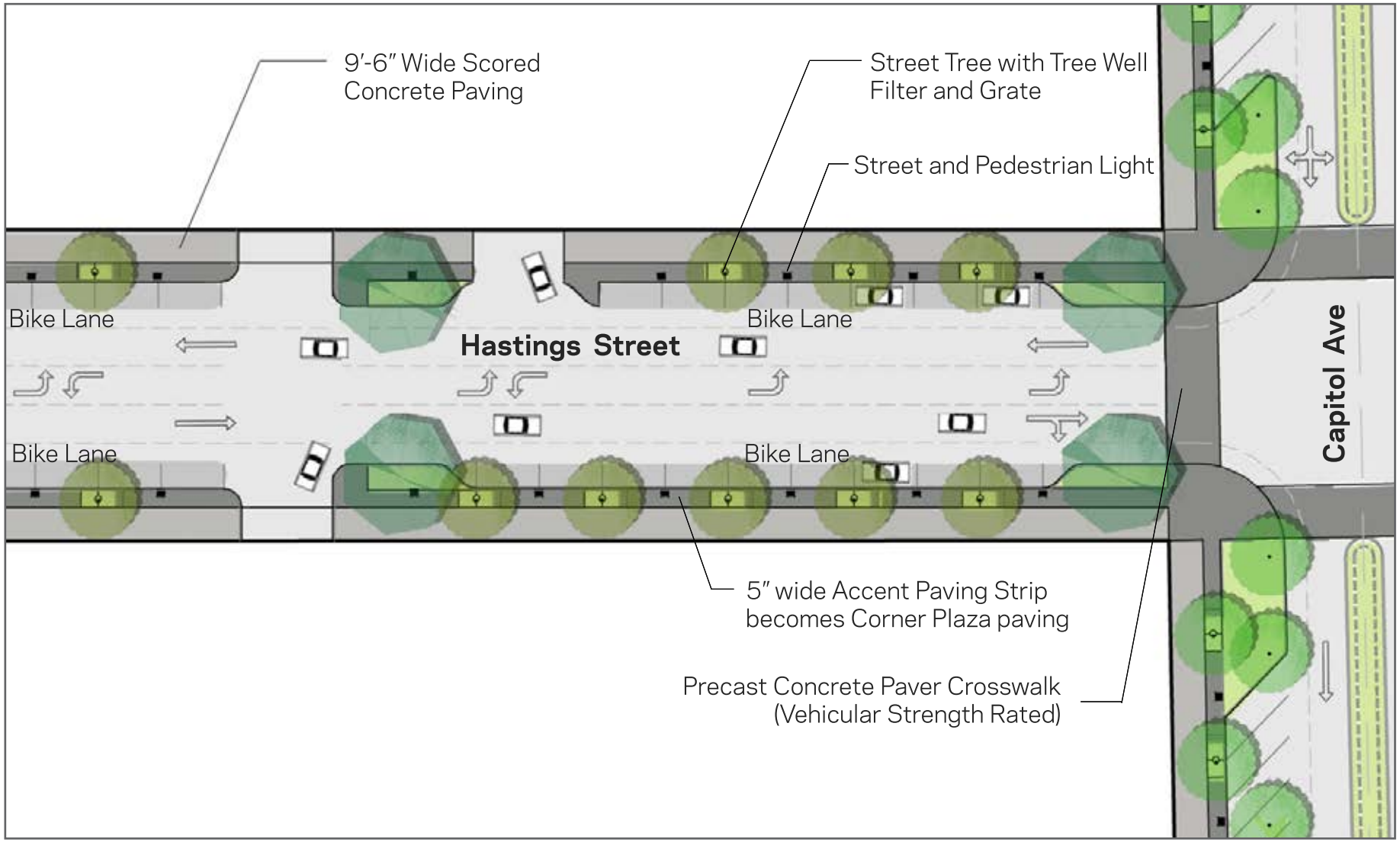
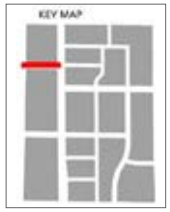
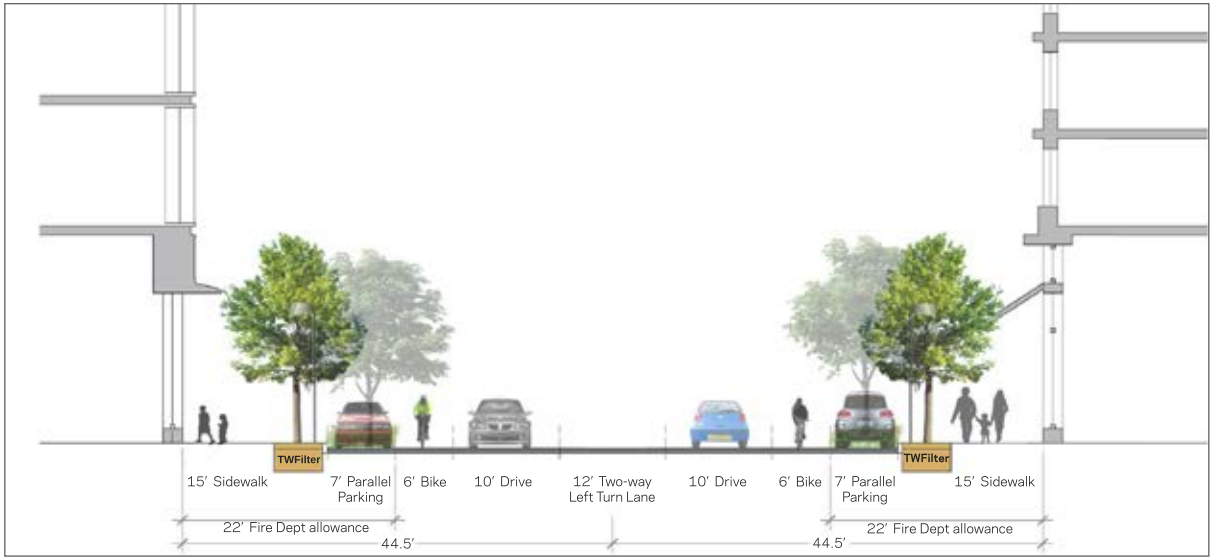


Exhibit 3.23: Hastings Street - Street Plan (top)
Exhibit 3.24: Hastings Street - Street Configuration Dimensions Chart (bottom)



Hastings Street Mowry Ave. to Capitol Ave.	Right of Way	Curb to Curb	Sidewalk	Parking Lane	Bike Lane	#3 Lane	#2 Lane	#1 Lane	Median/ Two-way Left Turn Lane	#1 Lane	#2 Lane	#3 Lane	Bike Lane	Parking Lane	Sidewalk
Existing	102	66	18	-	-	-	13	12	4	12	12	13	-	-	18
Proposed	88	58	15	7	6	-	-	10	12	10	-	-	6	7	15



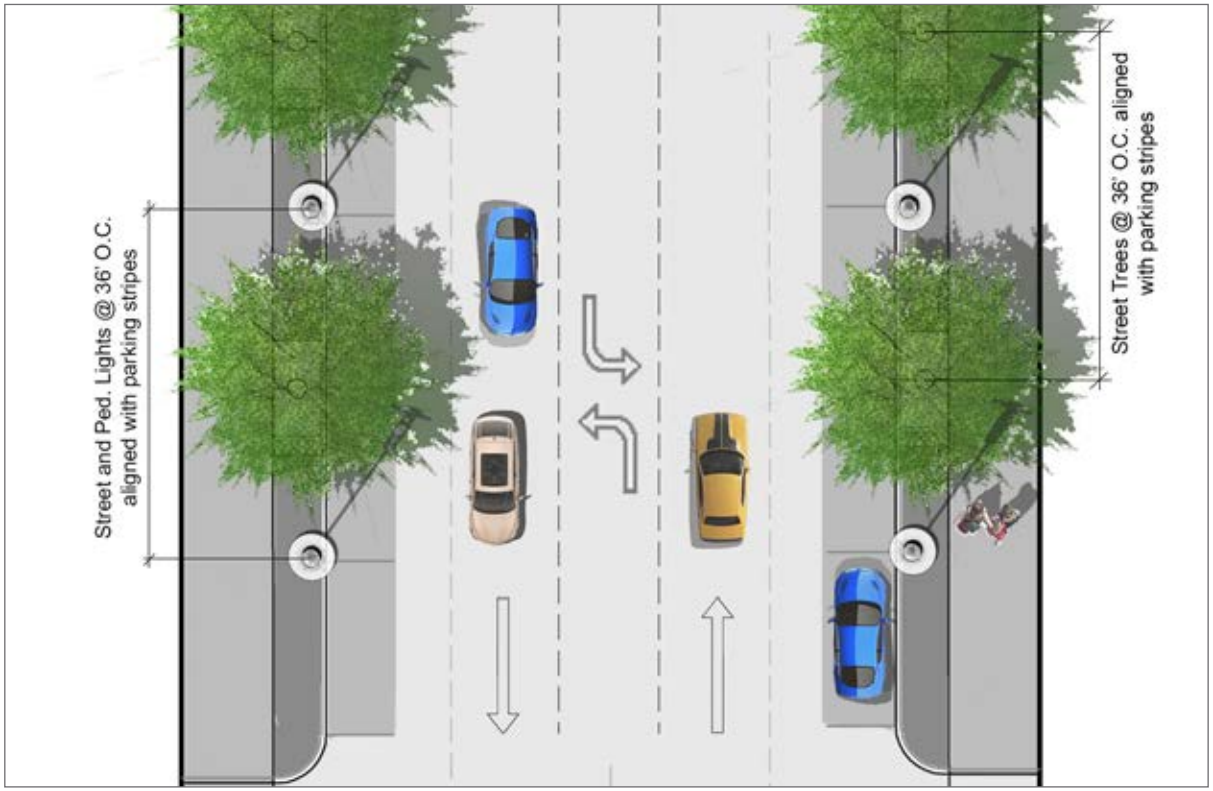


Exhibit 3.25: Hastings Street - Street Section

Hastings Street

Hastings Street is an existing street proposed to have one drive lane in each direction, with parallel parking on both sides. The bike lanes are continuous and 6' wide. Sidewalks are 15' wide and flanked by consistent, large-scale deciduous street trees planted in tree well filter planters, which are also part of the stormwater treatment plan. New modern lights illuminate the sidewalk.

The specific tree placement and materials of construction will be further refined as development occurs and the building heights and configurations are known.

The median fronting Mowry Avenue will allow for a Gateway Art/Landscape Treatment installation to mark the entrance and boundary of the Downtown District.

Sidewalk paving consists of integral color concrete with different surface treatment. The scoring pattern differentiates the main walking path from the street tree zone and the 5' band at the street trees continues into the corner plazas as well.

Hastings Street Materials

Street Trees
Platanus acerifolia "Yarwood", Accent Trees at Capitol, Quercus agrifolia

Sidewalk
Concrete paving in San Diego Buff (Davis Color) with longitudinal scoring (48" typical) and a five foot wide accent paving strip at trees (24" scoring typical) San Diego Buff (Davis Color) with stamped Rock Salt Finish.

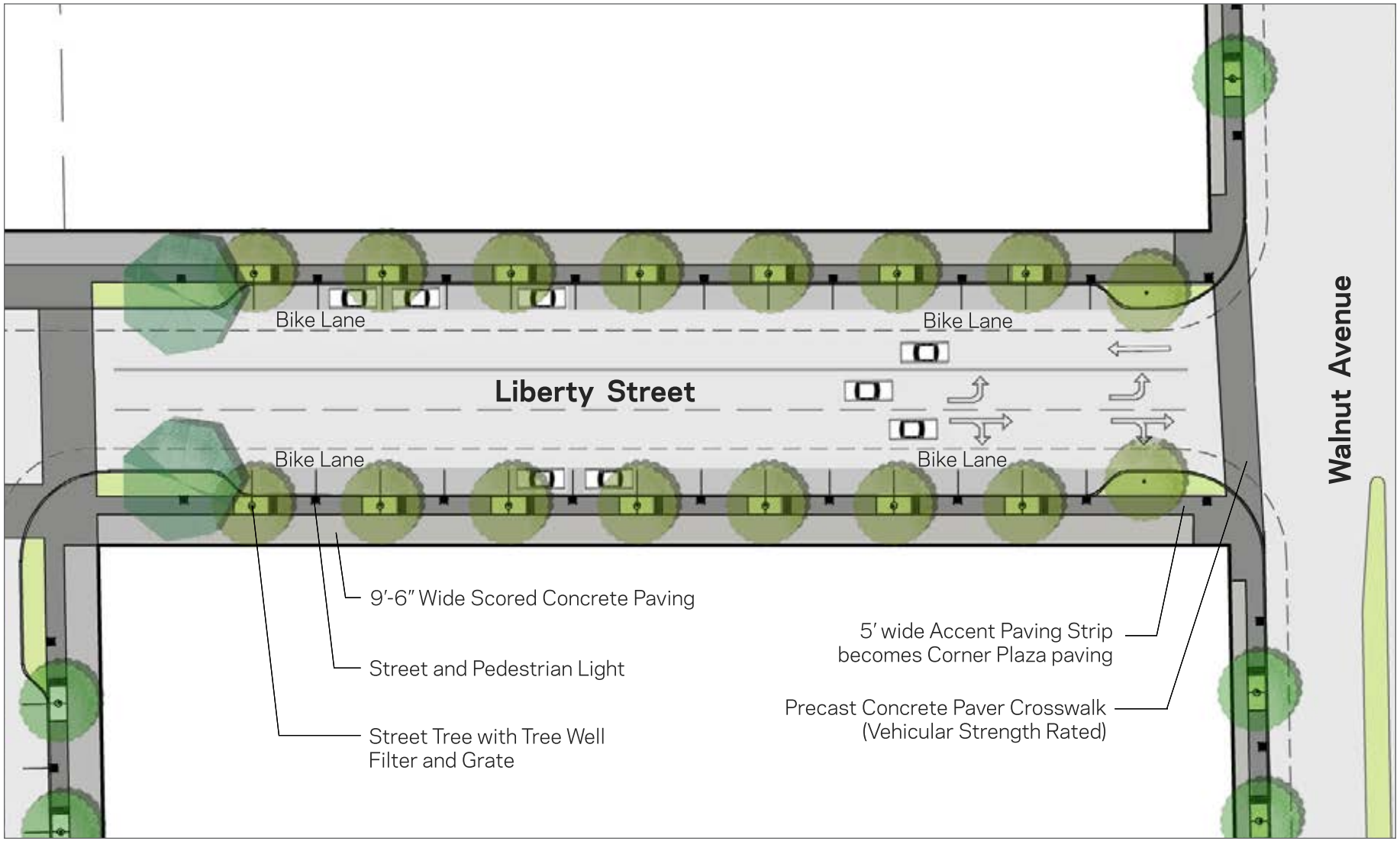
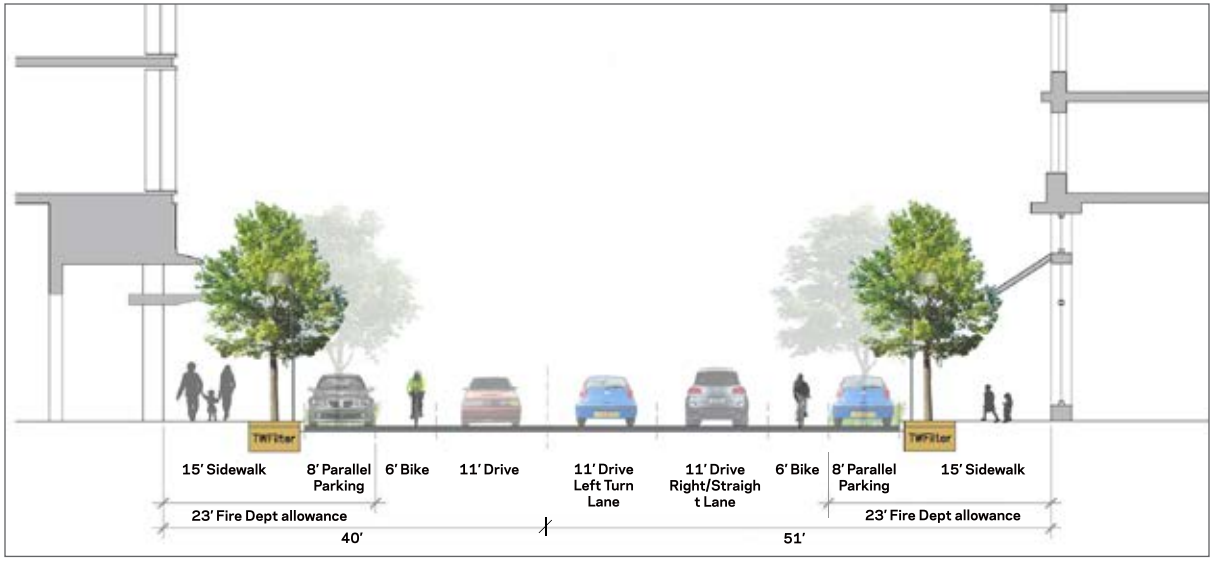


Exhibit 3.26: Liberty Street: Beacon Ave. to Walnut Ave.- Street Plan (top)
Exhibit 3.27: Liberty Street: Beacon Ave. to Walnut Ave. - Street Configuration Dimensions Chart (bottom)

Liberty Street Beacon St. to Walnut Ave.	Right of Way	Curb to Curb	Sidewalk	Parking Lane	Bike Lane	#3 Lane	#2 Lane	#1 Lane	Median	#1 Lane	#2 Lane	#3 Lane	Bike Lane	Parking Lane	Sidewalk
Existing	102	66	18	-	-	13	12	12	4	12	13	-	-	-	18
Proposed	91	61	15	8	6	-	-	11	-	11	11	-	6	8	15



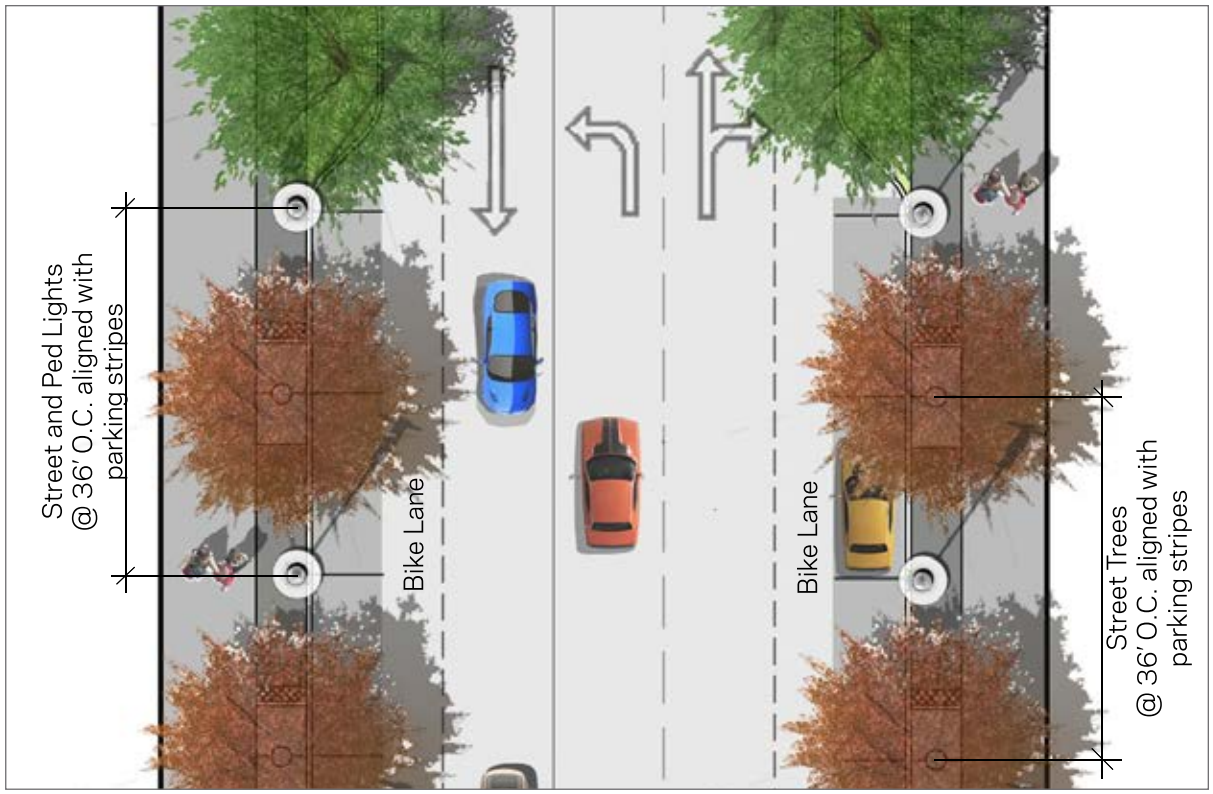


Exhibit 3.28: Liberty Street: Beacon Ave. to Walnut Ave. - Street Section

Liberty Street - Beacon Avenue to Walnut Avenue

Liberty Street is an existing street that will be reconfigured to have one drive lane in each direction, with an additional left/straight turning lane at the Walnut Avenue intersection (see Exhibit 3.26); there is parallel parking on both sides. The bike lanes are continuous and 6' wide. Sidewalks are 15' wide and flanked by consistent, large-scale deciduous street trees planted in tree well filter planters treating public stormwater. New modern lights illuminate the sidewalk.

Specific tree placement and materials of construction will be further refined as development occurs and building heights and configurations are known.

Sidewalk paving consists of integral color concrete with different surface treatment. The scoring pattern differentiates the main walking path from the street tree zone and the 5' band at the street trees continues into the corner plazas as well.

Liberty Street Materials

Street Trees
Acer Rubrum "October Glory"

Accent Trees
Quercus agrifolia

Sidewalk
Concrete paving in San Diego Buff (Davis Color) with longitudinal scoring (48" typical) and a five foot wide accent paving strip at trees (24" scoring typical) San Diego Buff (Davis Color) with stamped Rock Salt Finish.

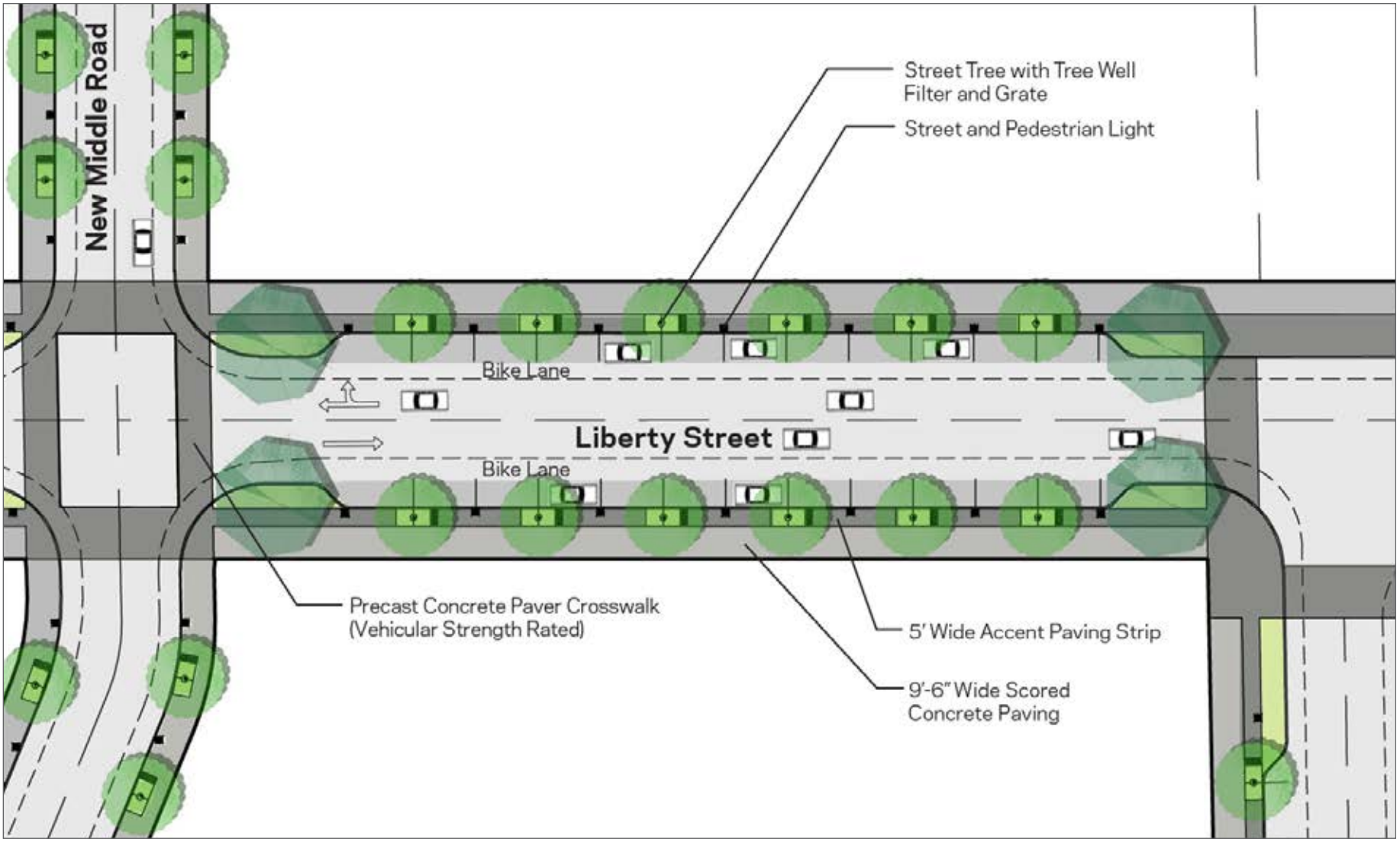
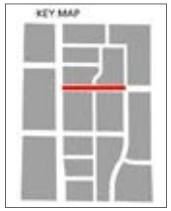


Exhibit 3.29: Liberty Street: Capitol Ave. to Beacon Ave. - Street Plan (top)
Exhibit 3.30: Liberty Street: Capitol Ave. to Beacon Ave. - Street Configuration Dimensions Chart (bottom)



Liberty Street Capitol Ave. to Beacon St.	Right of Way	Curb to Curb	Sidewalk	Parking Lane	Bike Lane	#3 Lane	#2 Lane	#1 Lane	Median	#1 Lane	#2 Lane	#3 Lane	Bike Lane	Parking Lane	Sidewalk
Existing	86	50	18	-	-	-	13	12	-	12	13	-	-	-	18
Proposed	80	50	15	8	6	-	-	11	-	11	-	-	6	8	15

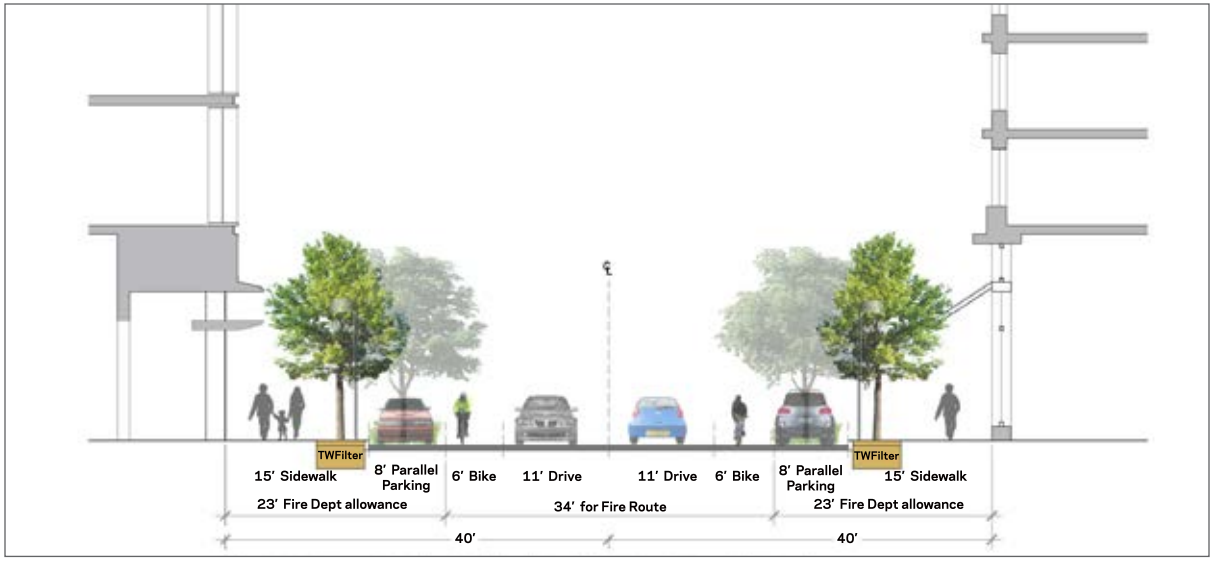


Exhibit 3.31: Liberty Street: Capitol Ave. to Beacon Ave. - Street Section

Liberty Street - Capitol Avenue to Beacon Avenue

Liberty Street is an existing street that will be reconfigured to have one drive lane in each direction, with parallel parking on both sides. The bike lane is continuous and 6′ wide. Sidewalks are 15′ wide and flanked by consistent, upright deciduous street trees planted in tree well filter planters, which are also part of the stormwater treatment plan. New modern lights illuminate the sidewalk.

Sidewalk paving consists of integral color concrete with different surface treatment. The scoring pattern differentiates the main walking path from the street tree zone and the 5′ band at the street trees continues into the corner plazas as well.

Liberty Street Materials

Street Trees
Acer Rubrum "October Glory"

Accent Trees
Quercus agrifolia

Sidewalk
Concrete paving in San Diego Buff (Davis Color) with longitudinal scoring (48" typical) and a five foot wide accent paving strip at trees (24" scoring typical) San Diego Buff (Davis Color) with stamped Rock Salt Finish.

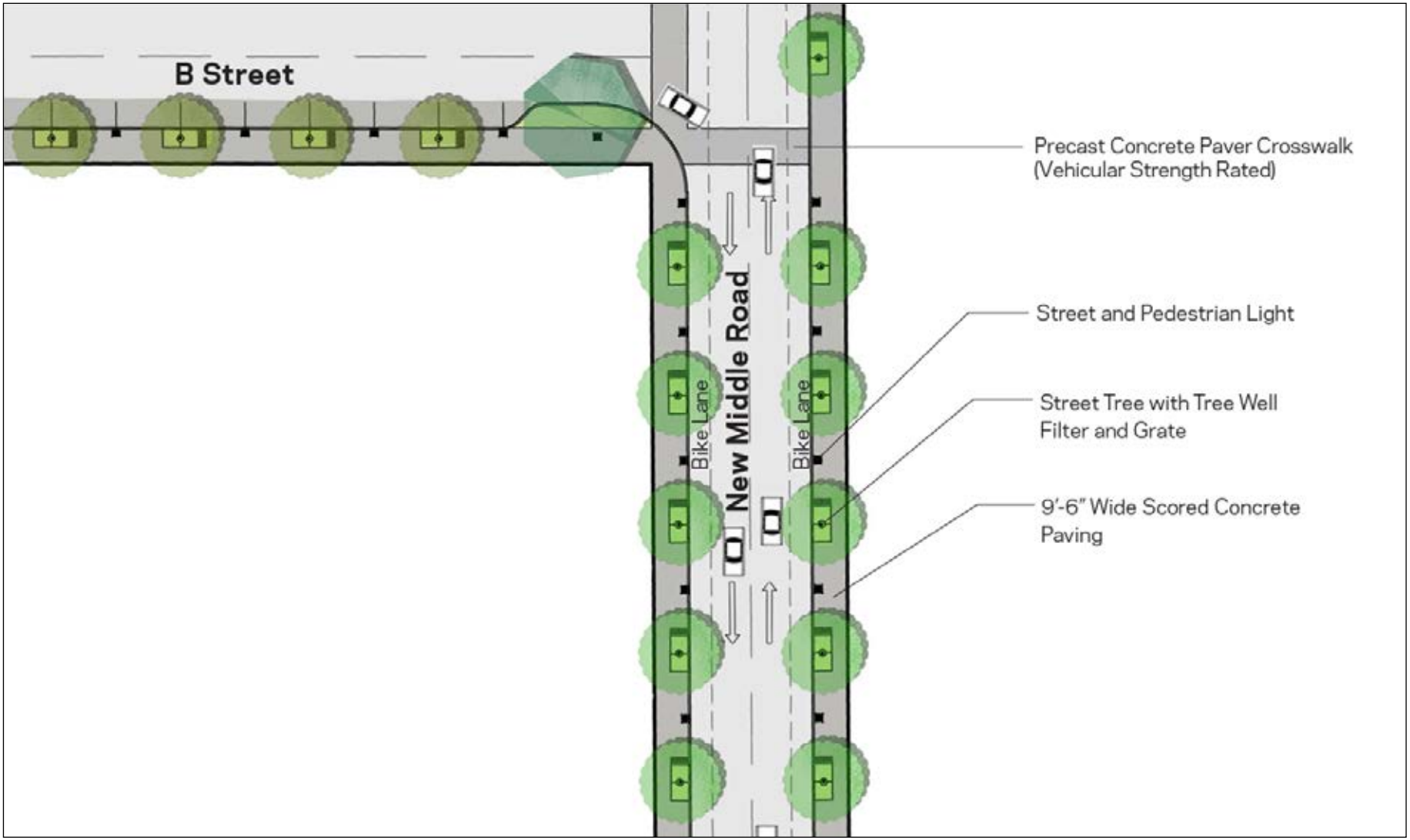
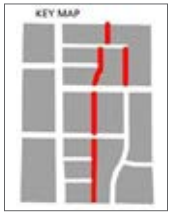
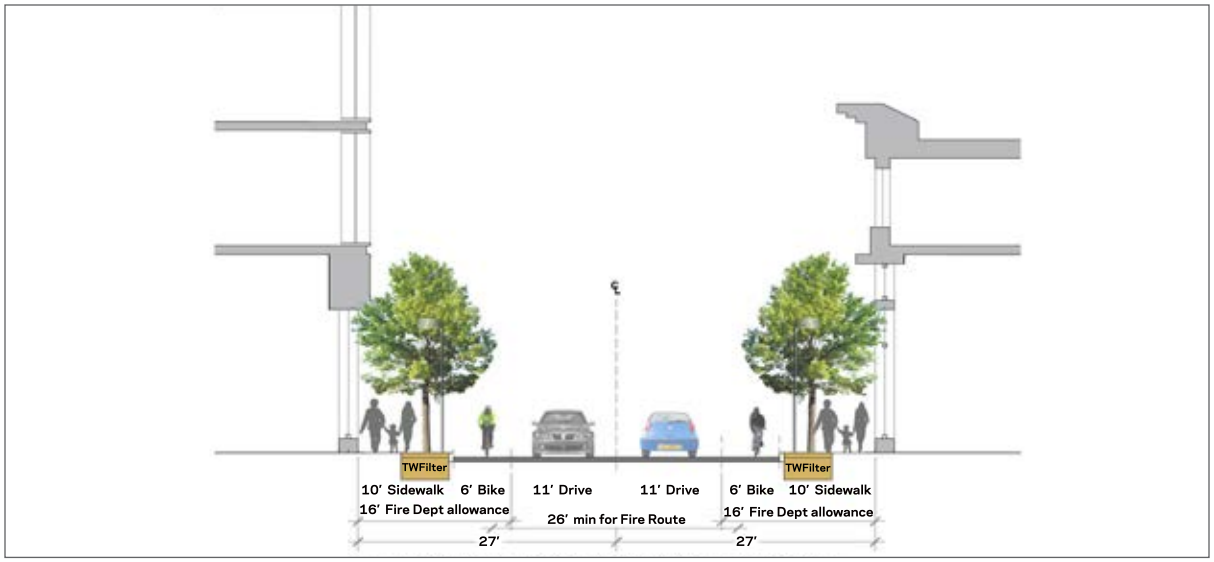


Exhibit 3.32: New Middle Road - Street Plan (top)
Exhibit 3.33: New Middle Road - Street Configuration Dimensions Chart (bottom)



New Middle Road Varies	Right of Way	Curb to Curb	Sidewalk	Parking Lane	Bike Lane	#3 Lane	#2 Lane	#1 Lane	Median	#1 Lane	#2 Lane	#3 Lane	Bike Lane	Parking Lane	Sidewalk
Existing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Proposed	54	34	10	-	6	-	-	11	-	11	-	-	6	-	10



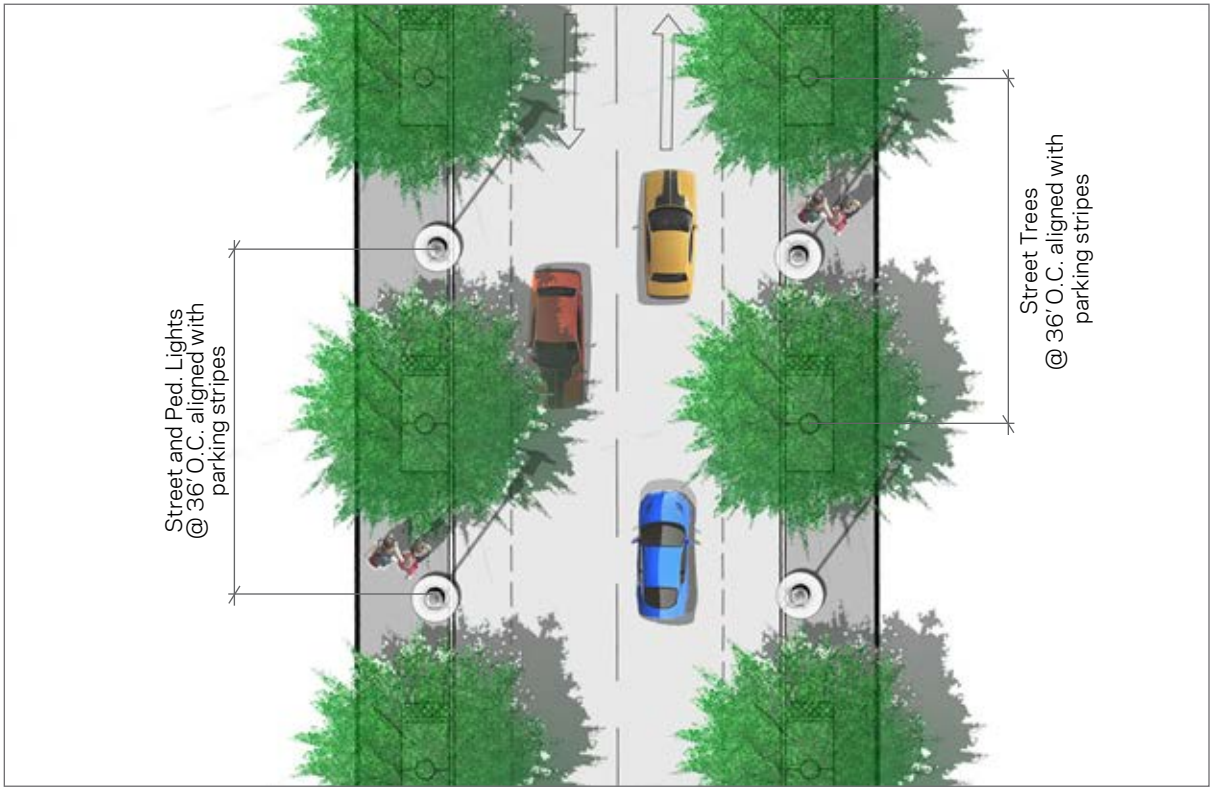


Exhibit 3.34: New Middle Road - Street Section

New Middle Road

New Middle Road is a new east - west street extending from Fremont Boulevard east to Paseo Padre Parkway. It is a two-way road, one-lane in each direction, with bike lanes but no curb side parking. Its alignment coincides with existing easements, property lines and existing rights-of-ways, ending at the existing traffic-signaled intersection at Paseo Padre Parkway and the Gateway Plaza Shopping Center entrance.

This road is conceived as a connecting link to transit as well as a service street for the uses on adjacent active streets. The bike lane is continuous and 6' wide. Sidewalks are 10' wide and flanked by consistent, upright evergreen street trees planted in tree well filter planters, which are also part of the stormwater treatment plan. New modern lights illuminate the sidewalk.

Mid-block crosswalks provide a strong pedestrian linkage across the street.

Sidewalk paving consists of integral color concrete with different surface treatment. The scoring pattern is continuous over the entire sidewalk width.

New Middle Road Materials

Street Trees
Ginkgo biloba 'Princeton Sentry'

Sidewalk
Concrete paving in San Diego Buff (Davis Color) with longitudinal scoring (48" typical) and a five foot wide accent paving strip at trees (24" scoring typical) San Diego Buff (Davis Color) with stamped Rock Salt Finish.

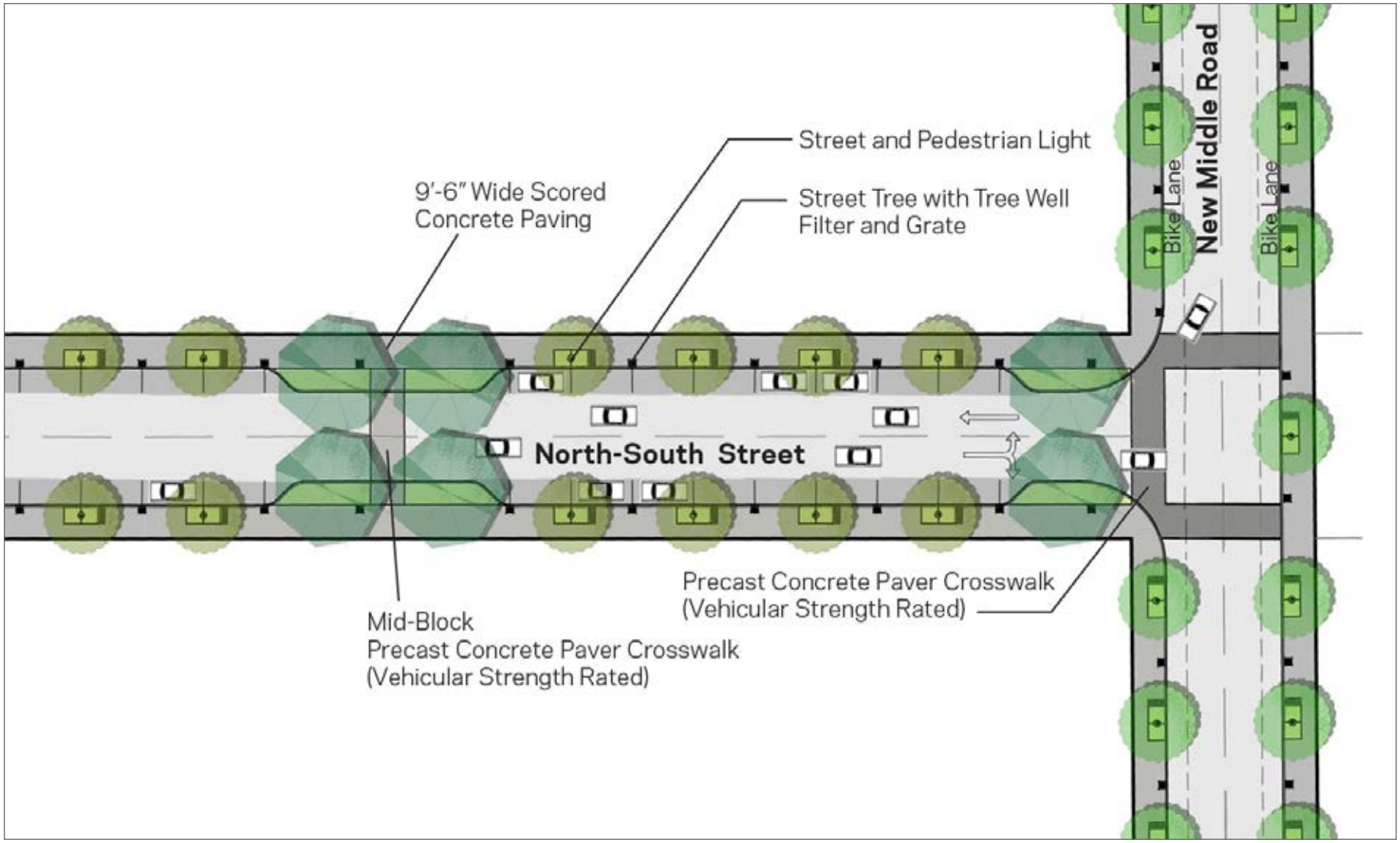
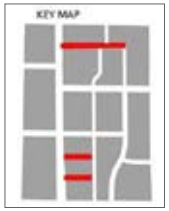
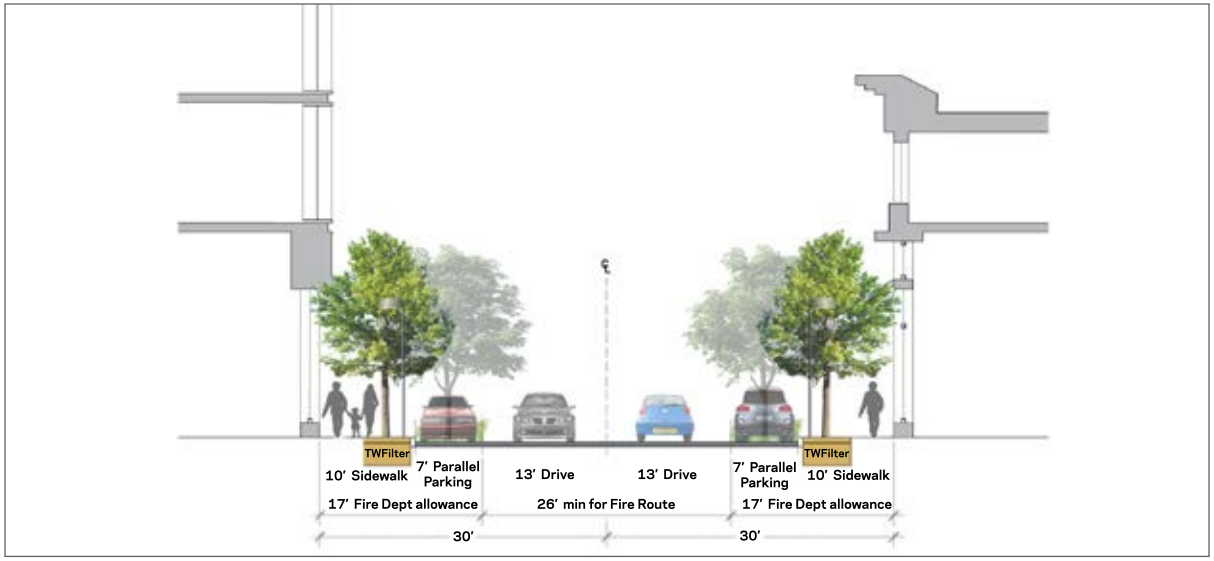


Exhibit 3.35: New North - South Streets - Street Plan (top)
Exhibit 3.36: New North - South Streets - Street Configuration Dimensions Chart (bottom)



New N-S Street Varies	Right of Way	Curb to Curb	Sidewalk	Parking Lane	Bike Lane	#3 Lane	#2 Lane	#1 Lane	Median	#1 Lane	#2 Lane	#3 Lane	Bike Lane	Parking Lane	Sidewalk
Existing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Proposed	60	40	10	7	-	-	-	13	-	13	-	-	-	7	10



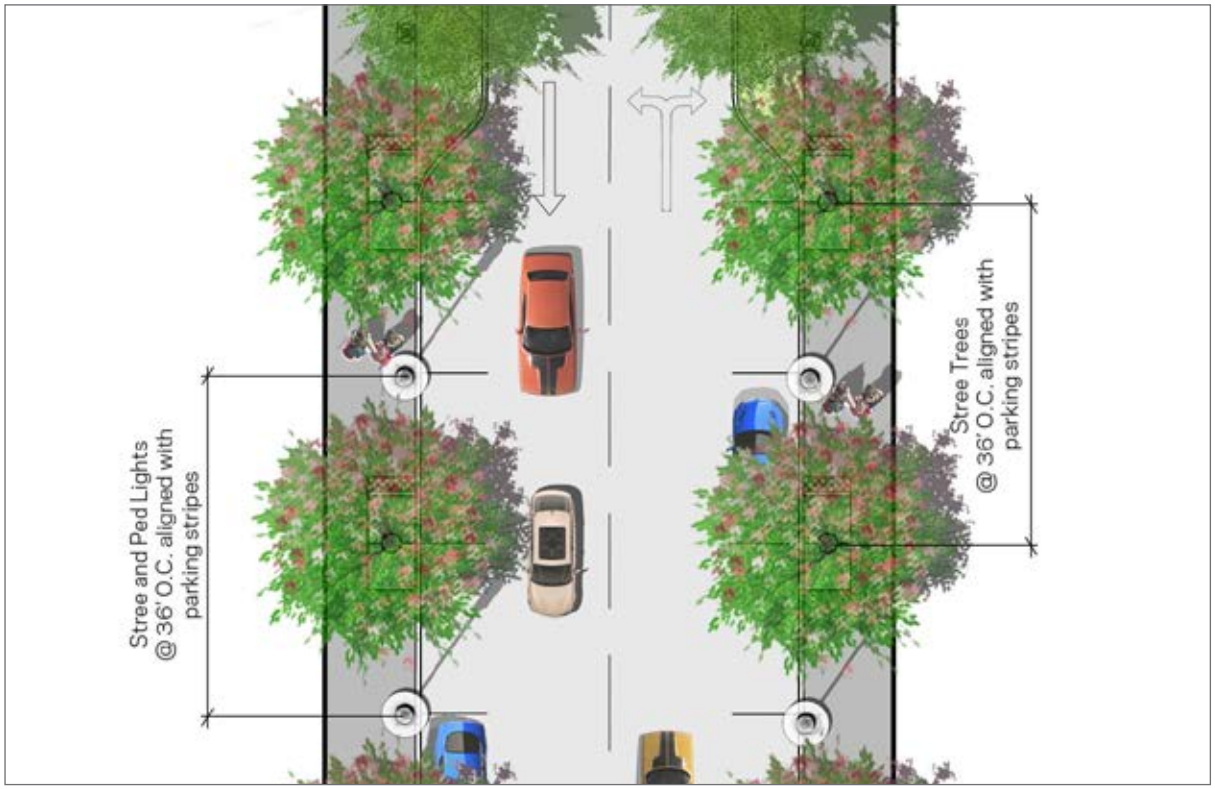


Exhibit 3.37: New North - South Streets - Street Section

New North - South Streets

The three new north - south streets are proposed to connect existing and/or proposed roads to provide a better network of roads and circulation and also to provide access to service drives, parking facilities and loading zones (see exhibit 3.2 for street locations). The three new north-south streets proposed are:

- A Street
- B Street
- C Street

These streets have one drive lane in each direction, with parallel parking on both sides. There is no dedicated bike lane on the streets. Sidewalks are 10' wide and flanked by consistent, fine leafed deciduous street trees planted in tree well filter planters, which are also part of the stormwater treatment plan. New modern lights illuminate the sidewalk. Corner crosswalks provide a strong pedestrian linkage at intersections.

Sidewalk paving consists of integral color concrete with different surface treatment. The scoring pattern is continuous over the entire sidewalk width.

New N-S Street Materials

Street Trees
Prunus caroliniana standards

Accent Trees
Pyrus calleryana 'Chanticleer'

Sidewalk
Concrete paving in San Diego Buff (Davis Color) with longitudinal scoring (48" typical) and a five foot wide accent paving strip at trees (24" scoring typical) San Diego Buff (Davis Color) with stamped Rock Salt Finish.

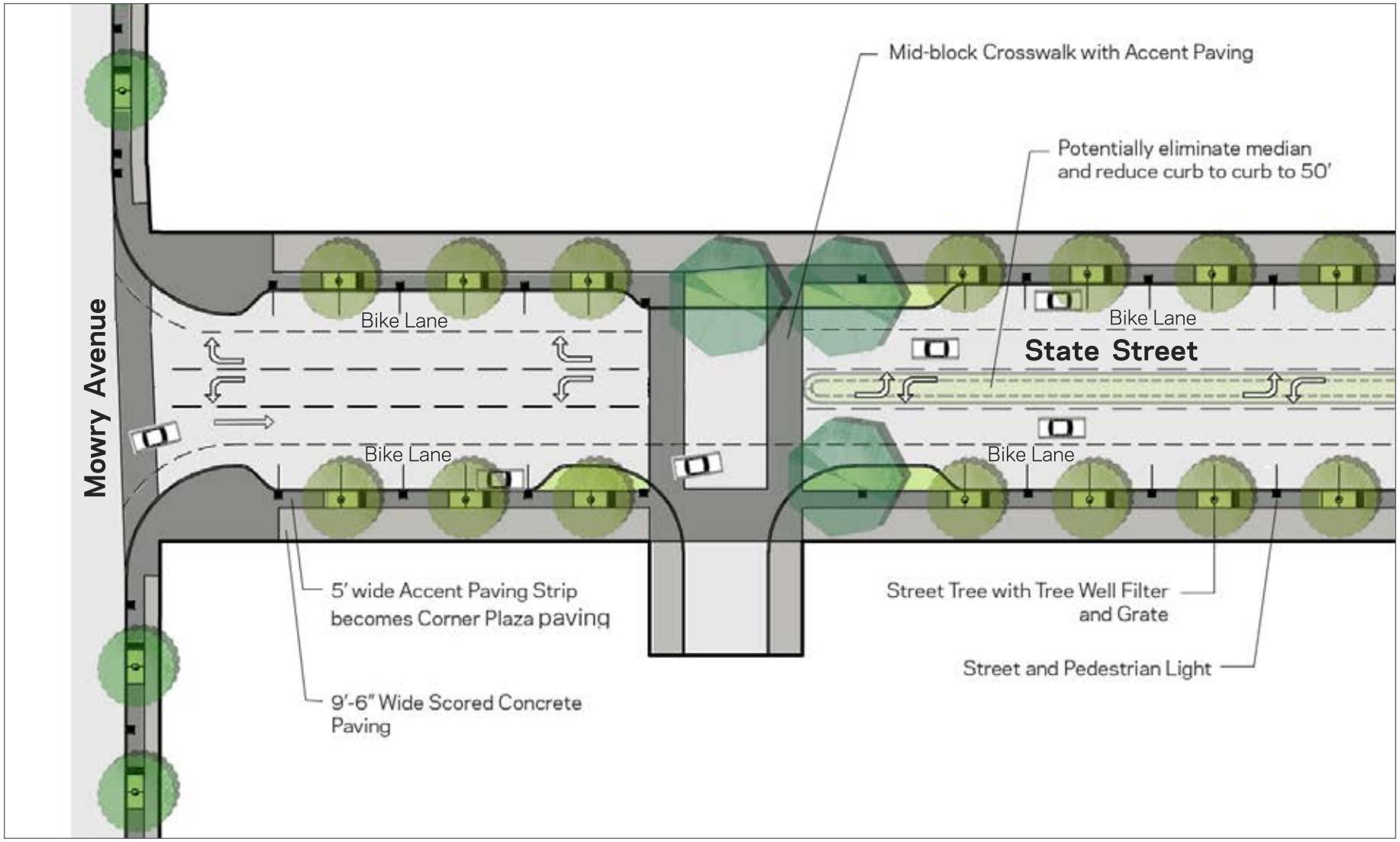
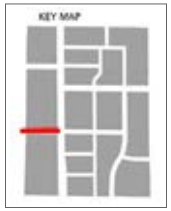
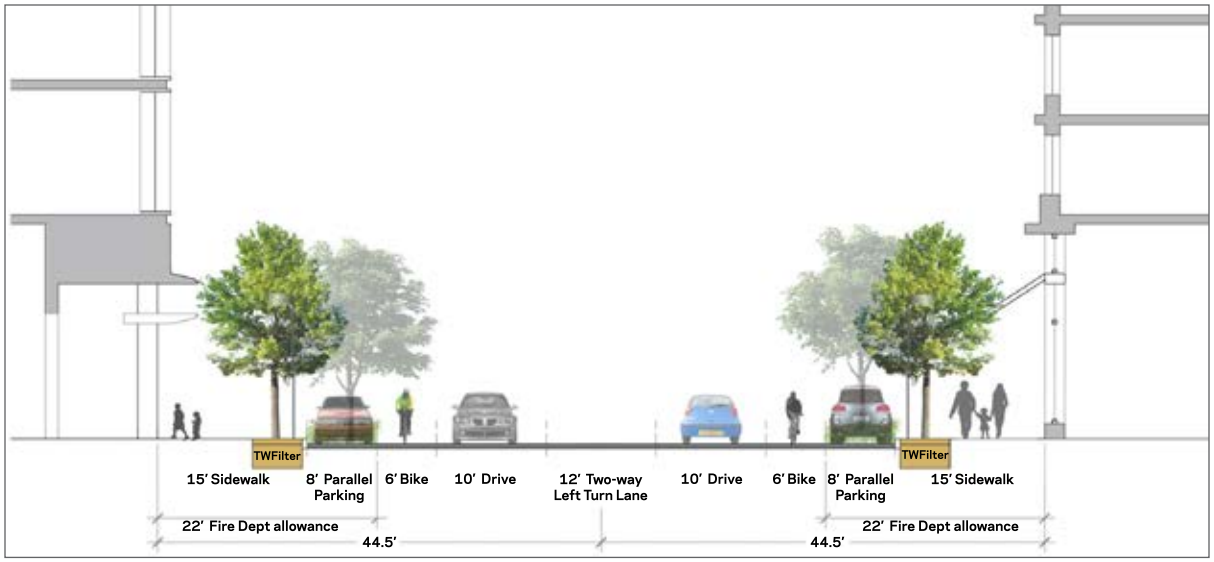


Exhibit 3.38: State Street: Mowry Ave. to Capitol Ave. - Street Plan (top)
Exhibit 3.39: State Street: Mowry Ave. to Capitol Ave. - Street Configuration Dimensions Chart (bottom)



State Street Mowry Ave. to Capitol Ave.	Right of Way	Curb to Curb	Sidewalk	Parking Lane	Bike Lane	#3 Lane	#2 Lane	#1 Lane	Median/ Two-way Left Turn Lane	#1 Lane	#2 Lane	#3 Lane	Bike Lane	Parking Lane	Sidewalk
Existing	102	66	18	-	-	-	13	12	4	12	12	13	-	-	18
Proposed	90	60	15	8	6	-	-	10	12	10	-	-	6	8	15



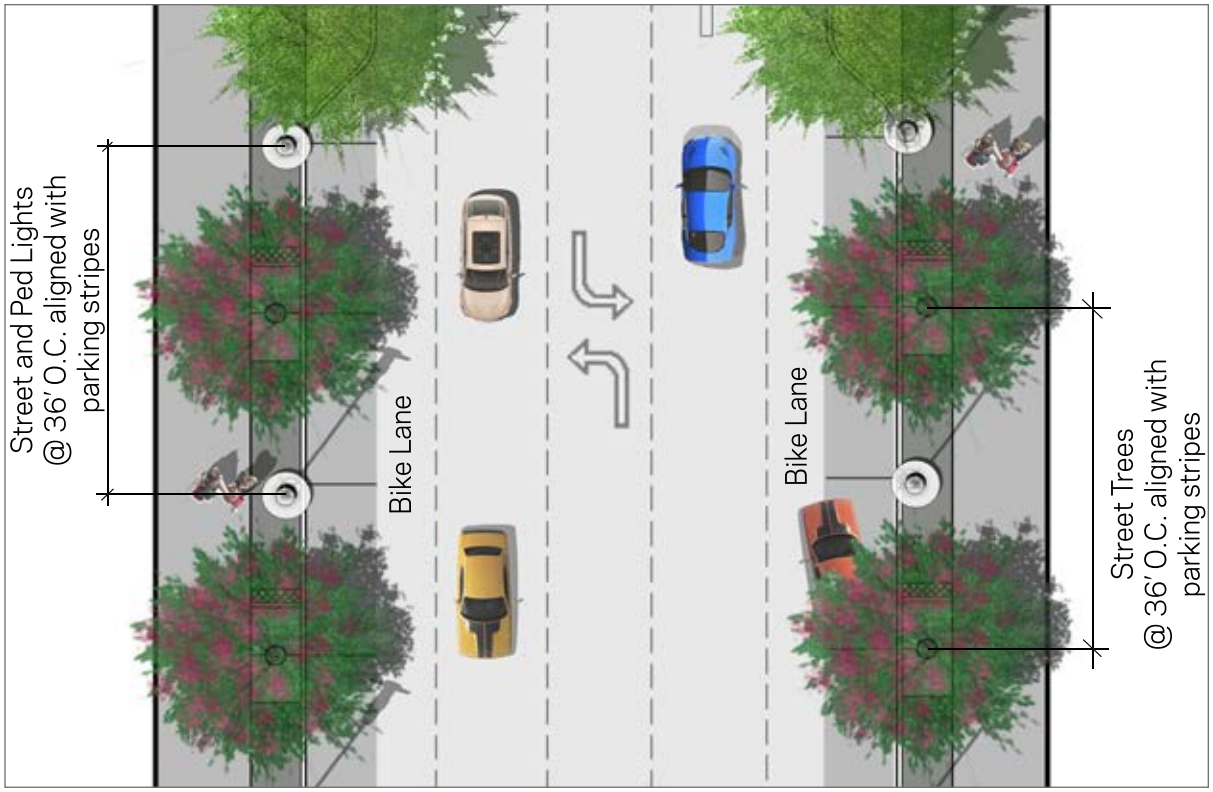


Exhibit 3.40: State Street: Mowry Ave. to Capitol Ave. - Street Section

State Street - Mowry Avenue to Capitol Avenue

State Street is an existing street reconfigured to have one drive lane in each direction and a right turn only lane onto Mowry Avenue; there is parallel parking on both sides. The bike lane is continuous and 6' wide. Sidewalks are 15' wide adjacent to, large-scale deciduous street trees planted in tree well filter planters that treat public stormwater. New modern lights illuminate the sidewalk.

Specific tree placement, median breaks, and materials of construction will be further refined as development occurs and building heights and configurations are known.

Sidewalk paving consists of San Diego Buff and Salt Finish concrete. The scoring pattern differentiates the main walking path from the street tree zone and the 5' band at the street trees continues into the corner plazas as well.

State Street Materials

Street Trees
Pyrus calleryana "Aristocrat"

Accent Trees
Quercus agrifolia

Sidewalk
Concrete paving in San Diego Buff (Davis Color) with longitudinal scoring (48" typical) and a five foot wide accent paving strip at trees (24" scoring typical) San Diego Buff (Davis Color) with stamped Rock Salt Finish.

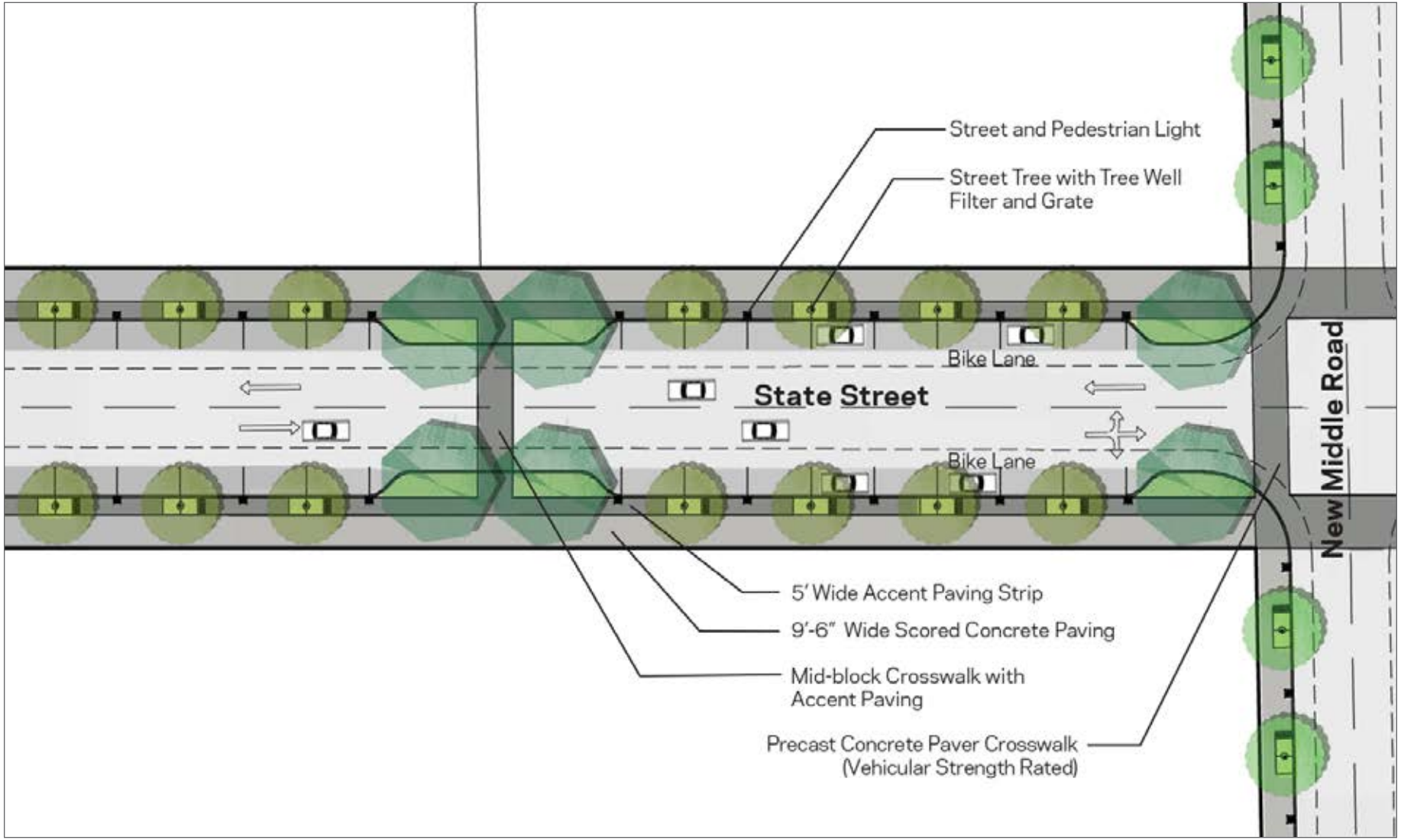


Exhibit 3.41: State Street: Capitol Ave. to Beacon Ave. - Street Plan (top)
Exhibit 3.42: State Street: Capitol Ave. to Beacon Ave. - Street Configuration Dimensions Chart (bottom)

State Street Capitol Ave. to Beacon Ave.	Right of Way	Curb to Curb	Sidewalk	Parking Lane	Bike Lane	#3 Lane	#2 Lane	#1 Lane	Median	#1 Lane	#2 Lane	#3 Lane	Bike Lane	Parking Lane	Sidewalk
Existing	86	50	18	-	-	-	13	12	-	12	13	-	-	-	18
Proposed	80	50	15	8	6	-	-	11	-	11	-	-	6	8	15

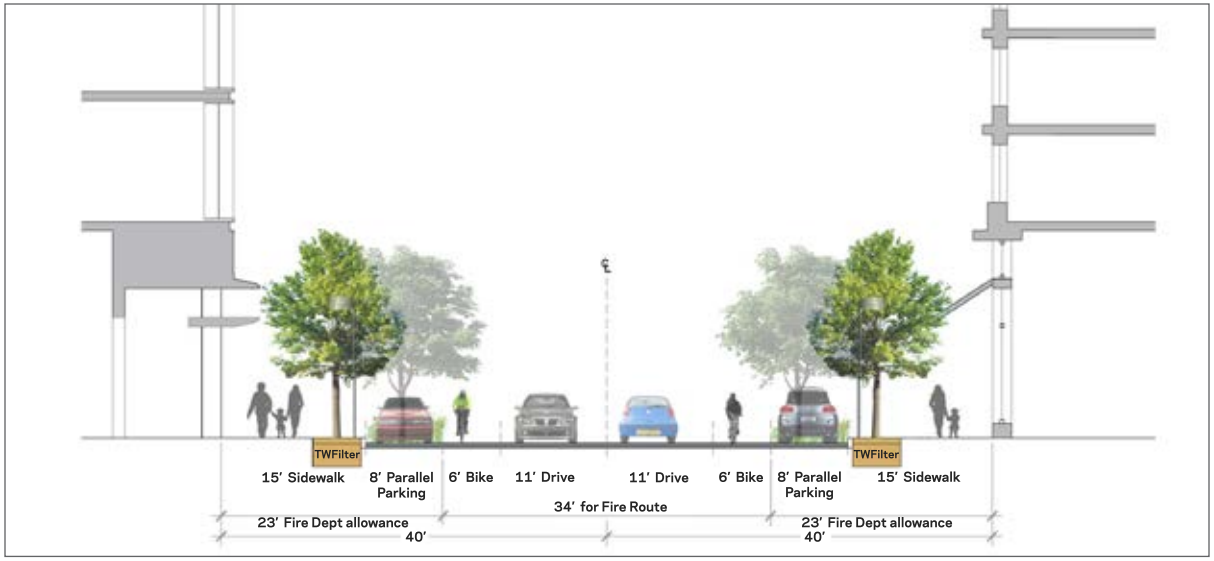


Exhibit 3.43: State Street: Capitol Ave. to Beacon Ave. - Street Section

State Street - Capitol Avenue to Beacon Avenue

State Street is an existing street that is proposed to be reconfigured for one drive lane in each direction, with parallel parking on both sides. The bike lane is continuous and 6' wide. Sidewalks are 15' wide and flanked by consistent, upright deciduous street trees planted in tree well filter planters, which are also part of the stormwater treatment plan. New modern lights illuminate the sidewalk.

Sidewalk paving consists of integral color concrete with different surface treatment. The scoring pattern differentiates the main walking path from the street tree zone and the 5' band at the street trees continues into the corner plazas as well.

State Street Materials

Street Trees
Acer rubrum "Armstrong"

Accent Trees
Quercus agrifolia

Sidewalk
Concrete paving in San Diego Buff (Davis Color) with longitudinal scoring (48" typical) and a five foot wide accent paving strip at trees (24" scoring typical) San Diego Buff (Davis Color) with stamped Rock Salt Finish.

3.3 STREETSCAPE DESIGN ELEMENTS

Downtown's public streetscape design elements are intended to reinforce the urban, pedestrian-oriented streets. These highlighted elements have been selected based on their compatibility with the proposed Downtown District's.

This section covers that following design elements:

- Pedestrian Paving Materials
- Street Lighting
- Street Furniture
- Street and Median Trees

Exhibit 3.44: Metro 40 Furniture by Landscape Forms

Pedestrian Paving Materials

Pedestrian paving provides a unifying surface for the neighborhood. Materials are consistent for their use and location relative to the urban framework of the Downtown District.

Sidewalks are proposed to be paved with integral color concrete with different surface treatments, with salt finish surface treatment along sidewalks fronting Capitol Avenue to create depth to the pavement.

Special unified scoring is introduced throughout the site. 24" wide longitudinal score pattern for accent 5' wide bands defines the stormwater treatment areas and connects the tree grates visually along the street. Corner plazas are scored to match the banding typically. Accent band scoring turns into 48" wide longitudinal score pattern at the concrete sidewalks.

Where landscaped medians occur on Capitol Avenue and the District's gateway intersections, pervious paving - drivable, permeable surfaces, such as permeable pavers, are proposed to allow for fire truck equipment accessibility.

Exhibit 3.45: Permeable Pavers Median

Exhibit 3.46: Davis San Diego Buff Concrete

Exhibit 3.47: Salt Finish Surface

Exhibit 3.48: Salt Finish Surface Close-Up

Exhibit 3.49: Precast Concrete Paver Crosswalk (Vehicular Strength rated)

Street Lighting

The pedestrian scale lighting creates a modern, but timeless character. Recycled steel / aluminum construction materials are functional and environmentally friendly. The light fixtures use LED light source contributing to reducing energy consumption, increasing longevity with low maintenance needs.

Proposed fixtures must meet the City of Fremont's full cut-off requirements. Acceptable fixtures include but are not limited to Landscape Forms and Forms and Surfaces models shown here.

- All streetscape lighting is to be comprised of LED lights. The use of LED lights reduces maintenance and contributes to the overall sustainability of the project through energy-efficient lighting.

Exhibit 3.51: Hi-Glo Ped. Light + Lo-Glo Bollard
Metro40 Series, by Landscape Forms

Exhibit 3.52: LightScale Bollard Light, by Forms + Surfaces (lt)
Exhibit 3.53: Trio Ped. Light, by Forms + Surfaces (rt)

Exhibit 3.54: Knight Ped. Light + Bollard, by Forms + Surfaces

Street Furnishings

The Downtown street furnishings are intended to reinforce and complement the modern and sustainable urban character of the District. Therefore, a number of different contemporary bicycle racks and bench families of a similar style are recommended for the streetscape. The idea of having a variety of public street forms enhances the richness and diverse nature of the neighborhood. It also allows for changes and evolution in the design character over time.

- Priority should be placed on street furnishings that are sustainable in character either through their materials, construction method, or other qualities.

Preferred materials should consist of recycled steel / aluminum finished with environmentally friendly techniques, certified wood, optional solar panels for bus shelters and signage panels and others.

Sustainability goals can also be met through proper furniture placements by supporting: mass transit (bus shelters, signage, benches, light fixtures, trash receptacles), activities (bicycle racks and lockers), leisure (benches, plaza seating, signage, light fixtures, and trash receptacles).

Exhibit 3.55: Garden Bike Racks, by Forms + Surfaces

Exhibit 3.56: Spiral Bike Rack, by Bike Parking

Exhibit 3.57: Bike Rack, Metro40 Series, by Landscape Forms

Exhibit 3.58: Trash Receptacles, by Landscape Forms

Exhibit 3.59: Bench, Metro40 Series, by Landscape Forms

Street and Median Trees

Street trees complement the clean and modern look of the Downtown District.

A variety of deciduous trees are being used in tree well filter planters flanking all public sidewalks.

Planting islands in medians and at mid-block are accented with evergreen trees to provide interest in winter months.

At the gateway intersections of Downtown, tall palm trees and the Art elements create a sense of arrival. Selected street trees are meant to give variety in color, texture and provide shading for streets, sidewalks, parking areas and public plazas of the Downtown District. When selecting and planting trees, it's important to consider the adjacent use and building signage.

Street Tree Palette:

- Acer rubrum 'Armstrong'
- Acer rubrum 'October Glory'
- Celtis sinensis
- Pistacia chinensis
- Platanus acerifoila 'Columbia'
- Pyrus calleryana 'Aristocrat'
- Arbutus marina,
- Ginkgo biloba 'Princeton Sentry'

Median + Accent Tree Palette:

- Lagerstroemia indica 'Tuscarora'
- Magnolia grandiflora
- Quercus agrifolia
- Phoenix dactylifera

Exhibit 3.60: Acer rubrum 'Armstrong,' Street Tree

Exhibit 3.62: Phoenix dactylifera, Median + Accent Tree

Exhibit 3.61: Celtis sinensis, Street Tree

Exhibit 3.63: Ginkgo biloba 'Princeton Sentry,' Street Tree

Exhibit 3.64: Quercus agrifolia, Accent Tree

Exhibit 3.67: Pistacia chinensis, Street Tree

Exhibit 3.69: Pyrus calleryana 'Aristocrat' in bloom, Street Tree

Exhibit 3.65: Arbutus marina, Street + Median Tree

Exhibit 3.68: Platanus acerifolia 'Columbia,' Street Tree

Benefits of Trees

In addition to tree planting, when possible, efforts should be made to retain existing trees. This will help to preserve and extend the tree canopy and shade in the District. The proposed tree planting is intended to create new, more continuous tree canopy. The shade produced will help to lower ambient temperatures on the walks, roadways, parking areas reducing heat island effect and creating a more comfortable and distinctive district ambiance.

3.4 STORMWATER SYSTEM

With the growing scarcity of water in the west, stormwater has become a critical environmental issue. This Plan is designed to meet ambitious new and pending sustainability goals from the State, County and City. At a minimum, development in the Downtown District will be required to provide storm water treatment in conformance with the San Francisco Bay Regional Water Quality Control Board's Municipal Regional Stormwater NPDES Permit Section C.3 and other applicable regulations.

In an effort to meet long term stormwater Green infrastructure (GI) Plan goals for the City, projects that do not meet the MRP's "regulated project" definition that requires stormwater treatment shall strongly consider the installation the treatment measures or GI features in the design of the project.

Green Infrastructure Plan

The City of Fremont will approve a Green Infrastructure Plan (GI Plan) in compliance with Provision C.3.j of the MRP. Over the long term, the Plan is intended to describe how City will shift its impervious surfaces and storm drain infrastructure from gray, or traditional storm drain infrastructure where runoff flows directly into the storm drain and then the receiving water, to green—that is, to a more-resilient, sustainable system that slows runoff by dispersing it to vegetated areas, harvests and uses runoff, promotes infiltration and evapotranspiration, and uses bioretention and other green infrastructure practices to clean stormwater runoff. The design of GI features incorporated in any downtown projects shall be in accordance with the GI guidelines, standard specifications, and typical designs included in the City of Fremont's Green Infrastructure Plan.

Public Streets

Stormwater from the public streets will be treated using tree well filters installed at the face of curb. The tree well filter size may be adjusted to accommodate tree spacing and the impervious area being treated based on providing a planter box area equivalent to at least 4 percent of the impervious runoff area.

Bio-retention cells and other vegetation-based treatment methods may be used in intersection bulb-outs and medians to augment the treatment provided by the tree well filters.

Private Development

Individual parcels will be responsible for their own stormwater quality treatment. It is anticipated that standard Best Management Practices will be implemented to provide stormwater treatment. Low impact development and stormwater treatment measures are required as part of the San Francisco Bay Regional Water Quality Control Board requirements. Low impact development measures may include:

- Reuse of water,
- Bio-infiltration areas,
- Bio-retention areas,
- Rain gardens,
- Green roofs,
- Landscaped areas and tree planting, or other methods.

Stormwater Quantity Control

In its existing condition, the Downtown District is almost entirely impervious. Redevelopment of this area will include significant new additional green space and will thereby reduce the total impervious area of the District. Reducing imperviousness will slightly decrease runoff and peak discharge from the site and will likely not impact the existing storm drain facilities. Developers will be encouraged to store rain water, which would further reduce demands on the storm drain system.

Exhibit 3.70: Treewell Filter - Stormwater Treatment

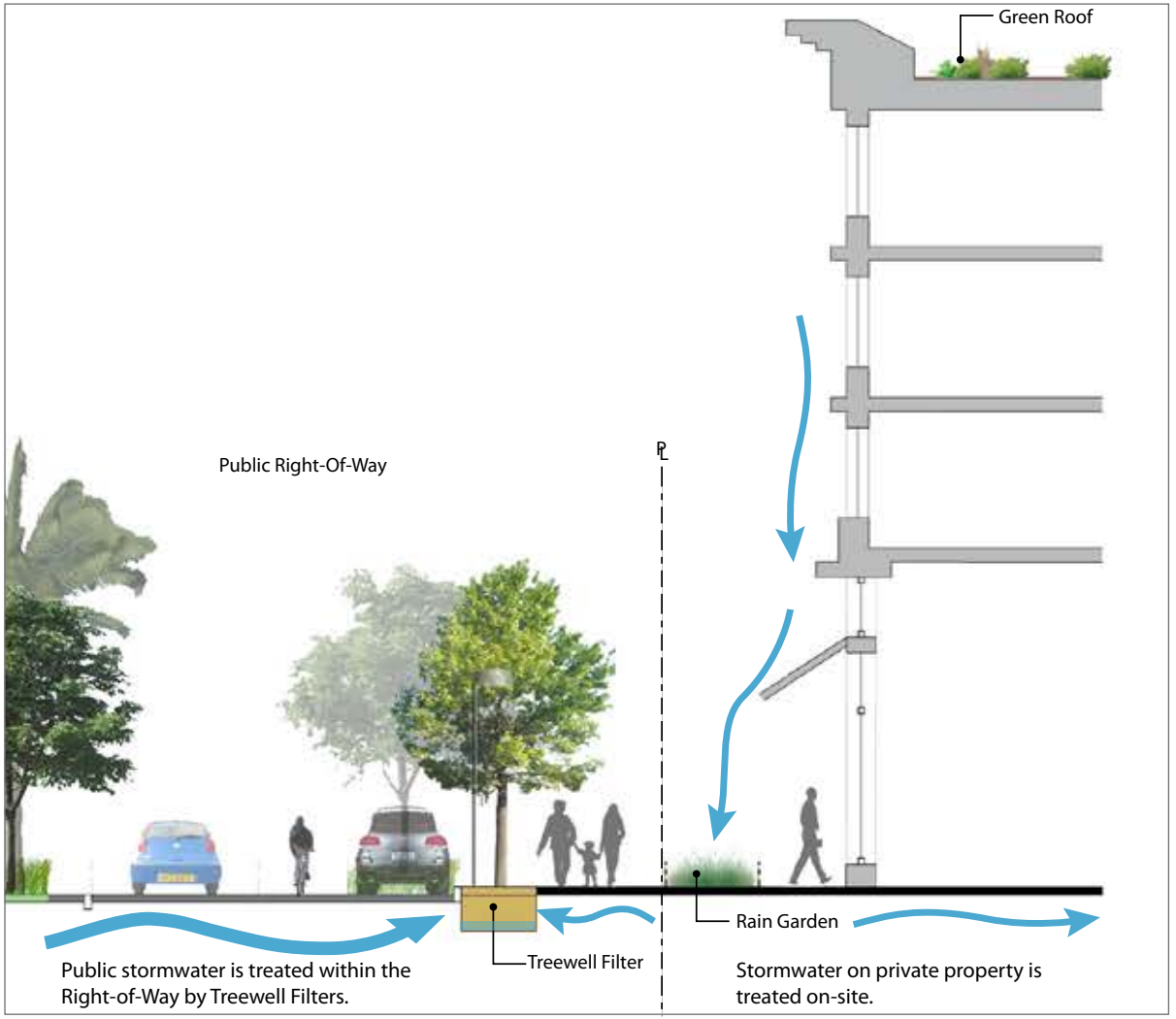


Exhibit 3.71: Stormwater Public + Private Treatment

3.5 DOWNTOWN ART PROGRAM

Mission

The Downtown Art Program is intended to contribute to the economic and cultural vitality of Downtown by highlighting and promoting the arts in Fremont through a variety of public and private art features, exhibits and individual pieces of art. It will become an integral part of defining the character of the District and will significantly enhance the visitor's experience.

The Art Program shall apply to all projects within the district, including commercial, office, and residential developments. This program builds on the City's previous and on-going efforts to incorporate Art into large developments such as at the Target shopping center, the HUB, and at Washington Hospital. These installations are often prominently situated at Fremont's main throughfare intersections.

Downtown's Art will attract and create interest in the City while enriching the lives of residents, employees and visitors alike. The Downtown Art Program will be an important element in transforming the area and creating a vibrant new destination point for Fremont.

Concept

With varied and distinctive artworks dispersed throughout the District, the Art Program provides opportunities for installations on both public and private property, all within public viewing both day and night. The Art Program will spur economic development by creating a destination, which attracts visitors and encourages walking through the streets of Downtown. Implementation will occur as development and funding allows with the intent to have the first art pieces near priority projects.

Essential to this Program is the fact that a Downtown Public Art Fund will be established to ensure a cohesive and planned approach to the procurement, installation and proper long-term maintenance of the art. In addition to permanent installations, temporary art and events will be encouraged to provide on-going public interest and involvement.

The key district art installation types are:

- District Primary Gateway Art
- District Secondary Gateway Art
- Signature Civic Center Art
- Civic Parks Art
- District Art Walk
- Private Development Art

Temporary Art Installations
(not located on map; location to be determined by City)

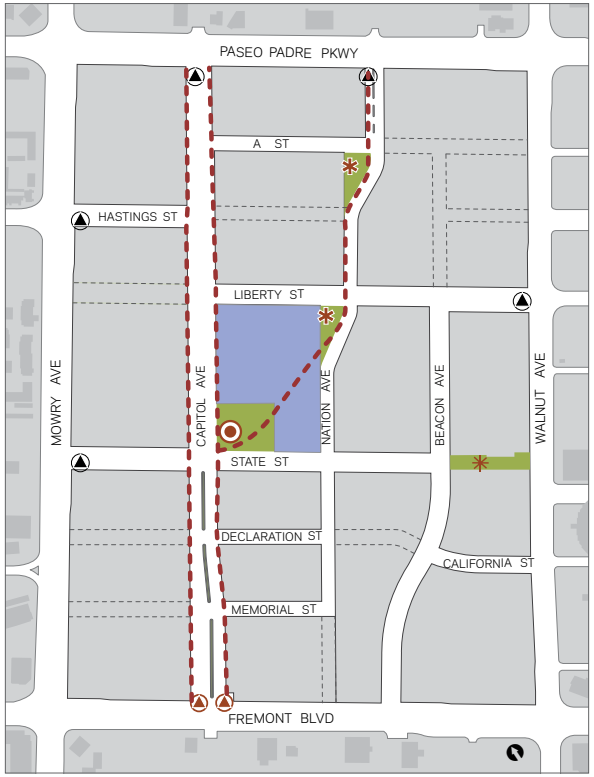


Exhibit 3.72: Downtown Public Art Location Map

Art Program Guiding Principles

- Articulates Downtown's vision, goals and objectives.
- Integrates with the surrounding site and context.
- Orients towards and is publicly viewable by residents and visitors.
- Sensitively responds to the environment and ecology.
- Fosters creativity and inspiration.
- Create wholistic art experience by integrating art into buildings and enhancing open spaces

Exhibit 3.74: "Fremont Firefighters" David Anthony
Location: Fire Station #4 - Fremont, CA
Source: City of Fremont

Downtown Art Program: Participation and Funding Requirements
*Funding amount to be set by a City Council Resolution.

Project Applicability	Contribution Options	Implementation Process
Private Development: New construction less than 100,000 square feet.	At $ x.xx* per gross square foot of structure, contribute: ▪ 100% to the Downtown Public Art Fund.	▪ Funds will be allocated to the Downtown Public Art Fund. The City will oversee the design and installation per the Art Program.
Private Development: New construction equal to or greater than 100,000 square feet	At $ x.xx* per gross square foot of structure, contribute: ▪ 50% allocated to the Downtown Public Art Fund and ▪ 50% allocated to on-site artwork.	▪ Funds will be allocated to the Downtown Public Art Fund. The City will oversee the design and installation per the Art Program.
(or)		▪ Developer proposes on-site artwork for City staff review and approval. Developer installs and maintains artwork.
	At $ x.xx* per gross square foot of structure, contribute: ▪ 100% to the Downtown Public Art Fund.	▪ Funds will be allocated to the Downtown Public Art Fund. The City will oversee the design and installation per the Art Program.
Public Projects: All buildings and public open space projects within Downtown.	▪ Contribute 1% of total construction costs to the Downtown Public Art Fund, per City policy.	▪ City of Fremont will allocate funds to implement Public Art in the Downtown District, per City policy.

Exhibit 3.73: Downtown Art Program - Participation and Funding Requirements

Primary Gateway Art

Location

The Primary Gateway Art Feature is to be located at the foot of the new Capitol Avenue extension, where it meets Fremont Boulevard. The intersection is in alignment with the existing traffic signal and western entry drive for The Hub Shopping Center on Fremont Boulevard. The art is to be placed on either sides of the roadway, or one side of the roadway within the public right-of-way's landscaped sidewalk.

Intent

The Primary Gateway Art Feature is intended to be a distinctive art installation that identifies the main entry point to the Downtown District. The art should be of sufficient scale and height to denote a civic presence and district marker. The art should be visible to approaching pedestrians, bicyclists and vehicles, particularly from Fremont Boulevard.

The feature may be two vertical elements framing Capitol Avenue, one gateway element arching the foot of the avenue, or some other feature that helps to clearly delineate this location as the primary vehicular gateway to the Downtown District. Consideration should be given to its daytime appearance as well as its nighttime illumination.

Exhibit 3.75: "Harbor View" Cliff Garten
Location: Long Beach, CA
Source: Rik Sferra
Copyright: Cliff Garten Studio

Exhibit 3.76: "Standing Leaves, Falling Light" Barbara Grygutis
Location: Overlake Transit Center - Redmond, WA
Source: Spike Mafford
Commissioned by: 4Culture, King County Public Art

Secondary Gateway Art

Location

The Secondary Gateway Art Features are located at each of the five new landscaped medians intersecting the bounding roadways of Downtown, which include:

- Mowry Avenue + Hastings Street
- Mowry Avenue + State Street
- Paseo Padre Parkway + Capitol Avenue
- Paseo Padre Parkway + New Middle Road
- Walnut Avenue + Liberty Street

Intent

The Secondary Gateway Art Features are intended to identify the Downtown District entry points and echo the design of the Primary Gateway Art Feature on Capitol Avenue and Fremont Boulevard. The Art should be of sufficient scale and height to be viewed from approaching vehicles and pedestrians along the bounding roadways, but smaller in scale and size than the primary Capitol Avenue Art.

The features should be visible in the day and illuminated at night. Each art piece should be unique but identifiable as being part of the other gateway art series.

All Primary and Secondary Gateway artworks may be created by the same Artist or Artist team and may be based on the same concepts, themes, forms and/or media, but each feature should also have unique elements that distinguish it from the others.

Exhibit 3.77: Iconic Water Feature
Location: Unknown
Source: Unknown

Exhibit 3.78:
"Crossing" Archie Held
Location: The Crossing Condominiums, San Bruno, CA.
Source: Artist

Civic Park Art

Location

Within the Downtown District, there are three proposed civic parks which occur along New Middle Road:

- Liberty Street + New Middle Road
- A Street + New Middle Road
- State Street + Beacon Avenue (Urban Housing site)

Intent

The Civic Park Art Features are intended to enliven and enrich these small neighborhood park settings. They are sites tied together with the Downtown Art Walk feature, which leads pedestrians from Capitol Avenue and the Civic Center towards the BART Station to the east.

The park art features can be a wide range of elements: functional or not, one piece or multiple pieces, static or dynamic, sculptural or environmental, but in all cases should consider the immediate context of the park and its daily users. The scale of Civic Park Art should be appropriate for pedestrians and park users, located to be seen from the sidewalk and not only for park users but also from passing bicyclists on the adjacent streets. The art should be illuminated in the evening.

Exhibit 3.79: "Praise the Children and They Will Grow"
Lynne-Rachel Altman
Location: Santa Clara Central Park Library - Santa Clara, CA
Source: Artist

Exhibit 3.80: "Against the Day" Richard Deutsch
Location: Farr Park, Chevy Chase Center - Chevy Chase, MD
Source: Terrence McCarthy
Commissioned by: Chevy Chase Land Company, Washington DC

Exhibit 3.81: "Veterans Memorial" Cliff Garten
Location: Walnut Creek, CA
Source: Rik Sferra Copyright: Cliff Garten Studio

Signature Civic Center Art

Location

Downtown's Signature Art Feature is to be located on the proposed Civic Center site, at the corner of Capitol Avenue and State Street.

Intent

The Civic Center Art Feature is to create a significant statement that becomes a landmark for the Civic Center, the Downtown District and perhaps the City of Fremont. It is desired to become a destination feature and focal point for Downtown. Its creative design should encourage interaction with the public. The art should consider the design and function of the public park and plaza which it is located within. It should be civic-scaled and create a presence as seen from the adjacent streets and buildings. The art should be accessible to the public at all times and be illuminated in the evening hours.

Exhibit 3.82: "The Crown Fountain" Jaume Plensa
Location: Millennium Park - Chicago, IL
Source: Matthew Bernstine

Exhibit 3.83: "Transformed Flower" Phillip K. Smith
Location: Kansas City, MO
Source: Artist

Temporary Civic Art

Location

Temporary art exhibitions, installations and/or performances should be promoted within or outside proposed City Hall and Performing Arts Center within Civic Center at the corner of Capitol Avenue and State Street.

Intent

Civic Center may offer opportunities for rotating art exhibitions, short-term visual art installations and a variety of short-run performances including performance art, music, dance and literary readings. These opportunities will enable a public venue for the local arts community as well as for artists living outside Fremont. Temporary art should complement the nature and function of the Civic Center. The art will attract visitors that will support local businesses and activate the area. It should be appropriate for a wide-ranging audience and compatible with other functions of City Hall, the Performing Arts Center and the Civic Center Park or Plaza.

Process

Temporary art may be initiated by community members, reviewed and recommended by the Art Review Board and permitted by City staff. The Art Review Board may also initiate temporary projects that are permitted by City staff.

Art Walk

Location

The Downtown Art Walk is to be located along the sidewalks of the entire length of Capitol Avenue, through the proposed Civic Center site and along the sidewalks of the east end of New Middle Road, ending at Paseo Padre Parkway.

Intent

The Downtown Art Walk is intended to create an unexpected and lively design element that lends interest to the pedestrian environment while traversing Downtown. Integrated into the sidewalk pavement, or located at intervals along the sidewalk, the art should have an overall theme or story yet the individual pieces may be unique and/or transform along the path. Artwork within the sidewalk pavement should be walkable and flush within the concrete paving. The scale of Art Walk elements should be oriented toward pedestrians. Consideration should be made for illuminating the work at night. This art feature will likely be installed over intermittent time periods and locations, as the new sidewalks are installed, so the design should allow flexibility for its installation.

Exhibit 3.84: "Drawn to Light" Seyed Alavi
Location: Fullerton Art Museum - San Bernardino, CA
Source: Artist

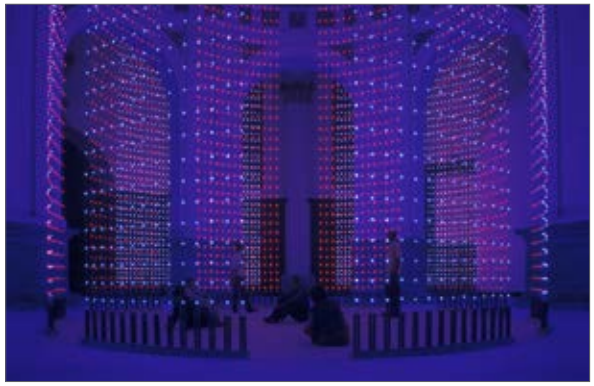


Exhibit 3.85: "FADE I" Erwin Redl
Location: Lille, France
Source: Artist

Exhibit 3.86: "Obsessions Make My Life Worse and My Work Better" Stephan Sagmeister
Location: Waagdragerhof Square - Amsterdam
Source: Jens Rehr

Exhibit 3.87: "Streams of Time" Nancy Mooslin
Location: Mathilda Place - Sunnyvale, CA
Source: Chandra Cerrito

Exhibit 3.88: "The Real World" Tom Otterness
Location: Battery Park - New York, NY
Source: Chandra Cerrito

Private Art Features

Location

Private Art installations will likely occur over time as development occurs. Depending upon the size of the development, the private owner could:

1. Contribute money to the Downtown Art Fund, and/or
2. Provide artwork on-site. As such, there are many variables to impact the extent, location and overall impact of the private art on the District.

It is anticipated that in time, there will be a fair amount of larger site developments, which will provide on-site artwork adding visual interest points throughout Downtown.

Intent

Private Art is intended to reinforce the pedestrian-friendly and destination-oriented environment encouraged by the Plan. Consideration should be made to orient the artwork adjacent to, and in view of, the public streets and sidewalks. If the property is sited along the Downtown Art Walk, the installation is encouraged to front along that street frontage and to respond to the design of the adjacent public art. Private art is to be permanently installed, of a scale that is in proportion to the site, illuminated in the evening hours, and visible to the general public, while the public's direct access to the artwork may be more limited per the owner's discretion.

Exhibit 3.89: "Hulls" Richard Deutsch
Location: Mission Bay - San Francisco, CA
Source: Terrence McCarthy
Commissioned by: Loewe Enterprises Real Estate Group, San Francisco, CA

Exhibit 3.90: "Shadowboxing" Christopher Janney, PhenomenArts, Inc.
Location: South Regional Library, Broward Community College - Ft. Lauderdale, FL
Source: PhenomenArts, Inc.

Exhibit 3.91: "Wind Veil " Ned Kahn
Location: Gateway Village - Charlotte, NC
Source: Mitchell Kearny

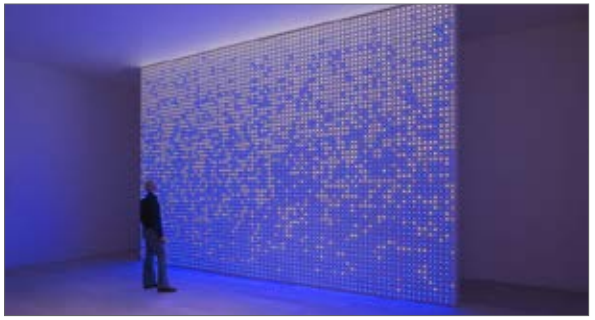


Exhibit 3.92: "MATRIX XVII" Erwin Redl
Location: Centennial Towers - South San Francisco, CA
Source: Artist

4.0 PRIVATE DEVELOPMENT

Redevelopment of the Downtown District is the essence of this Community Plan; to encourage investment based on the planned transformation of the area into a cohesive, high-quality downtown destination, attracting citizens and visitors alike to the City Center.

The Downtown Development Controls and Design Guidelines described in this chapter will direct new construction towards a more urban pattern of development and create a vibrant pedestrian experience. The Plan allows great flexibility to accommodate owner objectives and changing market conditions while providing a framework that ensures an improved public realm and sense of place.

The Downtown Development Controls are set forth in the Fremont Municipal Code, as they relate to:

- Development density
- Permitted land uses
- Building setbacks and massing, and
- Circulation and parking requirements.

The Downtown Design Guidelines form the basis for all site and building design elements that contribute to the overall character and quality of the Downtown District, including:

- Building design features
- Landscaping and site furnishings, and
- Building signage.

Together, these controls will provide a means to a consistent and cohesive development. In the event of any inconsistency between the Municipal Code and the plan, the Municipal Code shall prevail.

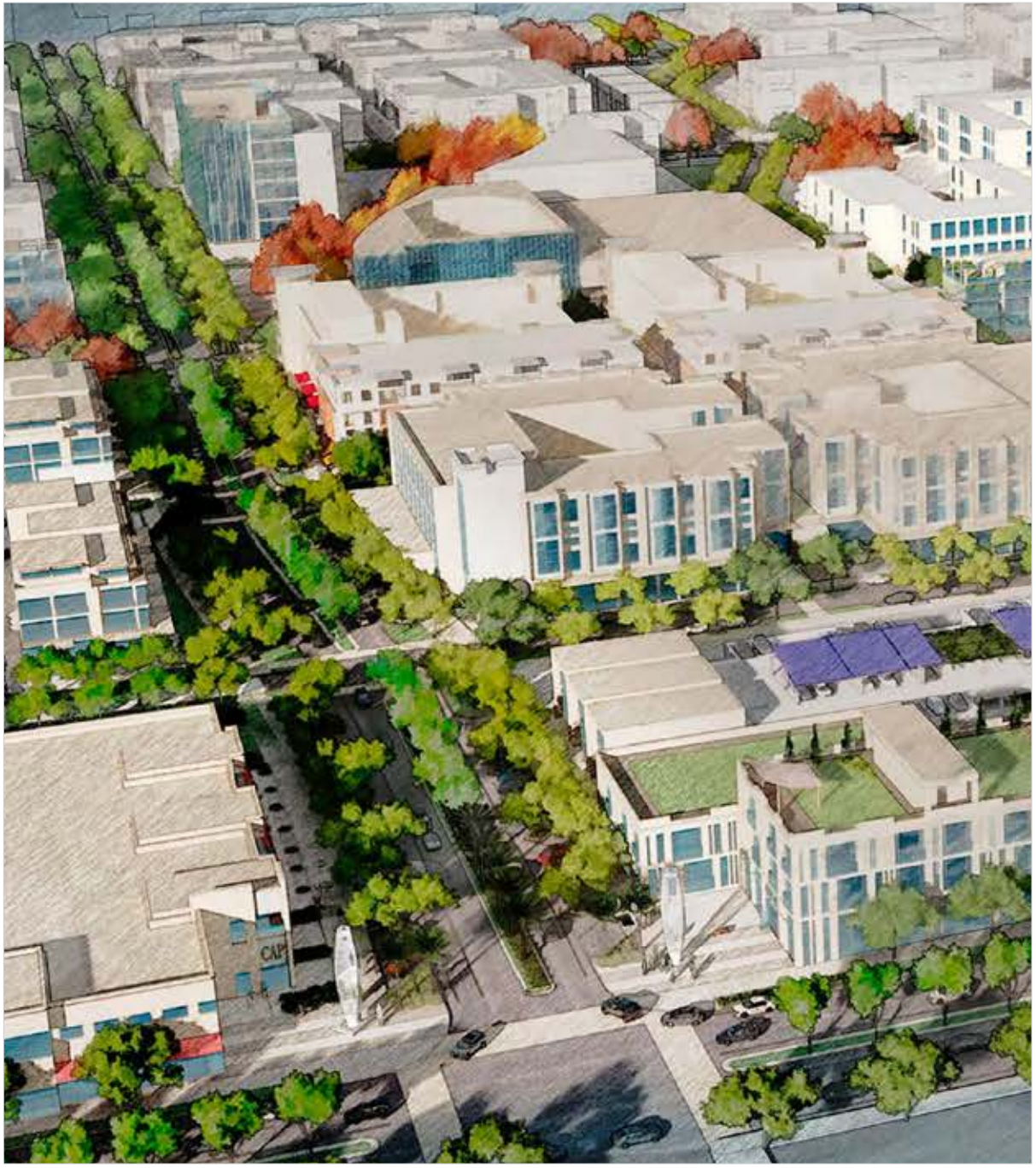


Exhibit 4.1: Aerial View of Downtown District

4.1 SUSTAINABLE DESIGN

One of the overarching goals for Downtown is to create a benchmark in sustainable development for the City of Fremont. As part of this effort, the Community Plan incorporates design elements aimed to achieve the new 2010 California Building Standards Code in Title 24 (Title 24) as well as pre-requisite requirements to meet the US Green Building Council's standards.

California Building Standards Code - Title 24

California's Title 24 was established in 1978 to improve energy efficiency in residential and nonresidential buildings. The standards are continuously updated. The current version sets aggressive green building standards to reduce energy consumption and greenhouse gas emissions. Further information can be obtained for residential and non-residential buildings from the California Energy Commission at www.energy.ca.gov/title24.

2010 California Green Building Standards

Effective since January 1, 2011, the 2010 California Green Building Standards Code, or CALGreen, is Part 11 of Title 24 of the California Building Standards Code. CALGreen applies to the planning, design, operation, construction, use and occupancy of every newly constructed building or structure in the state. It does not apply to additions, alterations or building repairs.

This code is established to address the following areas of building construction:

- Planning and design
- Energy efficiency
- Water efficiency and conservation
- Material conservation and resource efficiency
- Environmental quality.

CALGreen establishes mandatory minimum green building standards and includes voluntary tiers of more stringent performance levels. The City of Fremont has adopted the more stringent CALGreen's 'Tier 1 for Residential Buildings'. It is also considering adopting 'Tier 1 for Commercial Buildings.'

New residential buildings subject to the mandatory provisions of CALGreen include motels, hotels, apartments, one and two-family dwellings and several others listed in Section 104 of the Code. All four-story and taller residential buildings are not covered by CALGreen.

New non-residential buildings subject to the mandatory provisions of the CALGreen Code include state-owned buildings, privately-owned buildings used for retail, office and medical services, and others listed in Section 103 of the Code.

Projects should incorporate the standards at the outset of the planning and design phases in order to achieve the sustainable goals in the most effective, integrated, and least costly manner. The Owner and project development team should become familiar with the requirements early in design as some standards, such as bicycle parking and amenities, will have specific space planning impacts.

An online version of the CALGreen Code is available through the California Building Standards Commission website at www.bsc.ca.gov

For the site and building design, solar and wind orientation should be considered first to optimize energy savings by reducing summer heat-gain and capturing cooling breezes. Further, the site design must consider recent more stringent State regulations on stormwater management. Maximizing rear yard landscape, pervious pavement, and even green roofs should be considered to reduce/eliminate stormwater run-off. Refer to Section 4.6 for Landscape Design Guidelines.

Exhibit 4.2: Green Roof Example

4.2 DEVELOPMENT CHARACTER

The character of Downtown will evolve over time as redevelopment occurs. The most significant change, both physically and functionally, will be the elimination of the existing suburban development pattern of single-story buildings setback from the street and surrounded with surface parking. The new development pattern established in this Community Plan will require multi-story buildings located at the street line with reduced parking provided behind or within the building.

The building types to be expected in the redevelopment of Downtown will range from low-to mid-rise construction. It will be important to understand that the Plan encourages a variety of building development types to create a diverse and vibrant community. For residential, a variety of housing types is preferred to accommodate a wide range of generations and households. For commercial developments, a variety of building types, from single-use to campus environments will encourage a range of businesses and employment opportunities. The intent is to encourage a mix of uses with adequate retail, service and dining establishments to create a neighborhood well serviced within the walkable area of Downtown.

Finally, with the higher densities, new buildings must design integrated structured parking to minimize visual and access impacts on the street and public areas.

Residential Development Character

Low-Rise Residential

Low-rise residential buildings, such as townhouses, can be provided as long as the overall property can achieve the minimum densities as required in the Development Controls. These buildings may serve as good in-fill buildings on parcels in transition or as 'laminations' to parking structure podiums. This building type can include 'tuck-under' parking in the rear yard.

Live-Work Buildings

Live/work building types involve residential and commercial spaces owned and used by a single owner. The inclusion of such building types and units within the Downtown District is beneficial in many ways. Commuting is eliminated for the owner, thus reducing daily traffic activity and perhaps increasing pedestrian activity. The owners are also invested in Downtown both as a resident and a business owner, leading one to be more concerned with the maintenance and upkeep of their neighborhood.

Mid-Rise Residential

Multi-unit residences should provide a range of unit sizes to accommodate a range of households, from studio/one-bedrooms for single career professionals to 3-bedroom units to accommodate families. These larger buildings should provide on-site amenities to encourage social interactions and reduce vehicle trips.

Exhibit 4.3: Low-Rise Residential Development Example

Exhibit 4.4: Live-Work Development Example

Exhibit 4.5: Mid-Rise Residential Development Example

Commercial Development Character

Low-Rise Commercial

Low-rise commercial buildings provide a more pedestrian-scale building. They are encouraged to be used as infill and/or interim development within the District.

Corporate or Institutional Campus

As the San Francisco Bay Area market evolves, there has been increased demand for corporate or institutional campuses within a more urban setting, where workers can walk to dining, services and shopping during daytime hours. Downtown is well positioned to attract this kind of development, particularly near Paseo Padre Parkway and Walnut Avenue where existing medical facilities, larger lot sizes, and proximity to the BART station create a unique development opportunity.

Mid-Rise Commercial

Mid-rise commercial office buildings provide a necessary supply of office workers, to patronize the retail stores and restaurants during daytime, weekday hours. This complements the residential users whose shopping patterns during nights and weekends, ensures a healthy environment for the District's retail and service businesses.

Hotel and conferencing facilities are also encouraged in Downtown as they complement the mixed-use community and 24/7 environment envisioned.

Exhibit 4.6: Low-Rise Commercial Development Example

Exhibit 4.8: 'Campus' Commercial Development Example

Exhibit 4.7: Mid-Rise Commercial Development Example

Exhibit 4.9: Mid-Rise Commercial Development Example

4.3 DEVELOPMENT CONTROLS

Intent

The Downtown Development Controls guide future construction by regulating density, land use, building massing, setbacks and parking. The intent is to guide each new development collectively toward creating an urban and amenable public realm that utilizes the impact a building's type and scale, and circulation and building design can make on the District. These controls are set forth in the City of Fremont's zoning code. The controls help create an orderly and consistent development environment.

The general development controls have overall applicable standards for density, open space and parking, while more specific regulations regarding land use and building massing create four distinct Downtown zones including:

- **Capitol Avenue,** the 'Main Street' and downtown center,
- **Edge Zone,** with larger-scaled redevelopment potential,
- **Civic Center Zone,** the City Center and civic heart of Fremont, and the
- **Mid-District Zone,** the remaining areas that knit the District together.

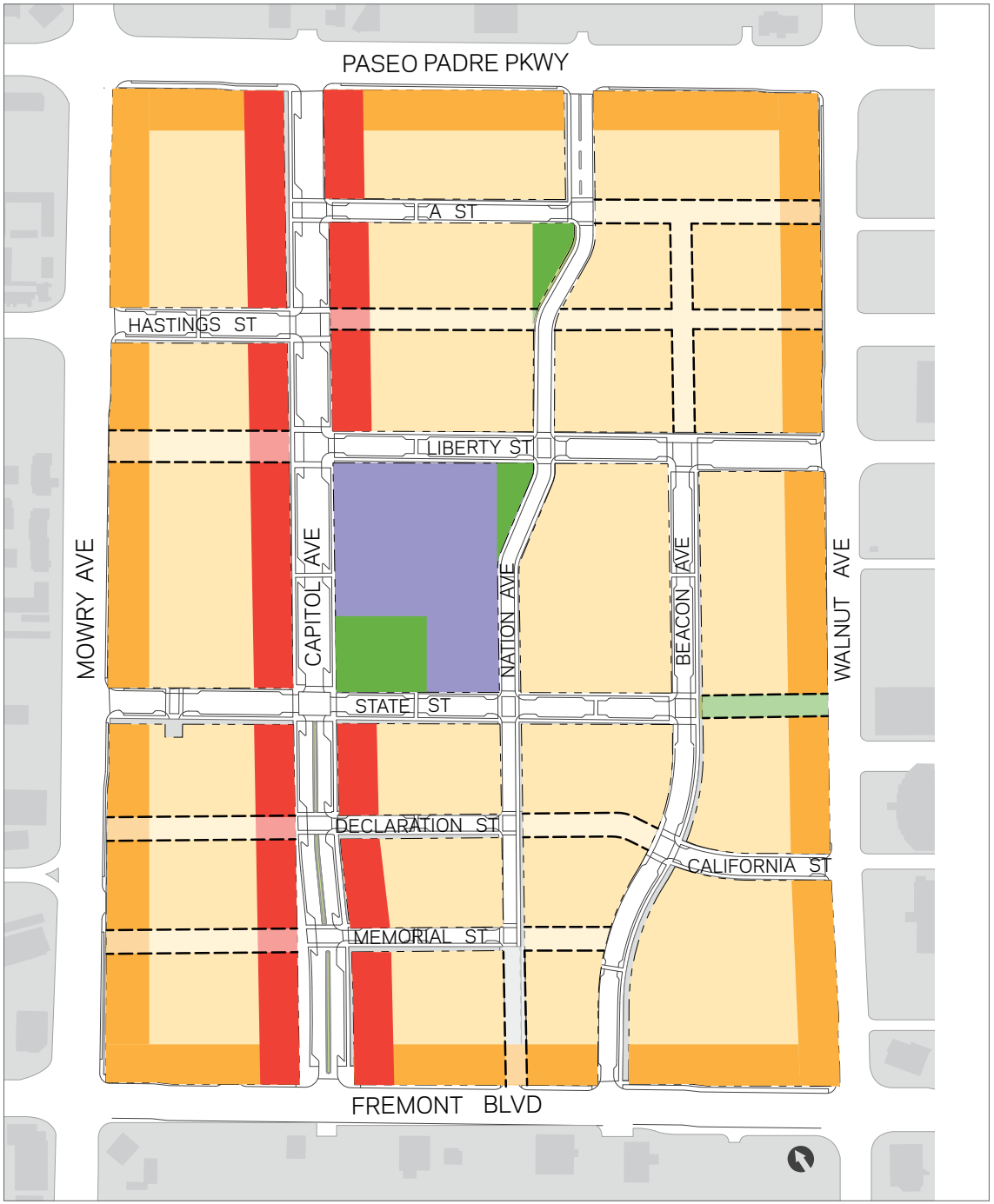


Exhibit 4.10: Development Control Zones

General Controls

The following is a description of the general development controls which apply to all development within Downtown Fremont. Further controls specific for each development zone follow this section. The controls will be implemented through the zoning code. In the event of any inconsistency between the zoning code and this plan, the provisions of the Zoning Code will apply.

Density Requirements

The following density controls raise the minimum floor-area-ratio (FAR) throughout the District, thereby creating expanded residential, commercial and retail opportunities.

- For Residential: 50 dwelling units/acre minimum
- For All Other Uses: 0.80 floor-area-ratio (FAR) minimum.

Building Height Requirements

Density will also be increased with multi-story buildings, creating a better and more active streetscape environment. For the District, the minimum building height standard is:

- Minimum 22′ high / 2-4 story street wall from sidewalk to top of parapet
- Ground Floor Retail or Active Use: 16′ minimum height from ground floor to second floor.

Parking + Circulation Requirements

Parking patterns and ratios for the Downtown District will greatly evolve as redevelopment occurs, with the key goals to:

- Eliminate on-site surface parking visible from street frontages.
- Reduce on-site parking requirements.
- Increase on-site shared parking.
- Reduce and coordinate curb cuts to retain street trees, street parking, and reduce pedestrian/sidewalk impacts.

The table below, Exhibit 4.11, states the required parking requirements for all developments within Downtown. Further parking and circulation requirements are noted in the Zone Development Controls.

Additional parking requirements include:

- New on-site parking lots along street frontages is prohibited.
- Parking lots, if necessary, shall be placed on the side or rear of buildings and screened from street view.
- Multi-level structured parking is allowed outside of the Capitol Avenue zone if it is appropriately screened or wrapped with habitable space. The intent is to minimize visual impact from parking structures. City staff will work with individual projects to ensure that the intent is achieved on a case-by-case basis.
- Situate curb cuts 50′ or more from street intersection, 24′ wide maximum curb cut, 12′ minimum distance between curb cuts.
- Refer to the following Section 4.4 Architectural Design Guidelines for further on-site parking facilities guidelines.
- Refer to Chapter 2 District Framework, Section 2.3 Parking Plan for further street parking policies and standards.

Easements

Due to existing large block sizes in Downtown, there are numerous existing easements on the private development parcels intended for utilities, fire, emergency access, and vehicular access. While the Street + Block Plan proposes converting several of these easements into public rights-of-way, many will remain in place. Additional new easements are also planned that must be incorporated into the site development. Refer to Exhibit 4.10. These new easements, referred to here as 'Mid-block Connections', will enhance the network of proposed multi-modal access within the District. Many of these easements will be required to look and function as a public street to disperse traffic and reduce traffic delays. The connections also provide visitors with options that facilitate walking and biking between destinations in the District. Refer to Section 4.4 Architectural Design Guidelines.

Open Space Requirements

Private development must include open space that provides an attractive environment for the occupants of the property. Designated parks and/or passive-use open space shall be at least 1/16 acre (2,722 sf) with a recommended 1/2 acre (21,780 sf) minimum size.

Parking Requirements for Downtown District			
Type of Use	Minimum (non-exclusive use)	Minimum (Exclusive Use)	Maximum
Assembly Uses	1:5 seats	1:3 seats	1:4 seats
Commercial Uses (non-medical)	1:400 gsf	1:300 gsf	1:200 gsf
Medical Uses	1:300 gsf	1:250 gsf	1:200 gsf
Residential Uses	0.75 space/dwelling unit	1 space/dwelling unit	2 spaces/unit

Exhibit 4.11: Downtown District Parking Requirements

Encroachments: 3′ projections, 12′ maximum length, 6′ min. separation in building setbacks.

Land Use

In the redevelopment of the District, land uses will evolve from the current commercial-dominated environment to a more vital mix of uses, balancing the commercial and retail establishments with more residential development and public amenities to create a 24/7 downtown environment. The designated land uses for the District are consistent with the Fremont General Plan.

The specified land uses will guide future redevelopment to reveal distinct uses and character in the four Development Control Zones (Exhibit 4.10). Every listed land use was considered as to how it will support each particular zone's intended character including its functional requirements and/or impact on: parcel size; building size and type; traffic, parking, service and access; usage hours; users, activity and noise generation; as well as complementary uses.

Downtown's land uses for future development are set forth in the Zoning Code and generally depicted on Exhibit 4.12. There is considerable flexibility on uses throughout the District but minimum required locations for retail frontage, residential and office uses are included to ensure a true mixed-use district.

Exhibit 4.12: Conceptual Downtown District Land Use Map

Capitol Avenue Zone

Intent

The **Capitol Avenue Zone** is intended to be the area of highest activity and commercial intensity within the District. Capitol Avenue is the central spine of the district, connecting existing successful retail with existing transit service. This important linkage along the avenue creates the best opportunity for retail success and mixed-use density.

Development of the Capitol Avenue Corridor is a priority initiative. In concert with the streetscape improvements,including the new street extension to Fremont Boulevard, the Capitol Avenue redevelopment will create a significant new identity and community focal point necessary to anchor the District.

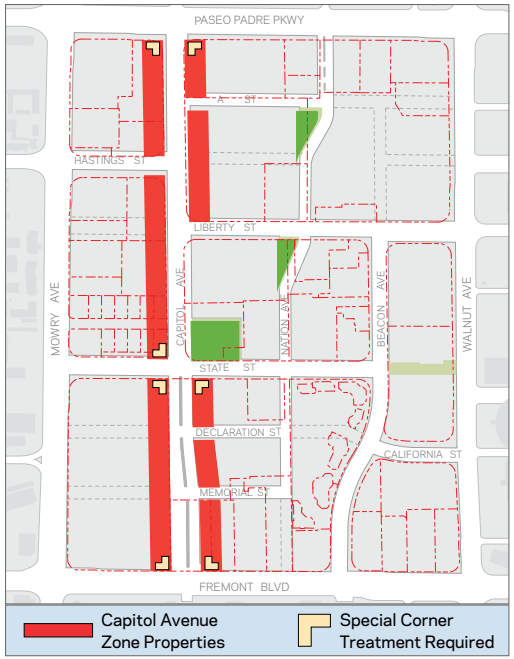


Exhibit 4.13: Capitol Avenue Zone Key Map

Design Standards

The design standards for the Capitol Avenue Zone should reflect the highest level of development within the District. Intended to be the "Main Street" of the district with retail, mixed-use and civic uses, all design choices are encouraged to reflect high-intensity and a high-quality pedestrian environment. Beyond the site design standards, the following architectural standards are required to accomplish the vision.

The development controls are intended to create a consistent streetscape environment along Capitol Avenue with:

- A continuous lively retail and active use streetfront at sidewalk level.
- Opportunities for sidewalk cafes particularly at corner building setbacks.
- A consistent street-wall at the street line for a minimum of 2 stories / 22' high, except for 1-story / 22' high facade for in-fill buildings on the west side of Capitol Ave. between Fremont Blvd. and State St.
- An emphasis on the pedestrian with no on-site vehicle access from Capitol Avenue.

Site and Building Organization

Parking and Service: No visual access from public streets to parked vehicles is allowed. No curb cuts are allowed on Capitol Avenue. As such, access to parking and service must be accommodated from the side street, or in the case of through-block parcels, from the rear street. Parking is allowed behind the building's ground level storefronts and active uses.

Ground Level Streetfront: Retail or active-

Exhibit 4.14: Low-Rise Commercial Building Example

Exhibit 4.15: Mid-Rise Mixed-Use Building Example

Exhibit 4.16: Gateway/Corner Building Example

uses shall be continuous along the entire Capitol Avenue building frontage. The retail storefronts are encouraged to continue on the side street for the first 50′ from Capitol Avenue. The minimum height of the first floor shall be 16′ from ground floor to second floor to allow for flexibility in tenant uses. Ground floor retail/active-use space shall be a 50′ minimum depth. However, a 15′ minimum depth for retail space is allowed in limited areas, for no more than a 15′ length, to accommodate building elevator/stair towers, or entry lobbies. The main building lobby entrance shall be on Capitol Avenue.

Building Façade: The Capitol Avenue street façade on the build-to-line shall not have any balcony projections. Setbacks are encouraged to allow for outdoor cafes, landscape and seating areas. Within these setback areas balconies are allowed above the first floor. A minimum of 50% of the perimeter of the balcony must be engaged with the building façade.

Capitol Avenue Development Controls

Building Setbacks:

Capitol Avenue Building Setback:

- No building setbacks are allowed for 75% of the length of the Capitol Avenue + side street frontages. The setback depth is limited to a maximum of 1/2 the setback length along Capitol Avenue frontage.
- 10′ setback allowed 85′ above grade.

Side Street Setback: 0′ - 10′ required.

Side + Rear Yard Setback: No requirement.

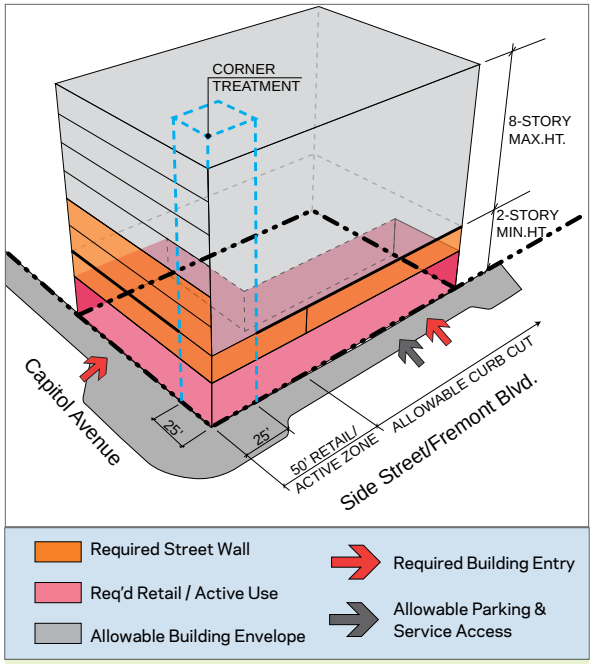


Exhibit 4.17: Capitol Avenue Zone - Bulk Controls

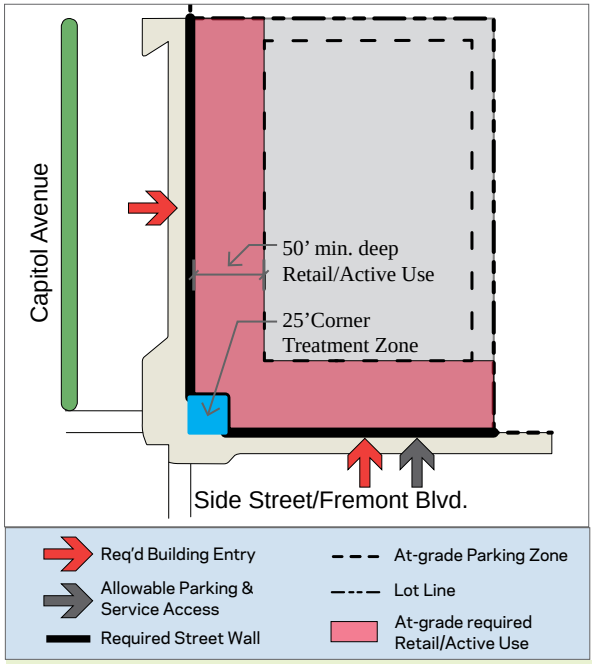


Exhibit 4.18: Capitol Avenue Zone - Site Controls

Special Building Corner Treatment:

- Allowable additional 1-story high rooftop building feature within 25′ from corner. See Design Guidelines + Exhibit 4.14.
- Fremont Blvd. & Capitol Ave. Gateway: 15′ - 25′ building setback zone required. Align setback with conforming building setback on opposite side of Capitol Ave. to mirror building massing, if applicable.
- State St. & Paseo Padre Pkwy. Gateways: 10′ - 25′ building facade treatment zone.

Building Height:

- Capitol Avenue: 2-story /22′ high minimum to Top-of-Parapet, 8-story maximum.
- West side of Capitol Ave. between Fremont and State Street: 8-story maximum; 1-story/22′ high minimum for interim in-fill buildings only.
- Minimum Ground Floor Height: 16′ high from first floor to second floor.

Parking + Circulation:

Below-Grade Parking: No setback required.

At-Grade Parking: For Capitol Ave. frontage: 50′ minimum required setback located behind ground floor retail/active uses. For other lot lines: 10′ minimum screened landscaped setback required for surface parking.

Above-Grade Parking: 30′ minimum required setback from Capitol Avenue.

Parking and Service Access: Curb cuts or drive lanes are prohibited along Capitol Avenue. Curb cuts allowed on side streets.

Edge Zone

Intent

The **Edge Zone** occurs along the perimeter of the Downtown District and fronts along the arterial roadways of: Fremont Boulevard, Mowry Avenue,Walnut Avenue, and Paseo Padre Parkway. The Edge Zone has:

- Good access to public transit and routes to nearby highways,
- Larger parcel sizes, and
- Proximity to the major medical facilities and retail centers.

Being located on heavily trafficked roadways, this development zone can capture more intense and larger developments. Located at the perimeter, its high visibility developments will set the tone for the District.

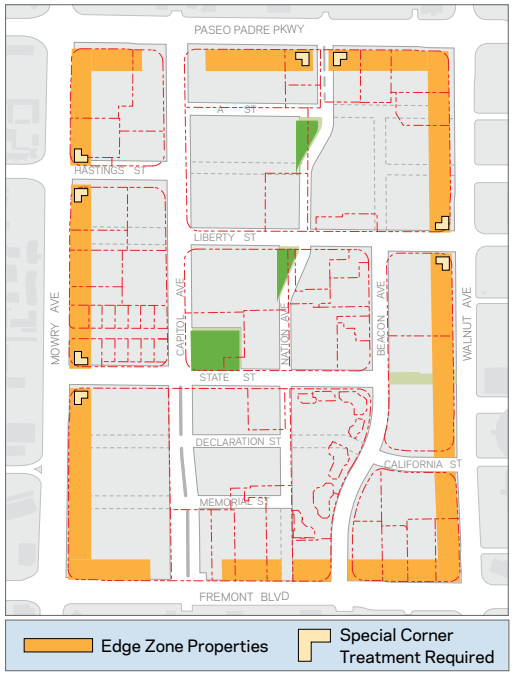


Exhibit 4.19: Edge Zone Key Map

Design Standards

The design standards for the Edge Zone reflects its larger scale and more commercial character. New developments should set the standard of a high-quality urban district and provide gateway building features at the key corner intersections leading into the Downtown.

All design choices are encouraged to reflect the high-traffic volume and broad arterial street environment. The following standards are required to accomplish the vision of the Edge Zone.

The Edge Zone development controls are intended to create a consistent streetscape environment bounding the District with:

- A continuous landscaped setback with a complete pedestrian environment from sidewalk to on-site paths and building entrances.
- Flexibility for larger multi-building complexes to mediate between an urban and campus environment.

Site and Building Organization

Buildings are to be setback from the street line within a range of 15′ - 45′. This front yard is to be landscaped for a minimum 12′ wide planted strip with direct pedestrian access from the street to the lobby. A vehicular roadway may be provided for visitor drop-off and limited temporary parking.

In the case of a larger parcel developed as a campus with multiple buildings, the building lobbies must include a primary entrance

Exhibit 4.20: Ground-Floor Retail Development Example

Exhibit 4.21: Housing over Retail Development Example

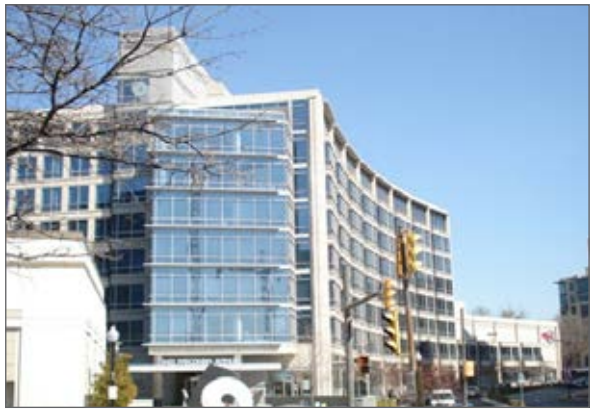


Exhibit 4.22: Commercial Office Development Example

facing the street. For parcels with mid-block connections (see 4.4 Architectural Design Guidelines) on-site circulation is required for pedestrian and bicycles through the site.

Signage:

- Monument Signage is allowable in the landscaped setback along the fronting Arterial Street.

Edge Zone Development Controls

Building Setbacks:

Front Yard Setback: 15′ - 45′, landscaped; except 0-15′ along Paseo Padre Parkway.

- Building setback depth maximum 1/2 of setback length along street frontage.
- 10′ setback allowed above 85′.

Side Street Setback: 0′ - 15′ required.

Side + Rear Yard Setback: No requirement.

Building Frontage:

- At streetwalls, no additional setbacks allowed for 75% of the length of the street frontage; Setback maximum depth 1/2 of setback length along street frontage.
- Active uses are required at ground level for a depth of 30′ minimum along required street wall frontage.
- On street frontages, balconies are permitted in the setback area above the first floor and shall be have a perimeter engaged with the building façade a minimum of 50%. See General Controls, Encroachments.

Special Building Corner Treatment:

At the intersection of the district gateway streets of Hastings St., Liberty St., New Middle Rd., and State St. the following corner building treatments apply:

- Allowable additional 1-story high rooftop building feature within 25′ from building corner.
- 10′ - 25′ wide facade treatment zone at corner is required. See Design Guidelines and Exhibit 4.20.

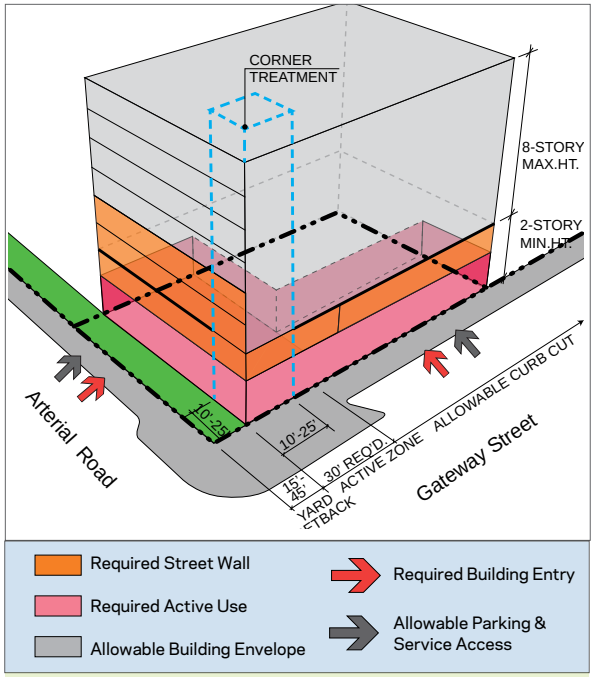


Exhibit 4.23: Edge Zone - Bulk Controls

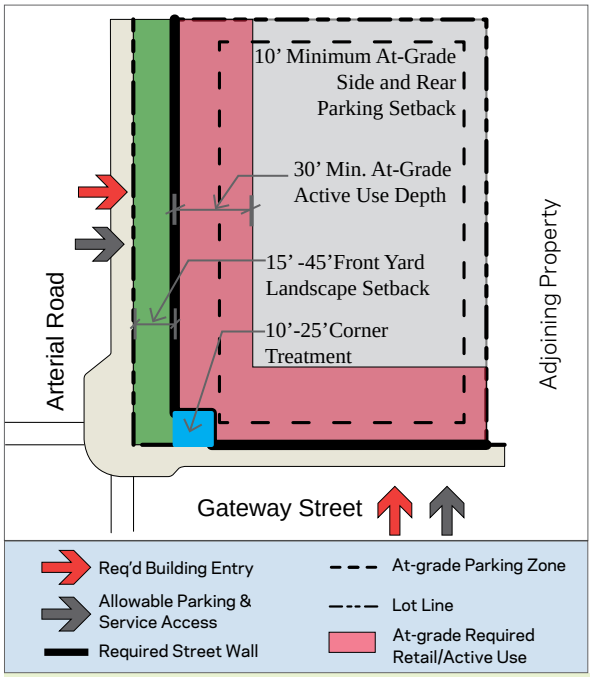


Exhibit 4.24: Edge Zone - Site Controls

Building Height:

- Minimum Building Height: 2-stories, 22′ high minimum streetwall.
- Maximum Building Height: 8-stories.
- Minimum Ground Floor Height: 16′ from ground floor to second floor.

Parking + Circulation:

- Below-Grade Parking: No setback required.

At-Grade Parking:

- Front Setback: 15′ minimum from lot line
- Side + Rear Setback: 10′ minimum

Site Circulation: Parking access lanes/curb cuts or drop-off lanes are permitted along the street frontage. A maximum of two curb cuts allowed per each street frontage.

Above-Grade Parking:

- Street frontages: 30′ minimum from streetwall
- Shared Lot Lines: No setback required.
- Structured Parking may be freestanding structures, if sufficiently designed to be complementary to the primary building. Parking structure is not permitted to be located along Arterial Road.

Mid-District Zone

Intent

The Mid-District Zone encompasses all properties not fronting on Capitol Avenue, or the four bounding arterial streets of Mowry Avenue, Paseo Padre Parkway, Walnut Avenue and Fremont Boulevard. The Mid-District zone includes the interior parcels not located on a city through-street, making the often smaller lots less likely to be developed for high-traffic commercial uses. As such, these parcels are seen as providing a more pedestrian-scale, knitting the more commercial streets together and bringing character to the District. These streets do provide important circulation access for parking and service vehicles to the development parcels, since access is restricted on Capitol Avenue.

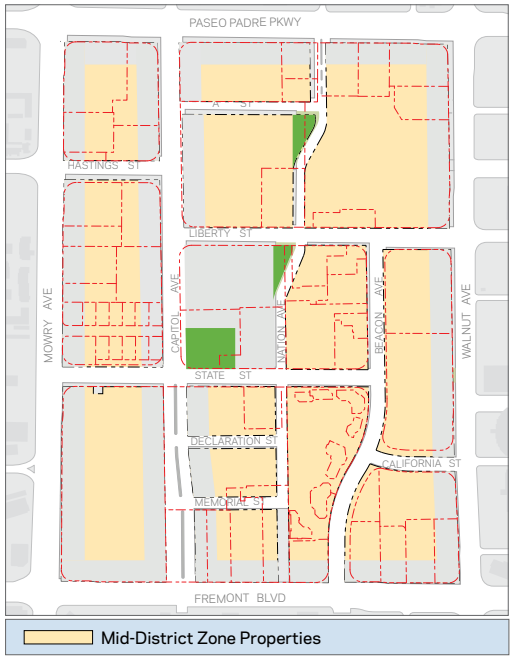


Exhibit 4.25: Mid-District Zone Key Map

Design Standards

The design standards for the Mid-District Zone reflects a lower scale and quieter neighborhood character. As new developments occur, it is likely that lots in this zone will be part of larger consolidated parcels fronting the larger through streets. As such, the Mid-District Zone will function more as side streets and provide secondary entrances and service access.

The Mid-District Zone development controls are intended to be flexible while still creating a consistent pedestrian streetscape environment with:

- An allowable landscaped setback with a complete and continuous pedestrian environment from sidewalk to on-site paths and building entrances.
- Flexibility in massing to mediate between the more dense mixed-use developments on Capitol Avenue and the bounding arterial streets.
- Projects must have a minimum of one active and functional building entrance per 200' of street frontage.
- No more than 20% of the street frontage(s) within the project shall be faced directly by garage and service bay openings.

Exhibit 4.26: Mixed use - Housing over Retail Example

Exhibit 4.27: Mid-Rise Housing with ground level units & parking

Exhibit 4.28: Commercial Office Development Example

Mid-District Zone Development Controls

Building Height:

- Minimum Building Height: 2-stories, or 22′ high street-wall
- Maximum Building Height: 8-stories maximum
- Minimum Ground Floor Height: 16′ from ground floor to second floor.

Building Setbacks:

Front Yard Setback: No requirement.

- Building setback depth maximum 1/2 of setback length along street frontage.
- 10′ setback allowed above 85′.

Side Street Setback: 0′ - 10′ required.

Side + Rear Yard Setback: No requirement.

Building Frontage:

- No setback allowed for 50% of the length of the street frontage; Setback maximum depth 1/2 of setback length along street frontage.
- 10′ setback allowed above 85′.
- Active uses are required at ground level for a depth of 30′ minimum along required street wall frontage.
- On street frontages, balconies are permitted in the setback area above the first floor and shall be have a perimeter engaged with the building façade a minimum of 50%. See General Controls, Encroachments.
- Structured parking access is accepted as part of the building frontage requirement.

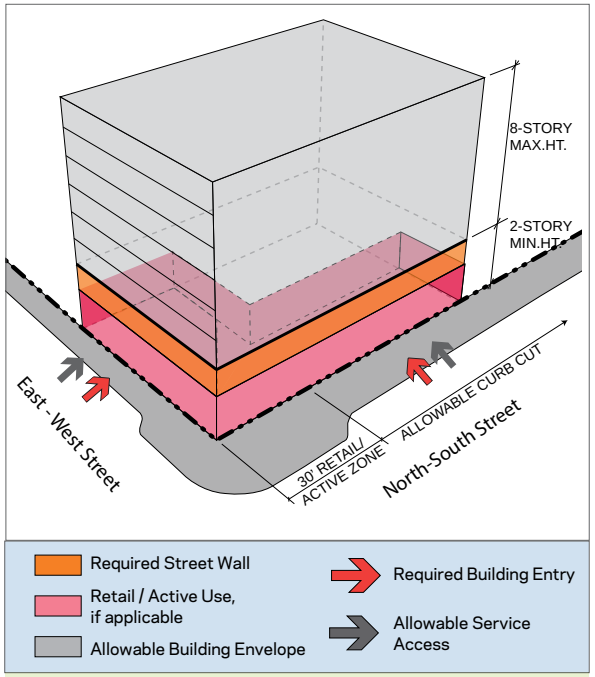


Exhibit 4.29: Mid-District Zone - Bulk Controls

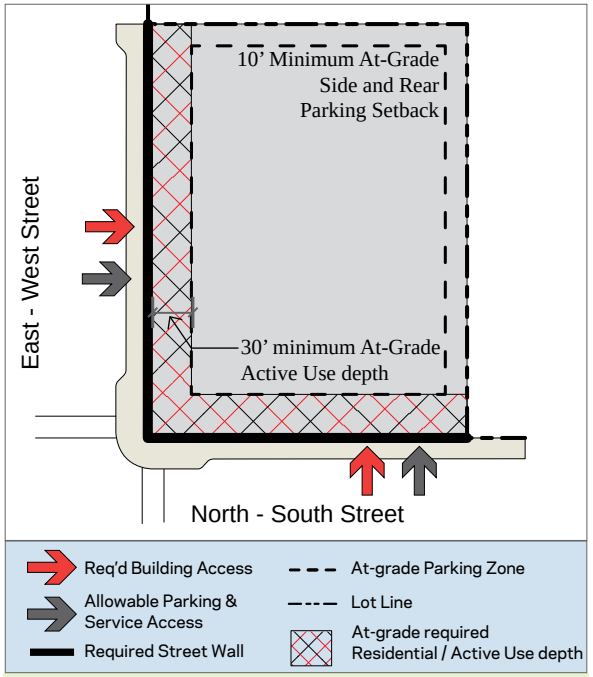


Exhibit 4.30: Mid-District Zone - Site Controls

Parking + Circulation:

Below-Grade Parking: No setback required.

At-Grade Parking: 5′ minimum required landscaped setback located along street frontages where a building street wall is not required. 10′ minimum landscaped setback on shared lot line.

Above-Grade Parking: No setback for enclosed structured parking.

Service + Parking Access: Curb cuts are allowed a distance 50′ or more from corner lot line/corner intersection. Situate curb cuts to coordinate and retain maximum street trees and street parking stalls.

Civic Center Zone

Intent

The **Civic Center Zone** is located on a single City block bounded by: Capitol Avenue, State Street, Liberty Street and New Middle Road.

Located at the center of the District, the Civic Center will be the heart of the Fremont community. It is envisioned that the daily City Center activities will be supplemented with on-going cultural and art events to create a lively and distinctive core to the District.

As such, this civic development will require special consideration by the City for its programming, design and coordinated implementation. This Community Plan sees the Civic Center as an early priority project in transforming both Capitol Avenue and the entire District.

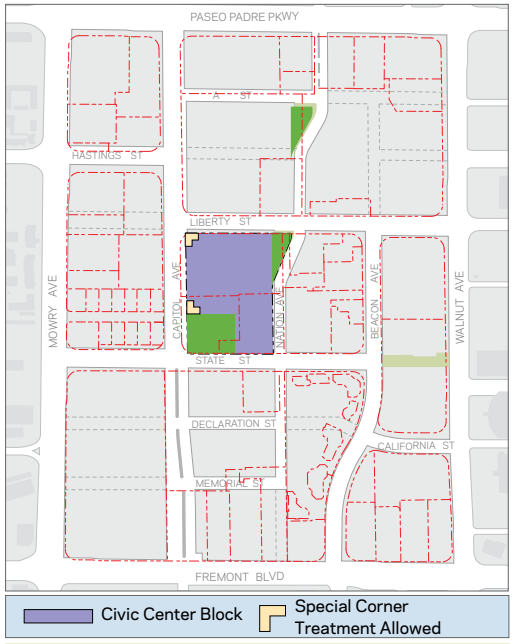


Exhibit 4.31: Civic Center Zone Key Map

Design Standards

The design standards for the Civic Center Zone reflect the more public character of this site. As such, the Civic Center Zone will function more as a campus with pedestrian access traversing the site and connecting public plaza, public parks and the District's art programs, permanent and temporary installations. This civic open space is intended to support public events and gatherings, so high visibility from the adjoining streets is required.

The Civic Center Zone development controls are intended to be a guide until further City programming and design analysis occurs. Core guidelines to create an open and pedestrian oriented environment include:

- Civic Center block should have a complete continuous pedestrian environment connecting from the sidewalks of all four bounding streets to on-site paths and building entrances.
- The main administration building shall be located at the corner of Capitol Avenue and Liberty Street and should be the tallest building of the Civic Center.
- On New Middle Road, an allowable landscaped setback continuous to the civic park at the corner of Liberty Street.
- New Middle Road is to provide the primary access point for service and public parking facilities.
- The Civic Plaza should be located at the corner of Capitol Avenue and State Street and cover at least 1/2 acre of land directly fronting the sidewalk.

Exhibit 4.32: City Hall Development Example

Exhibit 4.33: Office Development Example

Exhibit 4.34: Public Open Space Example

Civic Center Zone Development Controls

Building Height:

- Quadrant at Capitol Ave. and Liberty St: City Administration Building, 4-story minimum, 12-story maximum.
- Quadrant at Capitol Ave. & State St: Civic Park, 22' high maximum accessory structure only. Civic Art Work can exceed building height restrictions.
- Quadrant at State Street and New Middle Road: 4-stories minimum, 8-stories maximum for Potential Community Performing Arts Center site. Access from Civic Plaza and State Street is required.
- Minimum Ground Floor Height: 16' from first floor to second floor.

Building Setbacks:

Street-Wall: Required at lot line, except for allowable ground level 12-16' wide Arcade along Capitol Ave., Liberty and State Streets.

Building Frontage:

- No setback allowed for 75% of the length of the street frontage; Setback maximum depth 1/2 of setback length along street frontage.
- Structured parking access is accepted as part of the building frontage requirement along side street frontages only.

Special Building Corner Treatment:

- Allowable additional 1-story high rooftop building feature within 25' from corner. See Design Guidelines and Exhibit 4.32.
- 10' - 25' wide facade treatment at Capitol Avenue + Liberty Street corner is required.

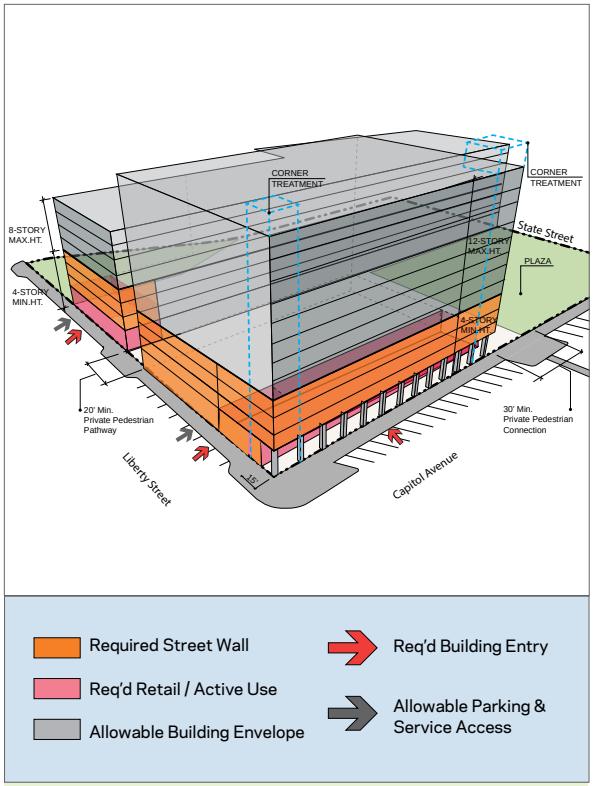


Exhibit 4.35: Civic Center Zone - Bulk Controls

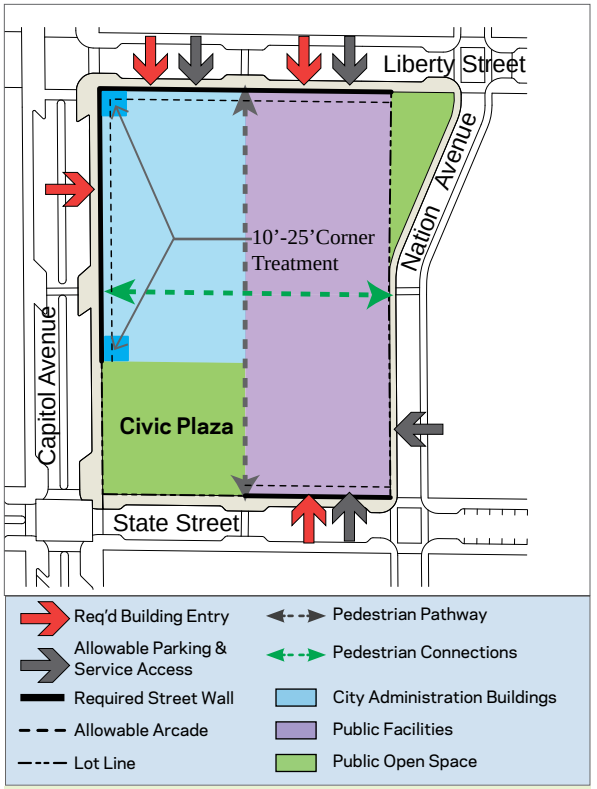


Exhibit 4.36: Civic Center Zone - Site Controls

Parking + Circulation:

Below-Grade Parking: No setback required.

At-Grade Parking: 5' minimum required landscaped setback located along New Middle Road. Parking is required to be enclosed in a structured facility. No at-grade parking allowed along Capitol Avenue or in Public Park.

Above-Grade Parking: No setback required for enclosed structured parking.

Service + Parking Access: Curb cuts or drive lanes are not permitted along Capitol Avenue. Curb cuts are allowed on side streets at a distance 50' or more from Capitol Avenue. Situate curb cuts to coordinate and retain maximum street trees and street parking stalls. See General Controls.

Pedestrian Circulation: This civic center block is intended to be a significant public open space with a variety of plazas, arcades and landscaped areas. Pedestrian circulation should be provided through out the site to connect entrances and cross streets, including a path generally from Capitol Avenue + State Street to Liberty Street + New Middle Road to provide a pedestrian route to BART station.

4.4 ARCHITECTURAL DESIGN GUIDELINES

Intent

The City of Fremont intends to create a modern and inviting environment that imparts an urban quality that does not currently exist in the City. To this end, these architectural design guidelines were created to assist the owner and developer by providing design parameters to ensure a consistent architectural design vocabulary and palette of materials within the District. The following guidelines are provided as a reference and are not intended to displace any of the previously described design controls. In the event of any inconsistencies between the following guidelines and either the Fremont Municipal Code or the design Controls in Section 4.3, the City will defer first to the Fremont Municipal Code and the control in Section 4. The guidelines provide a working framework while still allowing for diversity and flexibility in the individual design and construction of the structures. The architectural design guidelines are organized as follows:

Development Character:

- Building Types
- Mid-Block Connections

Building Facade Organization:

- Top Zone
- Body Zone
- Base Zone

Building Design Elements:

- Facade Elements
- Roofscape, Mechanical Equipment
- Materials + Colors
- Building Entrances
- Building Corners
- Canopies + Awnings
- Refuse Storage, Service and Loading
- Parking Facilities

Development Character

Building Types

As new development occurs over time, it is likely that the real estate market and economic environment will also change. As such, it is anticipated that new buildings in the District will also vary, with densities and mixed-use buildings increasing incrementally per the Community Plan. To provide some framework and flexibility to the District, the following requirements apply to all developments:

Minimum Ground Floor Heights

At the sidewalk level on all streetfronts, a minimum ground floor height is required to allow conversion from a residential use to commercial, retail, or other active uses.

- Minimum of 16′ ground floor-to-second floor height at the sidewalk level.
- Adequate ventilation, mechanical and electrical equipment shall be provided, or allowance for future conversion/expansion to a variety of tenant uses, such as a retail store or dining establishment.

Minimum Ground Floor Building Depth

Along public streets where retail is required or permitted, a minimum building depth for commercial tenant space shall be provided to ensure functional viability as follows:

- Minimum ground floor depth of 50′ from the storefront to back of tenant space. In limited areas, a narrower depth may be allowed to accommodate building circulation, to a minimum depth of 15′, for no more than 15′ in length.
- Direct pedestrian access to the entry doors and clear sight lines to the street frontage windows and entry.

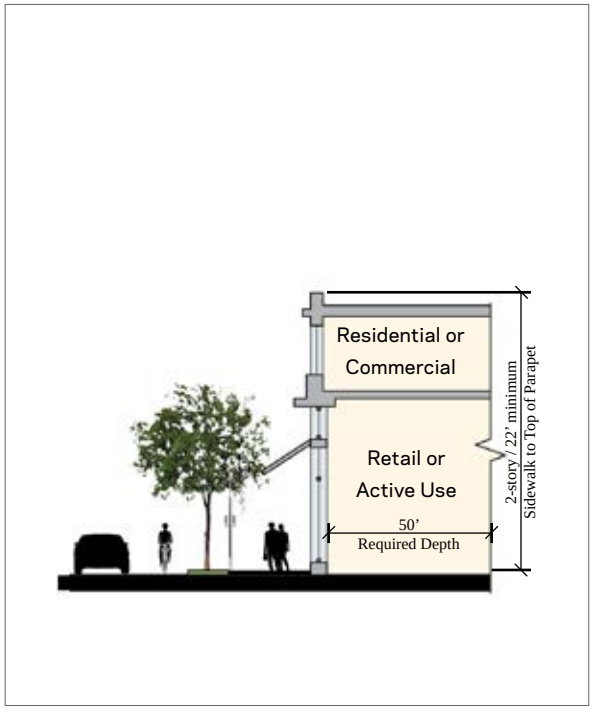
Minimum Building Heights

Along all public street frontages, a minimum building height is required to provide an appropriate scale and pedestrian environment for the District's streetscapes.

- For the majority of the Development Zones, a minimum 2-story building height, above grade, is required. This building height requirement is controlled from the street frontage/lot line back for a building depth of 50′.
- In some specified Development Zones, a minimum height of 22′ from sidewalk to top-of-parapet is allowed on in-fill buildings. However, a minimum 2-story building is strongly recommended in these zones. This building height requirement is controlled from the street frontage/lot line back for a building depth of 50′. Each development parcel must meet the required minimum 0.8 Floor Area Ratio standard.

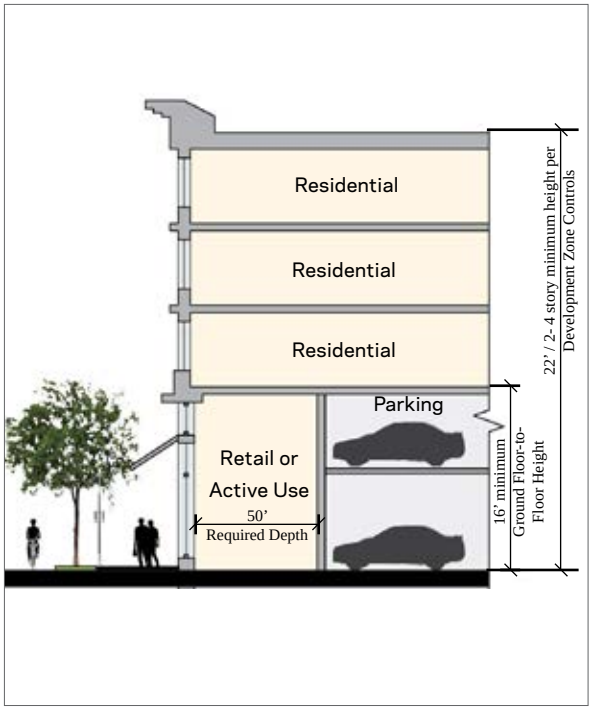
Exhibit 4.37: Chevy Chase, MD © HOK

Development Character - Building Types



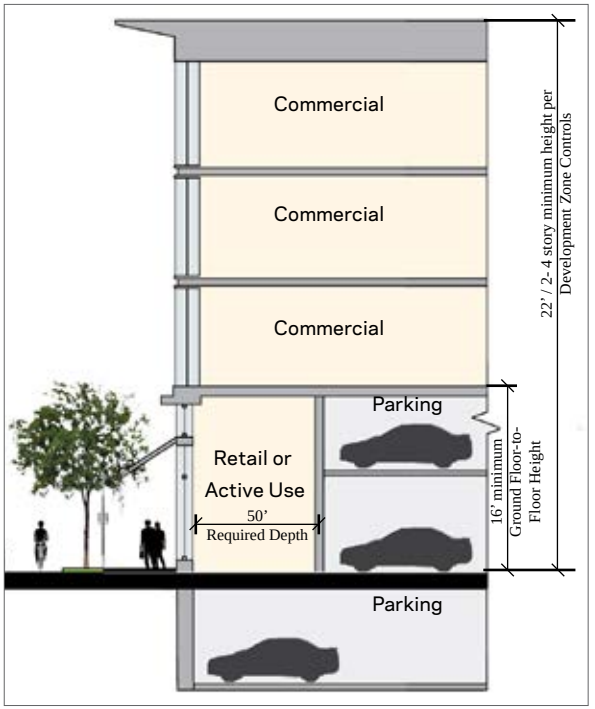
In-fill Buildings

As the District incrementally redevelops, some small parcels or sites with large existing front yard setbacks are encouraged to develop interim in-fill buildings located at the street to increase density and create a more active pedestrian streetscape, particularly along Capitol Avenue. These new in-fill buildings are to be located at the street line, with a minimum height of 22' from sidewalk to top-of-parapet. No setbacks are permitted for this building type.



Mixed-Use with Residential Buildings

For residential developments, a minimum 4-story structure is recommended. Where retail or active uses are required on the ground level, such as on Capitol Avenue, the building shall be located at the street line. Above-grade parking is allowed if located behind the ground level uses and not exposed to the street. On side streets, building setbacks are permitted for landscaping and ground-level entrances to active uses, residential units or live-work lofts.



Mixed-Use with Commercial Buildings

For commercial developments, a minimum 4-story structure is recommended. Where retail or active uses are required on the ground level, such as on Capitol Avenue, the building shall be located at the street line and above-grade parking is allowed, behind the ground level uses. On other streets, building setbacks are permitted for landscaping. On all streets, the primary building lobby shall be directly accessed and visible from the street.

Exhibit 4.38: Street Frontage Examples

Mid-Block Connections

To support the intensified development and encourage a more vital public realm, the Community Plan proposes the creation of mid-block connections to improve circulation for bicycles and pedestrians. This will encourage walking by reducing travel distances within the District and to transit stops. And while the public streets provide an interesting and active commercial place to travel, the mid-block connections provide a convenient and quieter pedestrian-scaled walking route alternative.

Generally, the mid-block connections are proposed:

- As extensions of existing dead-end streets
- To align with/adjustments of existing easements
- To align with existing lot lines.

These connections provide a welcomed open space system, increasing landscape opportunities, providing light and views, and modulating the building patterns for a finer scaled pedestrian network. The resulting increased connectivity within the District supports walkability, increased physical activity, and access to public spaces.

These mid-block spaces are considered part of the development lot's density and open space zoning calculations and requirements. Refer to Section 4.3 Development Controls - Easements.

Exhibit 4.39: Mid-Block Connection Examples

Mid-Block Connection Types

Three types of mid-block connections are envisioned within the District, including:

Street Connections are meant to serve as extensions to the existing adjacent street: aligning, functioning and designed similar to the street. It should allow for vehicles, bicycles and pedestrians access and circulation.

Pedestrian Connections are meant to provide improved walking access to the Civic Center and reduce the large scale of the internal blocks.

Private Pedestrian Pathways are meant to provide further opportunities for residents to connect - visually and physically - to the community. It is a way to activate the side streets and reduce the scale of buildings on the long blocks.

All mid-block connections should:

- Connect to public streets at both ends
- Provide direct continuous pedestrian path(s)
- Provide a minimum clear path of 8' wide
- Complies with American Disabilities Act (ADA)
- Provide sustainable landscaping and furnishings (refer to Landscape Design Guidelines in this chapter).
- Provide access to building entryways
- Situate windows facing the space, and
- Provide amenities and artwork along the passageway.
- Provide pedestrian path lighting

Exhibit 4.40: Mid-Block Pedestrian Connection Example

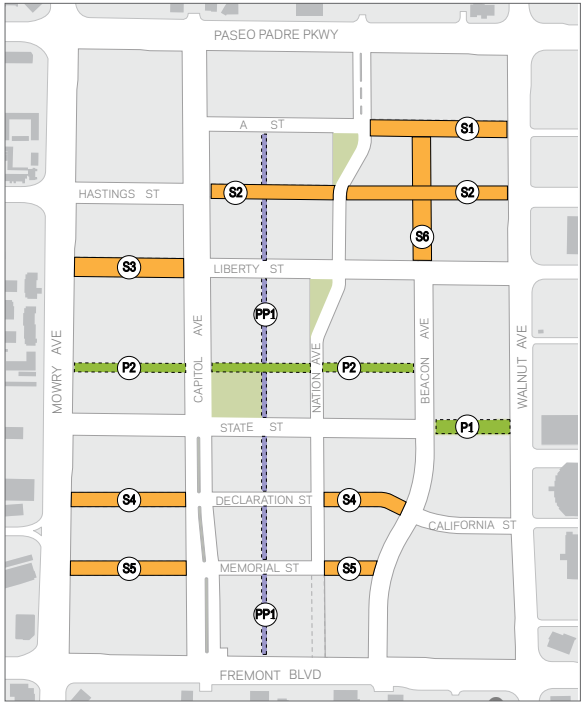


Exhibit 4.42: Proposed Mid-Block Connections Map

Proposed Street Connection
Proposed Pedestrian Connection
Proposed Private Pedestrian Pathway

Proposed Mid-Block Connections

ID #.	Width (feet)	Type	Comments
S1	60'	Street	Extends/Aligns with proposed 'A Street' Public Right-of-Way
S2	60'	Street	Extends/Aligns with Hastings Street Public Right-of-Way
S3	80'	Street	Extends/Aligns with Liberty Street Public Right-of-Way
S4	60'	Street	Extends/Aligns with proposed 'B Street' and California Street Right-of-Ways
S5	60'	Street	Extends/Aligns with proposed 'C Street' Public Right-of-Way
S6	86'	Street	Extends/Aligns with Beacon Street Public Right-of-Way
P1	45'	Pedestrian	Dedicated Public Park as part of the 'Urban Housing' private development
P2	30'	Pedestrian	Connects with proposed Civic Center and Public Plaza
PP1	20'	Pedestrian	Aligns with Civic Center for private pathways and views

Exhibit 4.41: Proposed Downtown Easements

Building Facade Organization

Top Zone

- The 'Top Zone' in a building is the upper levels in the building at the roof line. It includes approximately the top 20% of the building facade.
- This zone can be flush with the body zone or can have discretionary setbacks to provide distinct definition along the street at the upper levels.
- Overall window glazing on the Top Zone should comprise of at least 30% of the facade and no more than 75%.
- Top Zone provides the opportunity for building identity and visual interest against the sky with a distinct profile, materials and/or colors.
- Roof elements, such as pergolas or penthouse balconies should be integrated into the Top Zone design.
- On low-rise buildings, the Top Zone can be distinguished with the cornice/parapet design and/or roof elements to create interest at the top.
- For public building uses like civic and community facilities, the requirement for the Top Zone can be flexible to allow for a different architectural vocabulary, to create an overall visual diversity within the community and mark the special civic role the building plays within Downtown.
- Elements like terraces, balconies and pergolas, should be used to create interesting massing and relief from the facade plane.

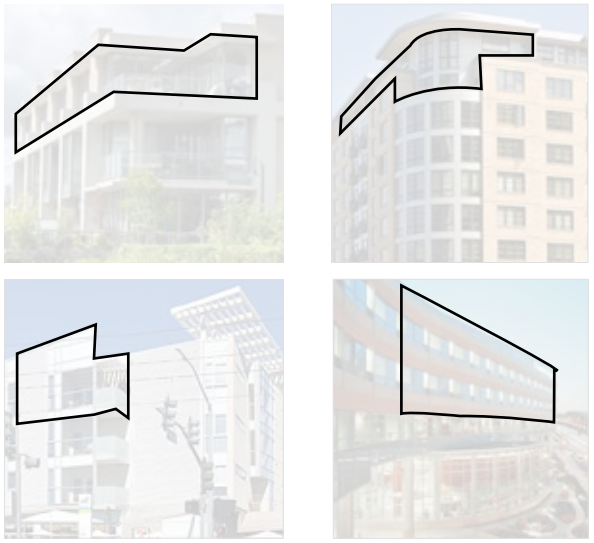


Exhibit 4.43:Top Zone Massing Examples
"Top" zone treated with distinct massing and different materials than over all building to enhance to create unique architectural character.

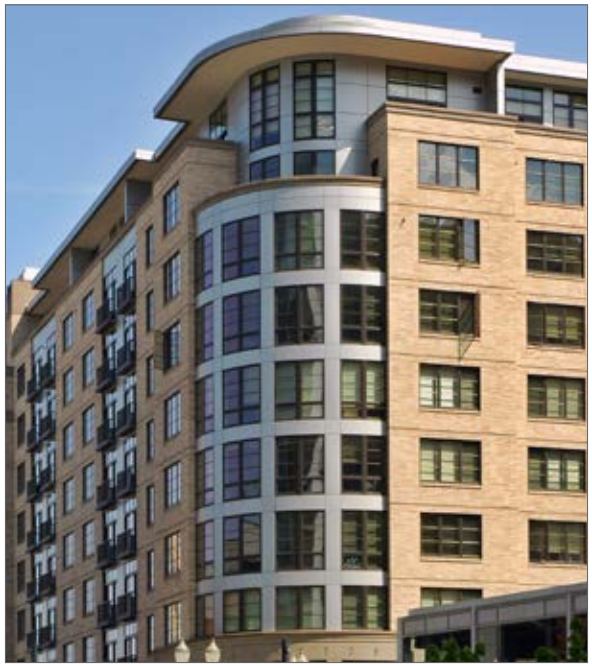


Exhibit 4.44: Top Zone Massing Examples

Body Zone

- 'Body Zone' is the main mid-section of the building facade, situated between the Top and Base Zones.
- Fenestration should be organized to create a rhythmic pattern for the streetscape. Window frames should not be flush with the exterior facade.
- Overall window glazing on the Body Zone should comprise of at least 30% of the facade and no more than 75%.
- For residential buildings, the window patterns should be generally vertical in proportion. Continuous horizontal strip windows are prohibited.
- This zone can be flush with the base zone or can set back from the base zone to provide a clear definition along the street of the base zone. Refer to 4.3 Architectural Development Controls.
- The massing, materials and colors of this zone should be interesting and varied from the Base Zone to create visual interest at the upper levels.
- Projections like balconies, bay windows, and horizontal or vertical shading devices should be incorporated in this zone to provide visual interest.
- Balconies should be partially recessed by 50%. In dimension, their width along the facade shall be 30% more than the balcony depth.

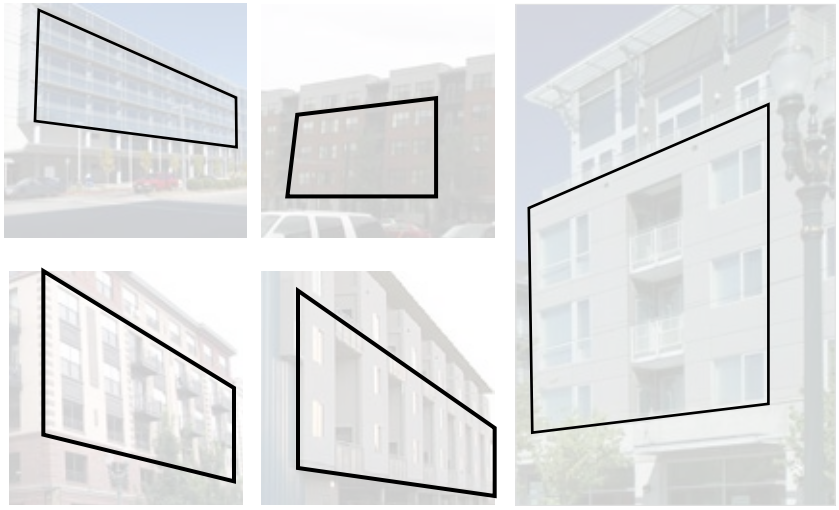


Exhibit 4.45: Body Zone Massing Examples
Facade elements like windows, balconies, shading devices, and bay windows are incorporated as a part of "Body" Zone area.

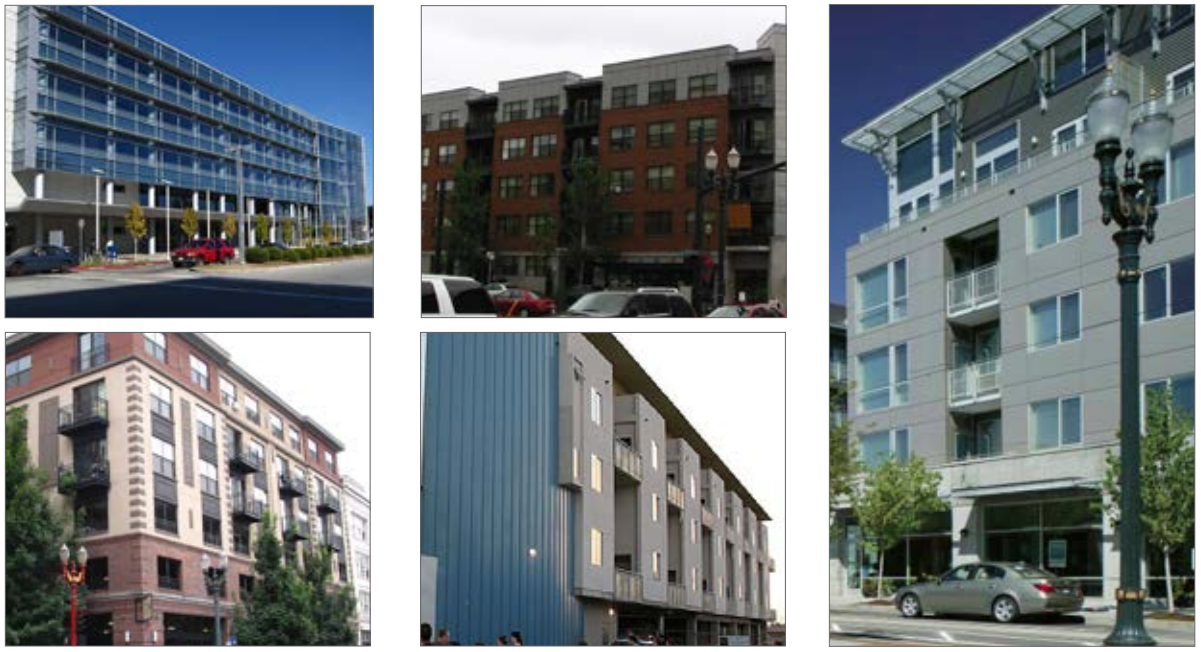


Exhibit 4.46: Body Zone Massing Examples

Base Zone

- 'Base Zone' in a building is the lower facade from the ground level up to the first 2 building stories, depending on the overall height of the building. It is approximately the lower 20% of the facade.
- The Base Zone of the building is the most important part of the building as this is the facade that pedestrians will interact with at the ground level.
- The overall fenestration pattern should be vertically proportioned with piers or window mullions creating a rhythm. The window frames should not be flush with the exterior wall.
- Overall window glazing on the Base Zone should comprise of at least 40% of the facade and no more than 75%.
- It is also extremely critical that the Base Zone adheres to the build-to-line with permissible setbacks to create interesting entrances and plazas for dining.
- Some special exceptions could be allowed for civic and community buildings where treating these buildings with a distinct architectural vocabulary will signal the public nature of the facility and its role in the community.
- Storefront design and materials must be scaled to the pedestrian, provide color and textural interest and withstand the wear and tear of street activities.
- The Base Zone can have retail, residential garden units, or active uses within it, depending on its Development Zone. Refer to 4.3 Development Controls for specific site development requirements.

Exhibit 4.47: Base Zone Massing Examples
'Base Zone' treated with distinct massing and materials to enhance the pedestrian level experience.

Exhibit 4.48: Retail Store Front Massing Examples

Building Design Elements

Facade Elements

Fenestration

- At the Base Zone, retail, service, and other active uses that face a public street or space shall have clear glass on at least 60% of their facades between 3' and 8' above grade.
- All ground floor windows for retail, service and other active uses shall be kept visible (unshuttered) at night. No opaque or all metal security doors are permitted for any building and use.
- All windows and door openings shall be square or vertical in proportion, and any other divisions or openings shall be designed as a pattern of squares or vertically-proportioned rectangles. Grouped or "ganged" windows shall be treated as a single opening, unless they are separated by a minimum 4-inch divider to create an overall square or vertical visual effect. No horizontal strip windows are permitted.
- At key gateway intersections where Special Building Corner Treatments occur, main building entrances are required at these building corners.
- Special window and/or door treatments at the corner of streets or mid-block connections are encouraged.
- Shading devices over doors and windows are permitted to be cantilevered from the facade. They shall be made of architectural grade, low maintenance materials.

Top Zone
Cornices
Green roofs
Solar panels
Passive Recreation
Terraces
Pergolas



Body Zone
Fenestration
Balconies
Bay Windows
Shading Devices



Base Zone
Entrances
Awnings + canopies
Retail Signage
Storefront windows
Cafe and dining areas
Landscaped setbacks



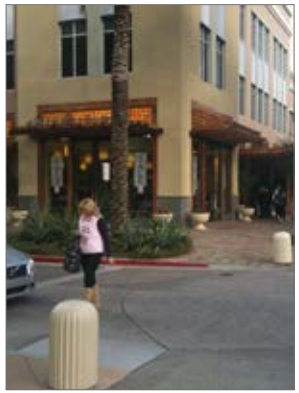


Exhibit 4.49: Facade Element Examples

Roof Design

Downtown will have a variety of building heights which will allow a range for viewing angles from the streets and public spaces to the roofscape. How the roofscape is designed will impact the overall visual environment within and surrounding the district. Roofs are encouraged to give interest and add amenities, such as: Sustainable green roofs, solar generation, recreational areas, tenant gardens and terraces.

As such, all exterior mechanical equipment including HVAC, electrical equipment, storage tanks and satellite dishes must be screened from on-site and off-site view. The City's existing ordinance shall be adhered to: **Sec. 8-22148.1. Mechanical Equipment**

- All rooftop mechanical equipment and appurtenances shall be screened from adjacent properties and the public view by an approved screen constructed of material similar to the principal structure.
- Mechanical equipment and appurtenances located on the ground shall be screened by material similar to the principal building or mature landscaping.
- Flat roofs facing a public space are required to have a parapet above the roof. The parapet shall be a minimum of 12" high (measured from the roof)
- Roofing materials shall have a Solar Reflectance Index (SRI) value of either 78 (Low <2:12) or 29 (Steep>2:12).

Materials and Colors

To reinforce the City's goal to create a modern, sustainable downtown, the materials and colors used within the District should also be contemporary and sustainable.

Materials

The palette of materials encouraged to be used includes:

- Natural building materials from local sources, as feasible.
  - Brick and Tile
  - Stucco or
  - Glass Fiber Reinforced Concrete (GFRC)
  - Wood
  - Natural Metal
  - Stone or Pre-Cast Concrete
- Materials should be selected for long-term durability and minimal maintenance requirements.
- Materials should be selected from local sources and derived from sustainable sources and production techniques.

Colors

- Accent colors should be used at appropriate places (such as window frames, or building trim) in a limited quantity to create visual interest in the urban environment. Accent colors shall be complementary to the overall building materials.
- Darker tones of neutral colors like gray, beige, taupes should be used in the building base zone so as create more solidity and neutral background for the pedestrian environment.

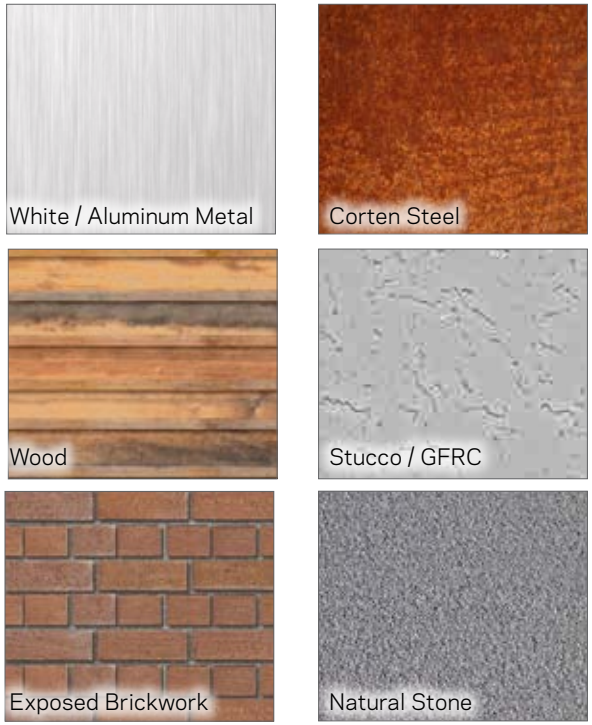


Exhibit 4.50: Building Material Examples

Canopies and Awnings

Canopies and awnings are encouraged at the street level as a pedestrian amenity that provides comfort and interest for users. They provide shelter from rain and sun, identify the business or street address, and signify a building entrance. Their design should be creative and functional to add visual interest to the streetscape.

Canopies and Awnings shall have the following attributes:

- Located within the building base, at ground level and in conjunction with an entrance door, storefront window, lobby or café. They may also be located at the top building floor/penthouse and decked rooftop at accessible terraces and balconies.
- Provide the creative logo or trademark of the commercial or residential establishment on at least one canopy or awning per street frontage. Business or other identification is not permitted on any canopies or awnings.
- Internal structure of the canopies and awnings shall be of metal.

Awnings are generally defined here as light-weight fabric enclosures. The following requirements shall apply:

- Awnings shall be made of canvas or solution-dyed acrylic fabric. They can be fixed or operable.
- The awning's fabric color shall be complementary to the building. Fluorescent or neon colors are prohibited. Fabric finish and color selection should consider weathering, cleaning and maintenance and minimize the visual impact of dirt and soiling.
- Awning profiles shall be of a triangular profile in section. Awnings may have side panels but no underside panel/enclosure.

Canopies are generally defined here as fixed, more permanent structures, either attached or freestanding from the building.

The following requirements shall apply:

- Canopies shall be designed as an integral part of the building's architectural style.
- Materials permitted include:
  - Metal: natural finish, textured and/or painted
  - Glass: clear, frosted, fritted/patterned or clear
  - Column support materials may include: natural stone, masonry and/or architectural tile finish.
- Art Work may be incorporated into the canopy or the canopy itself can be designed as Art.

Exhibit 4.51: Canopy and Awning Examples

Special Building Corner Treatments

At key intersections, special architectural treatments at the building corner enlivens the streetscape and creates a distinct identity for the building. The corner treatment are intended to celebrates the key gateway intersections leading into the Downtown District.

For the corners of the buildings fronting the bounding street of the District's gateway streets: major street or boulevard should be expressed with distinct architectural form.

- Setback and building height rules change to allow special architectural features at the building corners. Refer to Section 4.3 Development Controls.
- Building corners should be treated with distinct massing and materials to heighten the sense of pedestrian visual interest.
- Entrances, large windows with transparency, balconies, terraces and special rooms can be incorporated to take advantage of the important corner views
- Ground level setbacks shall incorporate the main building entry and provide welcoming landscaping, seating and lighting for the pedestrian.

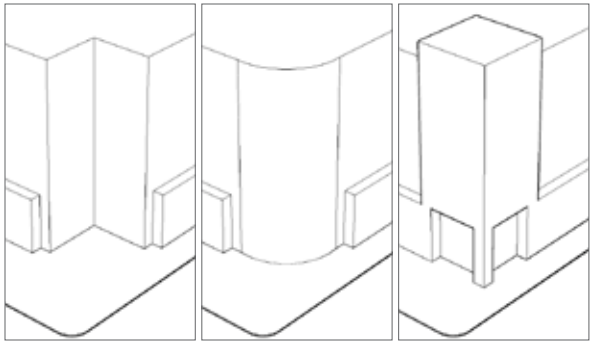


Exhibit 4.52; Building Corner Massing Examples
Some of the different permissible massing expressions for the building corners.

Exhibit 4.53: Building Corner Massing Examples

Exhibit 4.54: Building Corner Massing Examples

Building Entrances

Building entrances help provide visual interest at the pedestrian level and they should be treated distinctly from the overall architectural vocabulary of the building.

- Primary pedestrian entrances should be located on the main street frontages.
- Secondary entrances and vehicular drop-offs should be located on the secondary streets.
- Building entrances should be expressed with distinct architectural massing that is complimentary to the 'Base Zone' guidelines.
- Building entrances should be transparent and well lit at night for the pedestrian so as to provide "eyes" on the streets.
- Street address identification and building signage should be designed to complement the building and be clearly legible from the street and sidewalk entry approach.

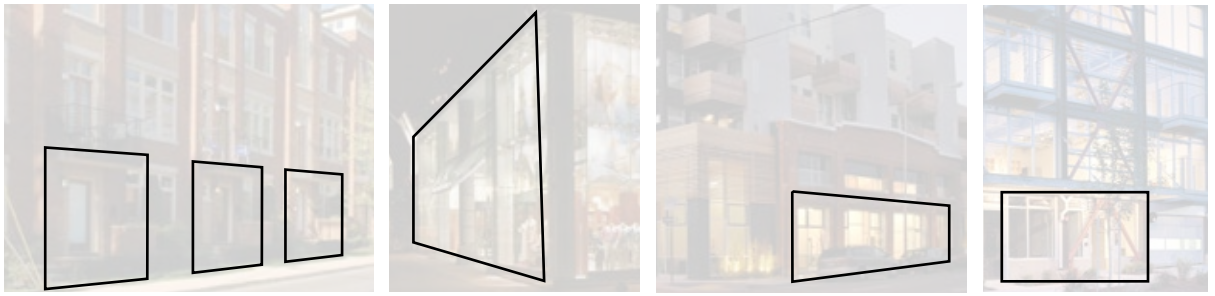


Exhibit 4.55: Building Entrance Massing Examples
Building entrances expressed with distinct architectural features scaled to the pedestrian..

Exhibit 4.56: Building Entrance Massing Examples

Refuse Storage, Service + Loading Areas

The following guidelines apply to all refuse storage, equipment, service and loading areas:

- All service and loading areas must not be visible from the public street. If screening is required to obscure the area, the design must be submitted in plan and elevation for City staff review and approval.
- The design of the service area shall try to accommodate service vehicle activities on-site to minimize impacts the street traffic.
- Refuse storage should be accommodated inside the building, however, outdoor storage can be provided if adequately screened both architecturally and with landscaping. The locations should minimize visibility from the street and neighboring buildings. No storage is allowed in front of the building, adjacent to the street.
- Loading docks shall be screened, both architecturally and with landscaping, to minimize visibility from the street and neighboring buildings.
- Utilities, transformers and telecommunication equipment shall, to the extent feasible, not be located in front of the building, But rather at the back of the building along service streets and shall be architecturally integrated or landscape screening shall be provided.
- To promote walkable streets, no more than 20% of the street frontage within the development project shall be faced with garage and service bay openings.

Parking Facilities

As the District transforms from a suburban development to a more pedestrian/bicycle/transit-oriented City Center, vehicle usage per resident and the related parking facilities will be reduced improving the visual and physical environment. For new development, surface parking lots visible from the streets are prohibited. New parking facilities shall be screened by buildings or other architectural/landscape treatments.

As part of the Downtown Community Plan, public parking will be provided as street parking as well as within a proposed parking structure for the Civic Center, conveniently located in the central area of the District.

Private parking may be accommodated on-site. Additionally, shared parking facilities are encouraged to balance the demands of day-time visitors with evening visitors and residents.

The following guidelines apply to all development:

Setbacks

- Below-grade parking facilities have no setback requirements. Any openings must be secured and screened with no direct view of parked vehicles and lighting.
- At-grade and above-grade parking facilities have specific setback requirements according to the Development Zone it is in. See Section 4.3 Development Controls.

Facades

- Parking structures associated with a development project shall be designed to be compatible in architectural design, materials, colors and graphics with its related building(s).
- Views of parked vehicles shall be screened and the glare from car headlights and facility lights within the structures shall be blocked from adjacent public areas.
- Stair and elevator towers shall be designed with safety for users and add interest to the overall building façade. Care should be given to avoid direct views to the lighting sources from the public street areas.
- Consider enhancements to the roof deck to improve the view from neighboring buildings and increase the sustainability and utility of the space.
- On the roof deck consider: a green (landscaped) roof; solar panel canopies to generate electricity for the facility while shading parked cars; seating with trellises and canopies to provide user comfort and visual interest from the public areas.

Exhibit 4.58: Parking Facility Facade Example

Exhibit 4.59: Parking Facility with Landscaped Roof

Exhibit 4.60: Parking Facility Entrance Example

4.5 SIGNAGE DESIGN GUIDELINES

Intent

To reinforce Fremont's goals for a visually rich, creative and lively downtown environment, all signage shall have an artist-quality and unique design that reflects the individual nature of its business. Given the intended pedestrian nature, signage is an important streetscape element that provides visitors, employees and residents with the cues and information they need to explore and discover the District. In addition, signage conveys the character and quality of the community. The cumulative effect should result in a complementary but visually stimulating variety of signs that rewards walking and lingering in the District.

These signage design guidelines are specifically for the Downtown District and work in concert with existing City of Fremont signage regulations. A permit is required for most permanent, temporary and promotional signs to ensure that the size and location of the sign comply with the applicable regulations. The proposed signage should be submitted with the initial project permit documents. These guidelines are intended to ensure that signs are distinctive, modern, pedestrian-oriented and of quality, durable materials.

General Signage Guidelines

- All signs shall be architecturally integrated with and complement the design of the building. The signage should convey their message clearly and legibly in a contemporary design and consider the adjacent surroundings and neighbors.
- One primary business sign for each building façade facing a public street or alley is permitted. In addition, directory signage is permitted for multi-tenant buildings at the ground floor.

Placement

- Building signage shall be located below the second floor window sill. However, in multi-tenant buildings, second floor businesses may have window, awning and/or projecting signage no higher than the top of the second floor window.
- Monument signage, where allowed, shall be located adjacent to the sidewalk in a landscaped area. The signs shall be proportionate with their placement and viewing distance from the street.
- Rooftop signage is prohibited.

Exhibit 4.61: Hanging Sign Example

Sign Types

Primary building signs recommended for the use in the District include:

- Building-mounted signs
- Awning or Canopy Signage
- Reverse-Window Painted signs
- Blade and Projecting signs
- Directory, multi-tenant signs

Primary business sign types prohibited from the District include:

- Free-standing pole or pylon signs
- Billboards and off-premises signs
- Roof signs
- Monument signs except on the Edge Zone streets of Walnut Avenue, Fremont Boulevard, and Mowry Avenue.

Secondary and/or Special Signage that supplements the primary, larger business sign is allowable if: artistic, identifies the business and conveys a message thru the use of a pictorial or graphic image and limited wording. Allowable special signage includes:

- Customized flags mounted on decorative complementary bracket, and
- Murals or trompe l'oeil painted on the building's exterior wall surface, with review by City staff.

Signage Construction Types allowed include:

- Painted or raised metal signs; surface-illuminated.
- Custom hanging signs and brackets that in form or shape illustrative of the business.

- Custom neon, non-flashing and limited to two colors.
- Back-lit or halo-lit letters.

Signage Types prohibited include:

- Internally-lit, flush-face cabinet-type sign boxes.
- Internally-lit, flush-face cabinet-type individual letters.
- Moving or revolving signs.

Design and Materials

Materials allowed include:

- Natural or finished metal
- Wood or synthetic wood
- Synthetic materials.

Signage mounting shall be designed as an integral part of the sign and configured for ease of maintenance and replacement, minimizing potential damage to the building. Mounting signs on trees or other natural features or suspended between poles are prohibited. Visible power sources, transformers and raceways are prohibited.

Signage Illumination

Signs shall be illuminated to be sufficiently legible but not over-lit to produce glare and distraction from the overall streetscape environment or neighboring work and living spaces. Light sources, including external spot or flood lighting shall be shielded from direct view from passersby, except for neon and LED lighting.

Energy-efficient, color-corrected lamping shall be used. LED and fluorescent lighting is allowed. Halogen, high-pressure sodium and incandescent lighting are prohibited.

Flashing, intermittent, or 'race-way/running' lighting is prohibited.

For upper-story building signage, external surface lighting is prohibited; internally-lit signage is allowed.

Exhibit 4.64: Building Mounted Signage Example

Exhibit 4.65: Building Mounted Office Signage Example

Exhibit 4.62: Monument Signage Example

Exhibit 4.63: Hanging Sign Example

Exhibit 4.66: Illuminated Signage Example

4.6 LANDSCAPE DESIGN GUIDELINES

Bay-Friendly Landscaping

Landscapes created within the District should respect the natural attributes of our region and contribute to the health, diversity, and sustainability of the San Francisco Bay ecosystem. To this end, **the City of Fremont has adopted Alameda County Waste Management Authority's 'Bay-Friendly Landscape Guidelines'** (www.stopwaste.org) that offers sustainable practices for the design, installation and maintenance of our gardens and landscaping. All projects within the Downtown area must meet the Basic Practices level of 60 points and are highly encouraged to achieve 80 points as calculated in the Bay Friendly Scorecard. Below are key elements to guide the creation of the new landscapes toward an environmentally responsible result.

Landscape for Less Waste

- Select appropriate plants to match micro climates and soil conditions
- Compost plant debris
- Water and fertilize judiciously

Nurture the Soil

- Protect topsoil and prevent erosion during construction
- Feed soils naturally with compost
- Mulch regularly

Conserve Water

- Grow native California natives or Mediterranean plants
- Minimize lawn area
- Design for on-site rainwater collection and graywater use
- Install and maintain high-efficiency irrigation systems

Conserve Energy

- Reduce heat island effect by shading paved areas
- Specify local products and suppliers
- Plant and protect trees
- Design lighting efficiently

Protect Water and Air Quality

- Use Integrated Pest Management
- Minimize impervious pavement
- Maintain irrigation system and equipment
- Design water treatment system

Create Wildlife Habitat

- Diversify plants and use native plants
- Provide water and shelter
- Eliminate the use of pesticides

Exhibit 4.67: Rain Garden Example

Storm Water Quality

Storm water runoff in the public right of way will be treated with City standard tree well filters sized and spaced to accommodate the impervious area within the street right of way. Calculations must be submitted showing that the number of tree wells filters and other treatment techniques proposed are adequate to treat the stormwater. Planted medians, with treatment soils and other planted areas in the public right of way may also be used to provide storm water treatment of the public streets.

Development of private lots must incorporate storm water quality measures in conformance with the Regional Water Quality Control Board requirement in place at the time of development. It is possible that aiming for USGBC's LEED standards or other sustainability targets may have more restrictive requirements.

Current post-construction storm water quality measures may include features such as harvest and reuse, bio-retention, rain water gardens, green roofs or other treatment measures that provide the required level of treatment. Because of the space requirements for these features and the more urban development density in Downtown, the storm water quality solution for individual lots will need to be addressed early on in the planning process for development of the lot.

Plant Materials

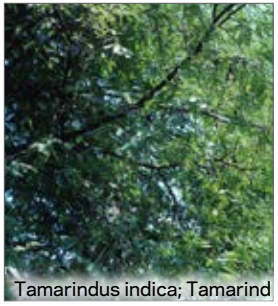
Plant materials soften the scale of the architecture and respond to a fundamental human need for comfort. They also add color, richness, texture, shade, and a sense of maturity to the landscape.

Plant materials suggested in this section have been selected per the various functions they can perform within the community.

Six major groups of plant types are identified for this project as described below with their characteristics and logic

- **Ornamental Trees:** Specimen with delicate branching, showy flowers, fragrance, and colorful bark. Use selectively in the park as an accent and more heavily in courtyard spaces, to add interest and variety.
- **Shade Trees:** Informal trees that provide shade and have a more naturalistic form. These trees are planted in clusters in park spaces, courtyards and to provide for screening of views between buildings.
- **Shrubs:** Shrubs should be locally available and drought-tolerant. These should be used extensively to provide structure and create space. A variety of heights should be chosen to create a layered effect.
- **Annuals + Perennials:** These plants should be used sparingly to add bursts of color in carefully chosen areas such as entries and public plazas. Perennials are preferred due to their superior longevity and lower maintenance costs.
- **Groundcovers:** Low maintenance plants that can be used to create interesting patterns and in areas where lawn may be difficult to maintain.

Shade Trees

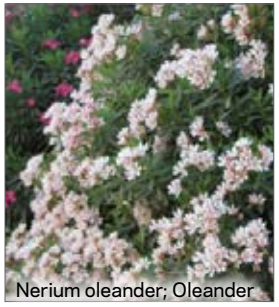

Tamarindus indica; Tamarind

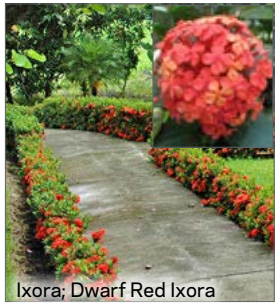

Ficus Religiosa; Bodhi Tree


Platanus acerifolia; London Plane Tree


Magnolia grandiflora; Southern Magnolia

Shrubs


Nerium oleander; Oleander


Ixora; Dwarf Red Ixora


Abelia x grandiflora; Glossy Abelia

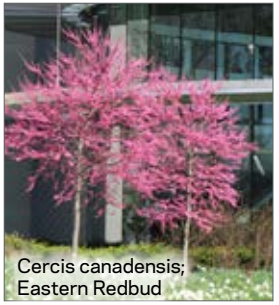

Raphiolepsis indica; Indian Hawthorn

Ornamental Trees

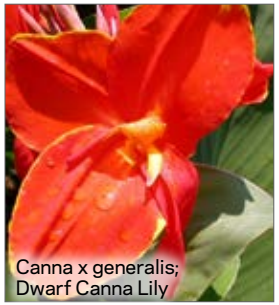

Lagerstroemia tuscarora; Crape myrtle

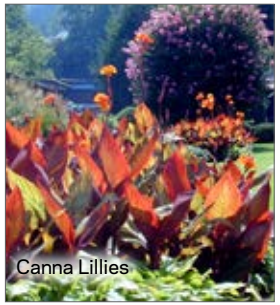

Pyrus 'Aristocrat'; Flowering Pear


Jacaranda mimosifolia; Jacaranda


Cercis canadensis; Eastern Redbud

Groundcovers, Annuals, + Perennials


Canna x generalis; Dwarf Canna Lily


Canna Lillies


Lantana


Miscanthus

Exhibit 4.68: Planting Examples

Site Furnishings

The site furnishings should provide a comfortable and inviting pedestrian experience. A simple and elegant design palette shall be chosen to fit well with the overall contemporary architectural vocabulary. All furnishings should be chosen for:

- Contemporary design with clean, comfortable lines.
- Designs should also encourage relaxation as well as exploration.
- Sustainability designed and manufactured, and
- Durable, low-maintenance materials.

Paving Materials

Paving materials will mainly consist of locally available stone and locally designed and installed permeable or semi-permeable paving.

This paving should complement the architecture and create a neutral, warm color palette on the ground plane.

Permeable/Semi-Permeable Paving:

- This type of the paving should be used as much as possible to allow the water to discharge in the ground. They should be mainly used along the walkways, surface parking lots or driveways.

Formal Paving:

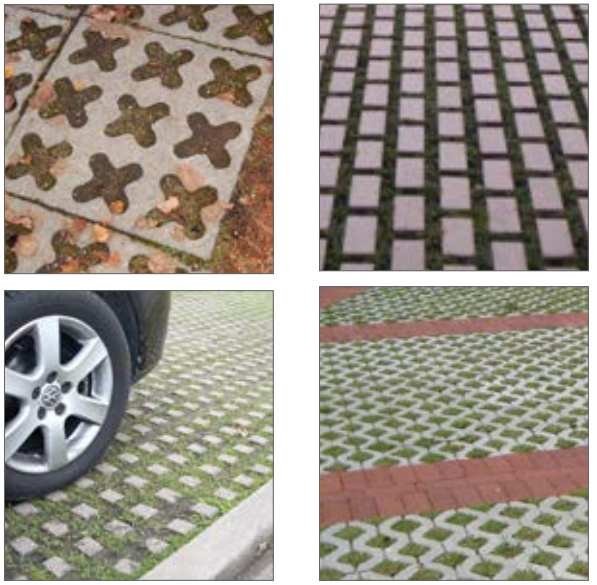
- This type of paving should be used in the important public areas and heavily trafficked areas, important pedestrian plazas and sidewalks. Although formal, wherever possible they should be detailed to allow rain water ground percolation.

Site Furnishings

Exhibit 4.69: Site Furnishings Examples

Paving Materials

Permeable / Semi-Permeable



Formal Paving

Exhibit 4.70: Paving Materials Examples

Exterior Lighting

Six distinct outdoor lighting needs are identified for the project, noted below:

- Pedestrian Lights
- Flood lights
- Bollards
- Foot lights
- Wall Lights
- Special lights for featured open spaces.

The choice of fixtures as well as the decision on light quantity and quality should be governed by the factors such as convenience to the pedestrians as well as creating a safe walkable pedestrian environment. The design of fixtures and materials should all be chosen so as to:

- Compliment the overall contemporary architectural character of the District,
- Use highly energy-efficient light sources such as LED lamping,
- Cut off light distribution to minimize glare and light intrusion into buildings or into the night sky,
- Be sustainability designed and manufactured, and
- Be low maintenance, durable and have a long life cycle.

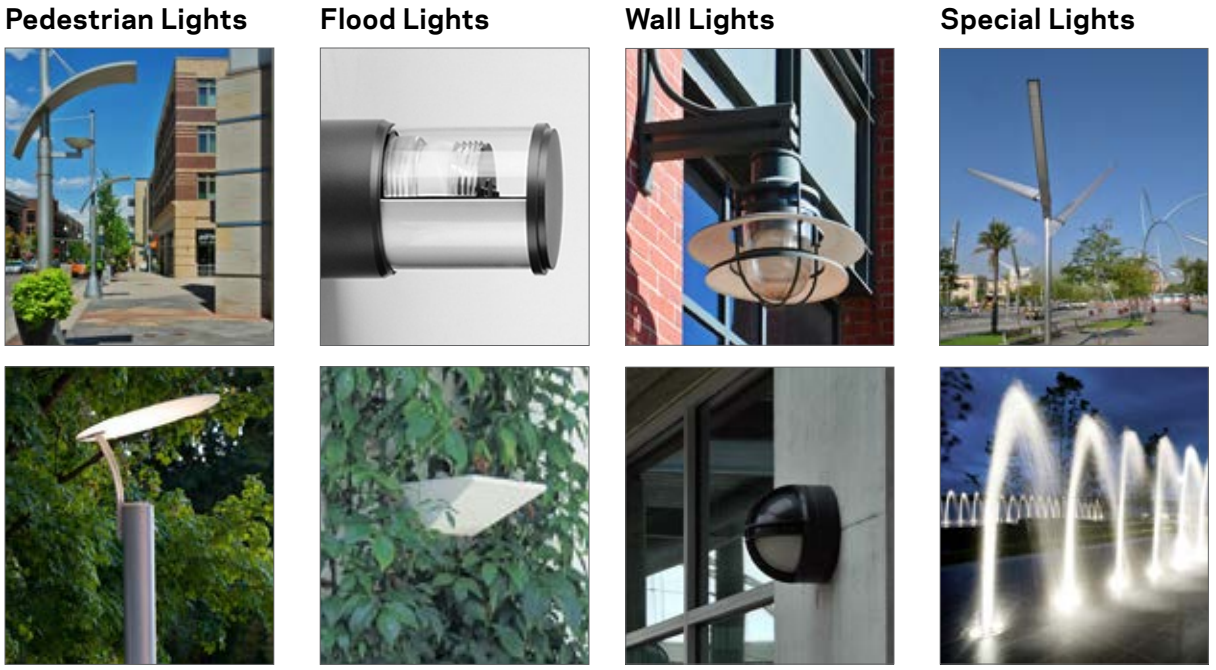


Exhibit 4.71: Lighting Design Examples

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5.0 IMPLEMENTATION

Exhibit 5.1: Rendering of Proposed Capitol Avenue and State Street Improvements

5.1 DEVELOPMENT APPROVAL PROCESS

Intent and Purpose

The Downtown District Development Approval Process is the framework that guides entitlement approvals within the Downtown District. One of the main objectives of the Downtown District zoning is the creation of a unique entitlement process that enables applicants to effectively respond to market forces as they change over time. The process is set forth in the City's zoning code and outlined here for convenience.

Application

Subject to certain exceptions, entitlement approvals for all buildings, structures and site development will be required before a building permit is issued for a project within the Downtown District. The entitlement application that shall be submitted to the City is a Design Review application. All other entitlement applications such as Street Vacations, Variances, Zoning Administrator/ Conditional Use Permit applications, etc. that are not a necessary component of a proposed Design Review entitlement shall follow the typical City process related to those submittal requirements. The City's goal is to streamline these additional entitlement applications and process them in a timely fashion. As such, concurrent submittals are encouraged.

Early Consultation

During the initial planning phase for a proposed project, it is important that the applicant contact City staff to meet and discuss the proposed project. Early and frequent communication between the Applicant's Design Team and City Project Team will ensure that a complete application is submitted, which is beneficial to all involved in the review of the development project. An option with any development project within the City is the submittal of a Preliminary Review Procedure (PRP) application. The PRP process is a highly recommended tool by that allows the Applicant's Design Team to receive initial direction/feedback, and identify key issues before a full detailed plan submittal package is completed for an entitlement application.

Exhibit 5.2: Hastings Street Mixed-Use Project Rendering

Exhibit 5.3: Urban Housing Project Rendering

Approval Process

Design Review Permits are subject to review and approval by the Planning Commission at a public hearing. Decisions made by the Planning Commission may be appealed to the City Council. Subsequent changes to approved projects may be approved by the Planning Manager unless the Planning Manager determines that the proposed changes would result in a material departure from the approval granted by the Planning

Commission, in which case the proposed changes shall be subject to review by the Planning Commission. A flow chart is provided to summarize this process (Exhibit 5.4). It is the City's goal to streamline Design Review applications and to create an assigned staff team to review all projects within the Downtown District. There are many benefits to having an assigned team, including familiarity with applicable codes and documents, as well as understanding the vision and direction, all of which all can translate into a streamlined review process.

Optional – Preliminary Review Procedure (PRP)

As noted above, applicants are encouraged to use the Preliminary Review Procedure (PRP) to obtain early review of a development proposal from several City staff professional disciplines (e.g., planning, zoning, building, engineering, traffic, police, fire, environmental services, landscape architecture, and economic development) and responsible public agencies (e.g., flood control, water and sanitary districts) prior to submitting a complete Design Review Permit application. One of the benefits of utilizing the PRP is that comments can be provided on a conceptually designed project prior to full detailed plans being completed, which should save the applicant both time and money. Initial comments received from the PRP provide the applicant with important feedback and direction on the proposed project that can be used in preparing the complete plan submittal package. The PRP handout form can be obtained at the City's Development Services Center or accessed and printed from the City's planning web page (www.fremont.gov/permit).

Design Review

Design Review Permit submittals for site plan and architectural review shall identify the overall strategy for the proposed development of the project site and the coordination of major site systems such as vehicular circulation, parking, pedestrian circulation, plaza/open space areas, stormwater treatment and conveyance, building orientation, site utilities and adjacent sites. Design Review Permit submittals shall include, but are not limited to the following:

Design Approval Submittal Requirements

Plans including the following items:

- Vicinity map showing a half-mile radius from the project site.
- Context Map showing the location of all land uses, structures, driveways, parking areas, trees, and drainage courses within on the site and within 200' of the perimeter of the site. The context map may be on the site plan or submitted on a separate sheet.
- Accurately dimensioned site plan showing:
  - Property lines.
  - Location, configuration and setbacks of all existing and proposed buildings and intended uses for the buildings and site, including occupancy classification and type of construction as defined in the Building Code.
  - Parking, vehicle circulation areas and driveways.
  - Pedestrian circulation areas, existing and proposed.
  - Fencing.
  - Easements on the property as identified in the preliminary title report (See section g for preliminary title report requirements).
  - New Community Plan Mid-block Connection requirements, if applicable.
  - Existing street improvements, including median dividers.
  - Signing and striping of the street frontage.
  - Existing trees proposed or required to be preserved showing trunk locations, and accurate canopy outline, groves may be shown in an outline.
  - All fire hydrants within 300' of the project site.
- Elevations showing:
  - Each side of all proposed buildings and/or existing buildings, with ground level floor-to-floor height and overall building height(s) noted.
  - Materials and colors to be used on each elevation.

- Floor plans, indicating all intended uses of each area.
- Photometric plan and lighting details.
- Two copies of a current preliminary title report for projects that involve construction of a new building or expansion of an existing building footprint and/or new site improvements such as landscaping, special paving, utilities and accessory structures.

Statistics checked below may be indicated on the site plan or on a separate sheet:

- Building floor area (measured from the exterior faces of the walls less any areas within the buildings devoted to parking/ circulation, atriums and similar areas).
- Overall site density (Floor Area Ratio).
- Building coverage of site.
- Number of parking spaces, specifying the number of full size, compact spaces, accessible spaces, motorcycle and bicycle parking spaces.

A material and color sample board with an overall size no larger than 11" x 17". The sample board shall include exterior finish material and colors for all visible surfaces including ground paving, walls, roofs, glazing systems, etc. The manufacturer's or supplier's names along with the color code and model numbers for each material or color shall be included on the material and color board. Any additional information necessary to clearly identify the specific materials proposed to be used shall also be included. Both finish and color shall be labeled and keyed to the elevations.

Tree Survey and Landscape Plans

- Tree survey plan showing the following (if no trees exist on-site, please provide a statement by the civil engineer or surveyor indicating no trees exist on-site, as an alternative to the required tree survey):
  - Existing and proposed site features, including but not limited to buildings, walls, paving, grading, etc.
  - Tree(s) trunk 6" (DBH) trunk diameter at 4.5' above ground level) and larger located on plan by a licensed surveyor, and with accurate canopy line.
  - Summary table identifying botanical designation, DBH, and elevation of tree at ground level.

NOTE: Additional analysis by a certified arborist may be required pending review of tree survey and other required project plans.

- Location, spacing, size, quantities, and botanical designations of all existing and proposed on-site, and required right-of-way planting.
- All trees graphically differentiated from other planting types.
  - Design details and section drawings for all landscape architectural features such as wall fences, lighting, paving types and patterns, arbors, benches, fountains and other like features accurately showing size, scale, form, materials, and colors.
  - Existing trees proposed for preservation.

Civil drawings including:

- Grading and Drainage Plan showing the following:
  - Existing and proposed grades from existing City benchmark, including estimated grading quantities.
  - Estimated grading quantity (cut and fill calculation).
  - Finish floor and pad elevation.
  - Preliminary Stormwater Management Plan.
  - The location, pipe sizes, slope, invert and grate elevations underground storm drain system.
  - Hydraulic drainage calculations.

Utility plans showing water, sanitary sewer, gas, electric, cable and phone. Mechanical, electrical and plumbing capacity for existing and/or future retail/commercial expansion.

Stormwater Treatment Measures Maintenance Agreement.

A statement of Best Management Practices (BMP's) appropriate for the proposed development to prohibit pollutants from entering into storm water runoff. The BMP statement shall include measures for construction, long-term operation, and maintenance of the project.

Statement outlining how the proposed development project complies (including but not limited to: use, density, form-based zoning, parking, transit, pedestrian & vehicular

circulation, open space, architecture, landscape, and art) with the Downtown District Community Plan + Design Guidelines.

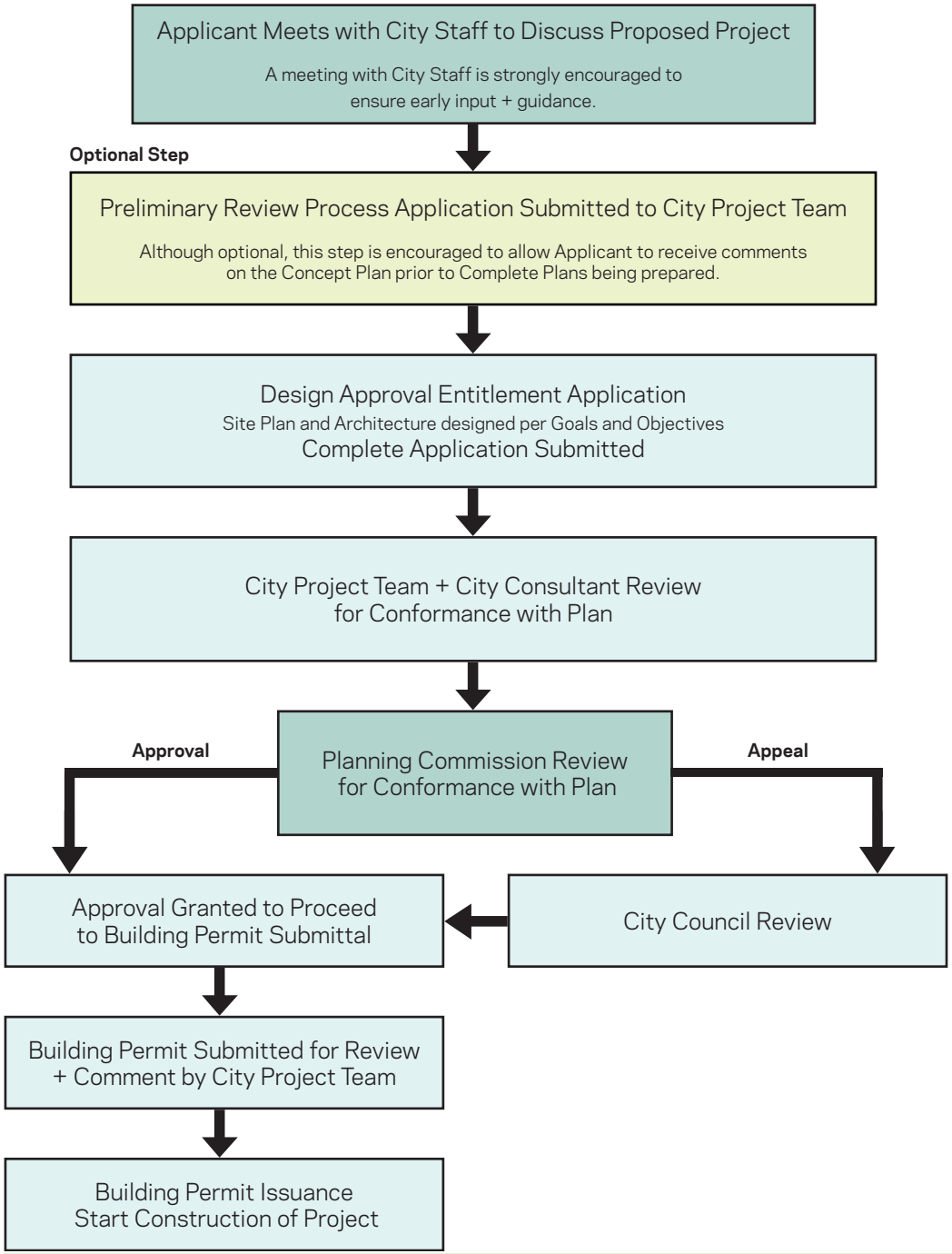

Exhibit 5.4: Downtown District Development Approvals Process

5.2 PRIORITY PROJECTS PLAN

To spark private investment and redevelopment in the Downtown District, the City will need to have a focused and pro-active approach. The first efforts should be centered on Capitol Avenue, from Fremont Boulevard to State Street.

Preparing the area for the proposed improvements will include legal, budgetary and technical design work on the public right-of-way and City-owned properties. Investment by the City on the public streets will in turn encourage private investment. Key improvement projects critical to the success of creating a new Downtown are:

- Build the new extension of Capitol Avenue to Fremont Blvd.
- Redevelop the new streets and blocks from Fremont Blvd. to State Street.
- Improve the streetscape along Hastings Street, State Street, Beacon Avenue and California Street.
- Guide the current permitted private developments to successful implementation: the Urban Housing Project and the Hastings Street Mixed-Use Project.
- Implement the Downtown Art Program.

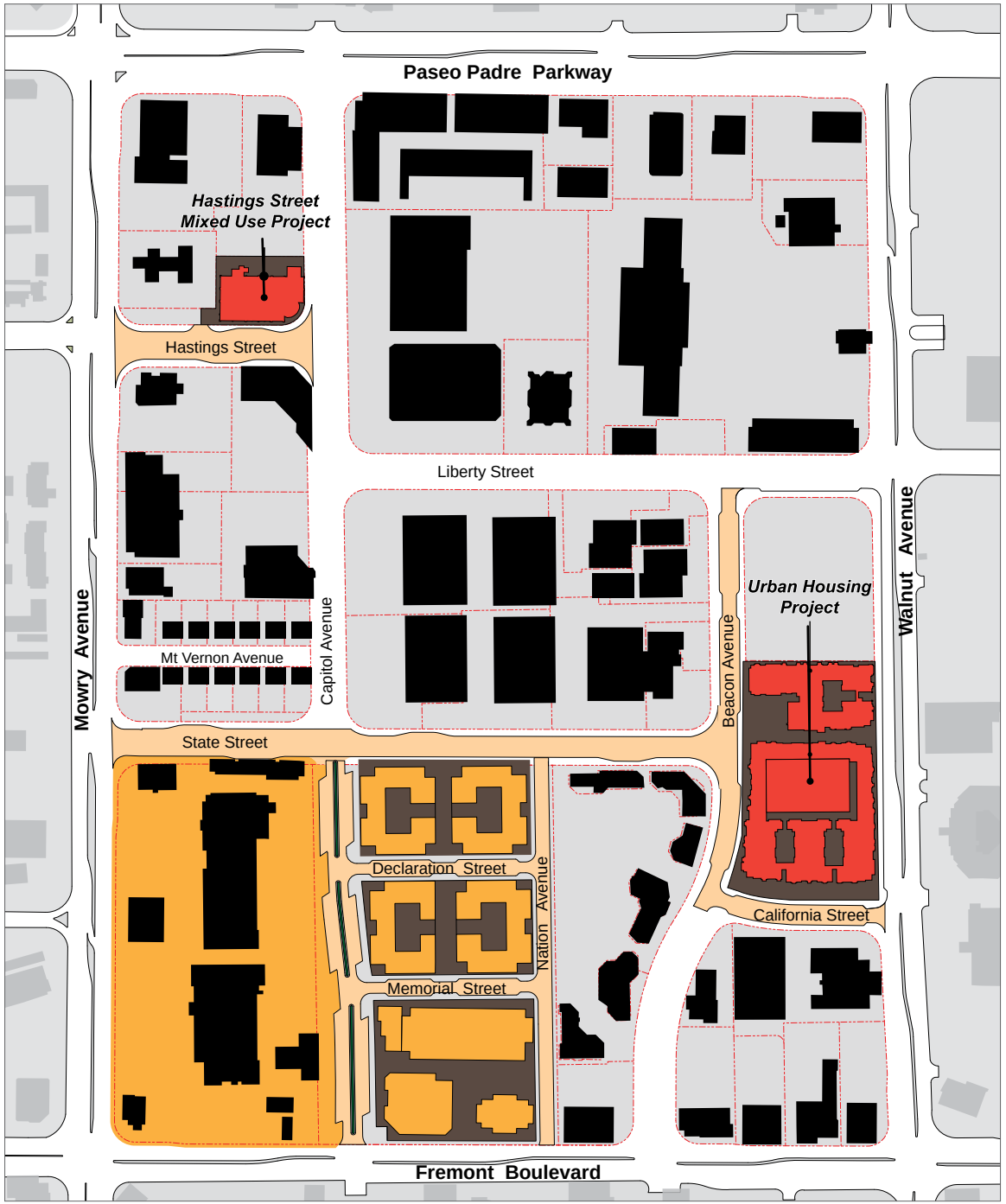

Exhibit 5.5: Priority Improvement Projects Plan

- Entitled Mixed use Development
- Priority Public Right-of-Way Improvements
- Priority Private Development Sites
- Existing Buildings
- Existing Property Lines

6.0 APPENDICES

6.1 FIRE ACCESSIBILITY 140

6.2 USGBC LEED - PRELIMINARY APPROACH 142

6.3 CALGREEN VS. LEED - COMMERCIAL 149

6.4 CALGREEN VS. LEED - RESIDENTIAL 156

6.5 REFERENCE DOCUMENTS 165

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6.7 ACKNOWLEDGMENTS 168

Exhibit 6.1: "Harmony of Shape" Mario Chiodo
Source: City of Fremont

6.1 FIRE ACCESSIBILITY

The proposed Downtown District roadways are designed to fully accommodate fire and emergency vehicles based on the City of Fremont's fire accessibility regulations. The majority of the roadways within the Downtown District inherently meet the Fire Code because of their design. However, the roadways with medians and Capitol Avenue (identified on left exhibit as Conditional Fire Accessible Route) require additional District specific measures to meet the City of Fremont's Fire Code.

Building developments on Conditional Fire Accessible Routes (refer to Exhibit 6.2) will need to provide "Designated Fire Access Areas" where life-safety trucks and equipment can be set-up in the event of an emergency. The exact spacing of the designated areas will be determined during the permit process by the City of Fremont as development occurs along these routes.

The streetscape designs have been developed in coordination with the City of Fremont's Fire Department. The design of the proposed street medians include a 5' bio-infiltration area with 3' turf-block strips on both sides of the bio-infiltration area. The addition of the turf-block/permeable pavers provides the fire department with sufficient space to set-up in the event of an emergency. Medians will have an all-weather surface area designed to support the load capacity of the fire trucks.

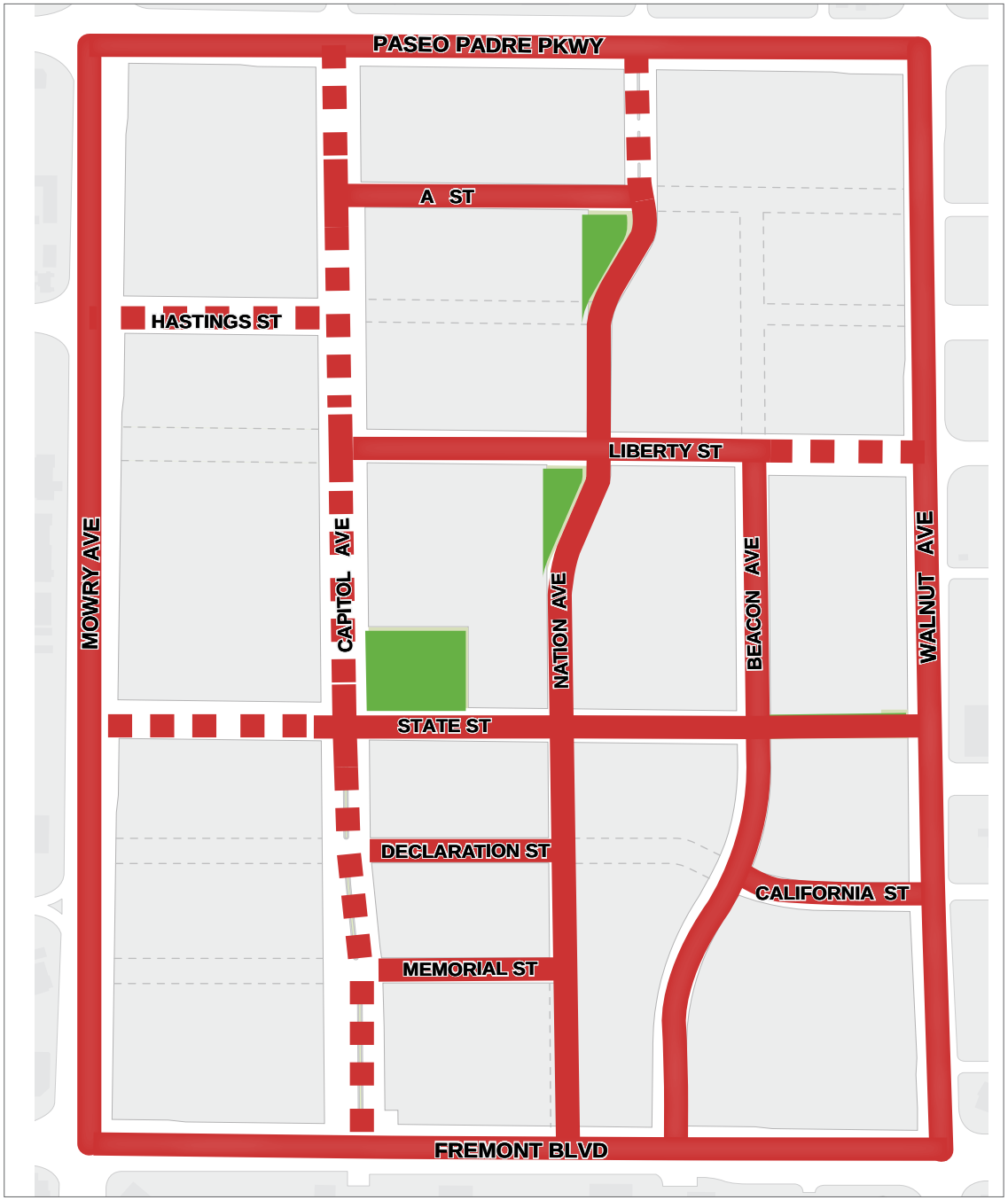

Exhibit 6.2: Fire Accessibility Map

City of Fremont Fire Regulations

The following regulations, as set by the City of Fremont's Fire & Life Safety Requirements for Fire Department Access and Water Supplies, outline specific guidelines that should be used for future developments.

During the initial design stage of a development project it's recommended to contact city staff to discuss and review the proposed project.

Fire Apparatus Access

- Access roads shall have a minimum unobstructed width of 26' in the immediate vicinity of any building greater than 30' in height.
- At least one required access route shall be located within a minimum of 15' and a maximum of 33' from the building, and shall be positioned parallel to one entire side of the building.
- Buildings over 57' in height are required to be built using high-rise construction type. This limitation would be imposed for buildings/parcels that do not meet the specific access requirements of the CFC, Appendix D.

Commercial Buildings

- Any new building exceeding 3 stories or 30' in height shall have at least two means of fire apparatus access.
- New buildings over 124,000 gsf shall provide at least two separate Fire Apparatus access points.
- New buildings up to 124,000 gsf shall provide at least one Fire Apparatus access point.

Exhibit 6.3: Fire Accessibility for Buildings

* Note: All new construction in the City of Fremont has sprinklers; some International Fire Code (IFC) specifications do not apply.

Multiple-Family Buildings

- Buildings containing between 100-200 dwelling units with an approved residential sprinkler system may have a single fire apparatus access point.
- Buildings exceeding 200 dwelling units shall have two separate approved means of Fire Apparatus access.

Fire Hydrant Spacing

- Shall be spaced at 300' intervals for commercial and multi-family residential buildings and not more than 15' from an approved fire apparatus access roadway.
- Additional fire hydrants may be required after review of the specific building heights and configurations are proposed.

Automatic Fire Sprinkler System

- All new buildings must contain automatic fire extinguishing systems.
- Additions or alterations to existing buildings resulting in floor area greater than 5,000 sf, or with addition of 2,500 sf, or with addition greater than 50% of existing floor area will require installation of new automatic fire extinguishing system.

6.2 US GREEN BUILDING COUNCIL LEED PROGRAM - PRELIMINARY APPROACH

US Green Building Council (USGBC) LEED Program

In addition to the State's Title 24 building code, the City of Fremont is also seeking complicance with some of the US Green Building Council's (USGBC) LEED programs. For the City's new facilities, all buildings are required to meet the USGBC LEED-New Construction (LEED-NC) Silver standards. For private development, the Plan requires all buildings to meet USGBC LEED-New Construction Silver or LEED-Existing Buildings Operations and Maintenance standards (LEED-EBOM).

For the overall Community Plan, however, the LEED for Neighborhood Development standards is most applicable to a district plan.

LEED-Neighborhood Development (LEED-ND)

In order for the Downtown District to comply with the LEED-ND development standards, the following mandatory prerequisites are required, as listed in the following table and text. In addition, for certification there are additional planning and design features required for the Downtown to meet LEED-ND requirements. The Scorecard Matrix also included below, shows the preliminary approach to achieve Silver level certification.

Smart Location and Linkages (SLL)	
Prerequisite 1:	Smart Location
Prerequisite 2:	Imperiled Species & Ecological Communities Conservation
Prerequisite 3:	Wetland & Water Body Conservation
Prerequisite 4:	Agricultural Land Conservation
Prerequisite 5:	Floodplain Avoidance
Neighborhood Pattern and Design (NPD)	
Prerequisite 1:	Walkable Streets
Prerequisite 2:	Compact Development
Prerequisite 3:	Connected & Open Community
Green Infrastructure and Buildings (GIB)	
Prerequisite 1:	Certified Green Building
Prerequisite 2:	Minimum Building Energy Efficiency
Prerequisite 3:	Construction Activity Pollution Prevention

Smart Location and Linkages

Prerequisite 1: Smart Location

Locate the project on a site served by existing water and wastewater infrastructure or located the project within a legally adopted, publicly owned, planned water and wastewater service area, and provide new water and wastewater infrastructure for the project.

Prerequisite 2: Imperiled Species and Ecological Communities Conservation

Confirm with the state Natural Heritage Program and state Fish and wildlife agencies that neither threatened or endangered species listed under the federal Endangered Species Act, the state's endangered species act, or species or ecological communities classified by NatureServe as GH, G1 or G2 have been or are likely to be found on the project site because of the presence of suitable habitat and nearby occurrences.

Prerequisite 3: Wetland and Water Body Conservation

Confirm that the project is located on a site that does not include any wetlands, water bodies, or land within 50' of wetlands or within 100' of water bodies.

Prerequisite 4: Agricultural Land Conservation

Confirm that the project is located on a site that is not within a state or locally designate agricultural preservation district and confirm that the location of the project development's footprint does not disturb prime soils, unique soils, or soils of state significance as identified in a state Natural Resources Conservation Service soil survey.

Prerequisite 5: Floodplain Avoidance

Confirm that the site does not contain any land within a 100-year high-or moderate-risk floodplain as defined and mapped by the Federal Emergency Management Agency (FEMA) or a state or local floodplain management agency, whichever is more recent.

Neighborhood Pattern and Design

Prerequisite 1: Walkable Streets

- 90% of new building frontage, a principal functional entry on the front façade faces a public space, such as a street, square, park, paseo, or plaza, but not a parking lot, and is connected to sidewalks or equivalent provisions for walking. The square, park, or plaza must be at least 50′ wide at a point perpendicular to each entry.
- At least 15% of existing and new street frontage within and bordering the project has a minimum building-height-to-street-width of 1:3 (minimum of 1 foot of building height for every 3′ of street width)
  - Non-motorized rights-of-way may be counted toward the 15% requirement, but 100% of such spaces must have a minimum building-height-to-street-width ratio of 1:1
  - Projects with bordering street frontage must meet only their proportional shard of the height-to-width ratio
  - Street frontage is measured in linear feet
  - Building height is measured to eaves or the top of the roof for a flat-roof structure, and street width is measured façade. For block frontages with multiple heights and/or widths, use average heights or widths weighted by each segment's linear share of the total block distance.
  - Alleys and driveways are excluded
- Continuous sidewalks or equivalent all-weather provisions for walking are provided along both sides of 90% of streets or frontage within the project, including the project side of streets bordering the projects. New sidewalks, whether adjacent to streets or not, must be at least 8′ wide on retail or mixed-use blocks and at least 4′ wide on all other blocks. Equivalent provisions for walking include woonerfs and all-weather-surface footpaths. Alleys, driveways, and reconstructed existing sidewalks are excluded from these calculations
- No more than 20% of the street frontages within the project are faced directly by garage and service bay openings.

Prerequisite 2: Compact Development

Subject to LEED ND's mixed-use building calculation

- Build any residential components of the project at a density of 12 dwelling units per acre of buildable land available for residential uses.
- Build any non-residential components of the project at a density of 0.80 FAR or greater of buildable land for nonresidential uses.
- Density calculations include all planned and existing buildings within the project boundary, excluding those portions of parking structures devoted exclusively to parking.

Prerequisite 3: Connected and Open Community

For projects adjacent to the project boundary, incorporate at least one through-street and/or non-motorized right-of-way intersecting or terminating at the project boundary at least every 800′ or at existing abutting street intervals and intersections, whichever is the shortest distance.

Green Infrastructure and Buildings

Prerequisite 1: Certified Green Building

Design, construct, or retrofit one whole building within the project to be certified through LEED for New Construction, LEED for Existing Buildings: Operations & Maintenance, LEED for Homes, LEED for Schools, LEED for Retail: New Construction, or LEED for Core and Shell, or through a green building rating system requiring review by independent, impartial, third-party certifying bodies as defined by ISO/IEC 17021.

Prerequisite 2: Minimum Building Energy Efficiency

Demonstrate that 90% of the building floor area (rounded up to the next whole building) of all non-residential buildings, mixed-use buildings, and multiunit residential buildings 4-stories or more constructed as part of the project or undergoing major renovations as part of the project achieve an average of 10% improvement over ANSI/ASHRAE/IESNA Standard 90.1-2007 (with errata but without addenda) Buildings undergoing major renovations must demonstrate an average of 5% improvement over ANSI/ASHRAE/IESNA Standard 90.1-2007.

Prerequisite 2: Minimum Building Water Efficiency

Indoor water usage in new buildings and buildings undergoing major renovations as part of the project (non-residential buildings, mixed-use buildings, and multiunit residential buildings 4-stories) must be an average 20% less than in baseline buildings.

For new single-family residential buildings and new multiunit residential buildings three stories or fewer, 90% of buildings must use a combination of fixtures that would earn 3 points under LEED for Homes 2008 Credit 3, Indoor Water Use.

Prerequisite 3: Construction Activity

Pollution Prevention. Create and implement an erosion and sedimentation control plan for all new construction activities associated with the project. The plan must incorporate practices such as phasing, seeding, grading, mulching, filter socks, stabilized site entrances, preservation of existing vegetation, and other best management practices (BMP's) to control erosion and sedimentation in runoff from the entire project site during construction. The plan must list the BMP's employed and describe how they accomplish the following objectives:

- Prevent loss of soil during construction by stormwater runoff and/or wind erosion, including but not limited to stockpiling of topsoil for reuse.
- Prevent sedimentation of any affected stormwater conveyance systems or receiving streams.
- Prevent polluting the air with dust and particulate matter.

The erosion and sediment control plan must describe how the project team will do the following:

- Preserve vegetation and mark clearing limits
- Establish and delineate construction access
- Control flow rates
- Install sediment controls
- Stabilize soils
- Protect slopes
- Protect drain inlets
- Stabilize channels and outlets
- Control pollutants
- Control dewatering
- Maintain the BMP's
- Manage the erosion and sedimentation control plan

The BMP's must be selected from the Washington State Department of Ecology's Stormwater management Manual for Western Washington, Volume II, Construction Stormwater Pollution Prevention (2005 edition), or a locally approved equivalent, whichever is more stringent, and must comply with all federal, state, and locally erosion and sedimentation control regulations.

LEED-ND Project Scorecard

To verify that the Downtown District is a sustainable redevelopment and could achieve LEED-Neighborhood Development (LEED-ND) certification if pursued, the following scorecard was prepared to summarize the prerequisites, mandatory and optional requirements that can be potentially met in the Downtown Community Plan and Design Guidelines. LEED-ND can be used as a reference guide for development.

Yes	Maybe	No	Project Totals (Certification Estimates)	Possible Points
7	16	4	Smart Locations & Linkages	27
18	12	14	Neighborhood Pattern & Design	44
14	7	8	Green Infrastructure & Buildings	29
2	4	0	Innovation & Design Process	6
1	2	3	Regional Priority Credit	6
42	41	29		112

Certified: 40-49 points, **Silver:** 50-59 points, **Gold:** 60-79 points, **Platinum:** 80+ points

Yes	Maybe	No	Smart Location & Linkage (SLL)		27 Points Possible
Y			Prereq 1	Smart Location	Y
Y			Prereq 2	Imperiled Species & Ecological Communities Conservation	Y
Y			Prereq 3	Wetland & Water Body Conservation	Y
Y			Prereq 4	Agricultural Land Conservation	Y
Y			Prereq 5	Floodplain Avoidance	Y
5	5		Credit 1	Preferred Locations	10
		2	Credit 2	Brownfields Redevelopment	2
	7		Credit 3	Locations with Reduced Automobile Dependence	7
	1		Credit 4	Bicycle Network & Storage	1
	2	1	Credit 5	Housing & Jobs Proximity	3
1			Credit 6	Steep Slope Protection	1
1			Credit 7	Site Design for Habitat or Wetland & Water Body Conservation	1
		1	Credit 8	Restoration of Habitat or Wetlands & Water Bodies	1
	1		Credit 9	Long-Term Conservation Management of Habitat or Wetlands & Water Bodies	1
7	16	4			27

Yes	Maybe	No	Neighborhood Pattern & Design (NPD)		44 Points Possible
Y			Prereq 1	Walkable Streets	Y
Y			Prereq 2	Compact Development	Y
Y			Prereq 3	Connected & Open Community	Y
6	6		Credit 1	Walkable Streets	12
4	2		Credit 2	Compact Development	6
2	2		Credit 3	Mixed use Neighborhood Centers	4
		7	Credit 4	Mixed-Income Diverse Communities	7
	1		Credit 5	Reduced Parking Footprint	1
		2	Credit 6	Street network	2
		1	Credit 7	Transit Facilities	1
		2	Credit 8	Transportation Demand Management	2
1			Credit 9	Access to Civic & Public Space	1
		1	Credit 10	Access to Recreation Facilities	1
1			Credit 11	Visitability and Universal Design	1
	1	1	Credit 12	Community Outreach & Involvement	2
1			Credit 13	Local Food Production	1
2			Credit 14	Tree-Lined & Shaded Streets	2
1			Credit 15	Neighborhood Schools	1
18	12	14			44

Yes	Maybe	No	Green Infrastructure & Buildings (GIB)		29 Points Possible
Y			Prereq 1	Certified Green Building	Y
Y			Prereq 2	Minimum Building Energy Efficiency	Y
Y			Prereq 3	Minimum Building Water Efficiency	Y
Y			Prereq 4	Construction Activity Pollution Prevention	Y
5			Credit 1	Certified Green Buildings	5
1	1		Credit 2	Building Energy Efficiency	2
	1		Credit 3	Building Water Efficiency	1
1			Credit 4	Water-Efficient Landscaping	1
		1	Credit 5	Existing Building Reuse	1
		1	Credit 6	Historic Resource Preservation & Adaptive Use	1
1			Credit 7	Minimized Site Disturbance in Design & Construction	1
3	1		Credit 8	Stormwater Management	4
1			Credit 9	Heat Island Reduction	1
		1	Credit 10	Solar Orientation	1
	1	2	Credit 11	On-Site Renewable Energy Sources	3
		2	Credit 12	District Heating & Cooling	2
1			Credit 13	Infrastructure Energy Efficiency	1
1	1		Credit 14	Wastewater Management	2
	1		Credit 15	Recycle Content in Infrastructure	1
	1		Credit 16	Solid Waste Management Infrastructure	1
		1	Credit 17	Light Pollution Reduction	1
14	7	8			29

Yes	Maybe	No	Innovation & Design Process		6 Points Possible
1			Credit 1.1	Innovation & Exemplary Performance	1
	1		Credit 1.2	Innovation & Exemplary Performance	1
	1		Credit 1.3	Innovation & Exemplary Performance	1
	1		Credit 1.4	Innovation & Exemplary Performance	1
	1		Credit 1.5	Innovation & Exemplary Performance	1
1			Credit 2	LEED Accredited Professional	1
2	4	0			6

Yes	Maybe	No	Regional Priority Credit		6 Points Possible
		1	Credit 1.1	SLL c5 (2 points) - Housing & Jobs Proximity	1
	1		Credit 1.2	NPD c3 (2 points) - Mixed use Neighborhood Centers	1
		1	Credit 1.3	NPD c4 (4 points) - Mixed-Income Diverse Communities	1
		1	Credit 1.4	NPD c6 - Street Network	1
1			Credit 1.5	GIB c4 - Water-Efficient Landscaping	1
	1		Credit 1.6	GIB c8 (3 points) - Stormwater Management	1
1	2	3			6

6.3 CALGREEN REQUIREMENTS COMPARED TO LEED FOR COMMERCIAL PROPERTIES (LEED-BDC)

CALGreen Non-Residential comparison to LEED for Building Design & Construction 2009

Introduction

In January 2010, California adopted the first statewide mandatory green building code in the country. In January 2011, the California Green Building Standards Code (or CALGreen) will go into effect. The new code establishes minimum green building standards for most new construction projects.

Purpose

The purpose of this document is to provide users a quick reference between CALGreen and the rating systems used in LEED for Building Design and Construction. This document does not provide extensive analysis of the similarities or differences between the rating systems or CALGreen. For full information on CALGreen see: www.bsc.ca.gov/CALGreen, for more information on LEED see: www.usgbc.org.

Verification

CALGreen is part of the California Building Standards Code and is enforced by local jurisdictions and building officials (see CALGreen Chapter 1). LEED is a voluntary rating system that is interpreted by its author, the U.S. Green Building Council, and applications are reviewed by the Green Building Certification Institute. Some California local jurisdictions have local ordinances that require use of LEED for some commercial buildings.

Legend & Notes

	CALGreen	Note
Black	Mandatory Measure	This will be required in all jurisdictions.
Blue	Tier 1 & 2 Prerequisite	If a Tier is adopted, this will be a mandatory measure in that jurisdiction.
Green	Elective Measure	If a Tier is adopted, a set number of elective measures must be met, but the choice of measures is up to the applicant. Separately, local jurisdictions may make specific elective measures mandatory at their discretion. Tier requirements and the full text of CALGreen measures can be found on the Building Standards Commission website.
"Earns Credit / Points in LEED"		Indicates if meeting the required CALGreen measure also meets a prerequisite or earns point(s) for the related measure in LEED. "Maybe" indicates that the CALGreen measure meets part but not all of the comparable LEED prerequisite or credit. key: n/a = not applicable, Yes Maybe No

LEED	Note
Prerequisite	A project must meet all LEED prerequisites to qualify for any level of LEED certification.
n/a	
Credit	Different LEED measures are worth varying numbers of LEED points. Higher point totals are required to meet Silver, Gold and Platinum levels of certification. LEED credits are described in the LEED reference guide.
"Meets CALGreen"	Indicates whether completing the GPF prerequisite or point meets the requirements of the related CALGreen measure. "Maybe" indicates that the LEED measure meets part but not all of the comparable CALGreen measure. key: n/a = not applicable, Yes Maybe No

CALGreen Non-Residential comparison to LEED for Building Design & Construction 2009

version 1.0, September 1, 2010

CALGreen Non-residential Building Code				LEED Building Design & Construction 2009 Rating System			
CALGreen Section		CALGreen Requirements Summary	Earns LEED Credit/Pts	LEED Credit		LEED Requirements Summary	Meets CALGreen
Mandatory measures				**Comparable LEED credits & prerequisites**			
5.1	Planning and Design			Sustainable Sites			
5.106.1	Storm water pollution prevention (SWPP) plan	All projects must have a SWPPP plan that meets State National Pollution Discharge Elimination System (NPDES).	Y	SSp1	Construction Activity Pollution Prevention	Prerequisite: All projects must have a SWPPP plan that meets State NPDES.	Y
5.106.4	Bicycle parking	Provide bike racks for 5% of projected visitors within 200' of building entrance and secure bicycle parking for 5% of motorized parking capacity.	N	SS 4.2	Bicycle Storage & Changing Rooms	Provide bike parking for 5% of all building users within 200 yards of building entrance, plus showers and changing rooms for 0.5% of FTE's.	M
5.106.5	Designated parking	Provide stall marking for low-emitting, fuel efficient, and carpool/van pool vehicles; approximately 8% of total spaces.	M	SS 4.3	Low Emitting & Fuel Efficient Vehicles	Provide preferred parking and signage for low-emitting vehicles for 5% of spaces; alternately provide alternative-fuel stations, vehicles, or vehicle-sharing.	N
5.106.8	Light pollution reduction	Exterior lighting power density limited by exterior lighting zone to California Energy Code limits. Contain lighting within each source. No more than .01 horizontal footcandles 15 beyond site.	N	SS 8	Light Pollution Reduction	Interior lighting automatic reduction / shut-off overnight; exterior lighting power density limited by exterior lighting zone to IESNA 90.1-2007 limits. Horizontal & vertical footcandle limits at property line.	Y
5.106.10	Grading and paving	Grading and paving must keep surface water from entering buildings, and be shown on plans.	n/a		none		n/a
5.2	Energy Efficiency			Energy and Atmosphere			
5.201	Energy efficiency (minimum standard)	Meet California Energy Code (Title 24, Part 6-2008).	N	EAp2	Minimum Energy Performance	Prerequisite: Minimum 10% reduction compared to Title 24-2005, Title-24-2008, or ASHRAE 90.1-2007.	Y

CALGreen Non-Residential comparison to LEED for Building Design & Construction 2009

version 1.0, September 1, 2010

CALGreen Non-residential Building Code				LEED Building Design & Construction 2009 Rating System			
CALGreen Section		CALGreen Requirements Summary	Earns LEED Credit/Pts	LEED Credit		LEED Requirements Summary	Meets CALGreen
5.3	Water Efficiency and Conservation			Water Efficiency			
5.303.1.1	Water meters: buildings over 50,000 sq. ft.	Separate submeters required for individual tenant spaces projected to consume more than 100 gal/day.	n/a		none		n/a
5.303.1.2	Water meters: excess consumption	Submeter buildings or individual tenant spaces projected to consume more than 1,000 gal/day.	n/a		none		n/a
5.303.2	Indoor water use: 20% savings	Reduce overall use of potable water within the building by 20% for showerheads, lavatories, kitchen faucets, wash fountains, water closets, and urinals.	M	WEp1	Water Use Reduction	Prerequisite: Minimum 20% water use reduction for lavatories, kitchen faucets, water closets, urinals, pre-rinse spray valves, and residential showers.	M
5.303.2.1	Multiple showerheads serving one shower	Multiple showerheads in any single shower shall equal the maximum flow rate of a single showerhead.	Y	WE p1	Water Use Reduction	Water use of a residential shower compartment is measured in total for each 2500 sq. in. of floor area.	M
5.303.4	Wastewater reduction	Reduce generation of wastewater by 20% through installation of water-conserving fixtures meeting the criteria established in 5.303.2 or utilizing non-potable water systems.	N	WE 2	Innovative Wastewater Technologies	Reduce generation of wastewater by 50% or provide on-site wastewater treatment to tertiary standards.	Y
5.303.6	Plumbing fixture standards	High-efficiency fixtures and fittings must meet specific referenced standards.	n/a		none		n/a
5.304.1	Outdoor water use: Water budget	Water consumption in landscape irrigation must meet local water efficient landscape ordinance or CA Model Water Efficient Landscape Ordinance (30% reduction in ETo times landscape area).	N	WE 1	Water Efficient Landscaping	50% reduction compared to average water use for irrigation.	Y
5.304.2	Outdoor potable water use	Submeter landscaping separately where landscaping covers 1,000-5,000 sq. ft. (over 5,000 sq. ft. already required.)	n/a		none		n/a
5.304.3	Irrigation controllers	Provide weather or soil moisture based controllers that automatically adjust in response to plants' needs as weather conditions change.	M		Smart controllers would contribute to WE 1.		M
5.4	Material Conservation and Resource Efficiency			Materials & Resources			
5.407.1	Weather protection	Protect building envelope from irrigation sprinkler spray; weather protect entries and openings.	n/a		none		n/a
5.407.2	Moisture control	Prevent irrigation spray on structures and design entries and openings to prevent water intrusion.	n/a		none		n/a
5.408.1-2	Construction waste diversion and management plan	Establish a construction waste management plan or meet local ordinance, whichever is more stringent.	M	MR 2	Construction Waste Management	Develop and implement a construction waste management plan that identifies the materials to be diverted from disposal and how.	M
5.408.3	Construction waste reduction, disposal and recycling	Recycle and/or salvage for reuse a minimum of 50% of non-hazardous construction and demolition debris.	Y	MR 2	Construction Waste Management	Recycle and/or salvage for reuse a minimum of 50% of non-hazardous construction and demolition debris.	Y
5.408.4	Excavated soil and land clearing debris	100% of trees, stumps, rocks and associated vegetation and soils to be reused or recycled.	n/a		none	Soil and land clearing debris not counted in LEED MR 2 calculation	N
5.410.1	Recycling by occupants	Provide areas for the depositing, storage, and collection of non-hazardous materials for recycling.	Y	MRp1	Storage Collection of Recyclables	Prerequisite: Provide areas for the depositing, storage, and collection of non-hazardous materials for recycling.	Y
5.410.2	Commissioning	For new buildings 10,000 square feet and over, building commissioning shall be included in the design and construction of the building project to verify that the building systems and components meet the owner's project requirements.	M	EAp1	Fundamental Commissioning	Prerequisite: Verify that the project's energy-related systems are installed, calibrated, and perform according to the owner's project requirements, basis of design, and construction documents. Commissioning agent must be independent of design team.	Y
5.410.3	Testing and adjusting	Testing and adjusting of systems shall be required for buildings less than 10,000 square feet.	N	EAp1	Fundamental Commissioning	Prerequisite: Fundamental Commissioning is required for all projects, regardless of size.	Y

CALGreen Non-Residential comparison to LEED for Building Design & Construction 2009

version 1.0, September 1, 2010

CALGreen Non-residential Building Code				LEED Building Design & Construction 2009 Rating System			
CALGreen Section		CALGreen Requirements Summary	Earns LEED Credit/Pts	LEED Credit		LEED Requirements Summary	Meets CALGreen
5.5	Environmental Quality			Indoor Environmental Quality			
5.503.1	Fireplaces and woodstoves	Install only direct-vent or sealed-combustion appliances; comply with US EPA Phase II limits.	n/a		none		n/a
5.504.3	Covering of duct openings and protection of mechanical equipment during construction	Cover duct openings and protect mechanical equipment during construction.	M	EQ 3.1	Construction Indoor Air Quality Management Plan	Meet SMACNA guidelines for Occupied Buildings Under Construction, protect materials from moisture damage, protect return air grills.	Y
5.504.4.1	Finish material pollutant control: Adhesives, sealants, and caulks	Comply with VOC limits in SCAQMD Rule 1168 VOC limits and California Code of Regulations Title 17 for aerosol adhesives.	Y	EQ 4.1	Low-Emitting Materials: Adhesives and Sealants	Adhesives and Sealants meet SCAQMD Rule 1168 VOC limits, aerosol adhesives meet Green Seal standard GS-36.	Y
5.504.4.3	Finish material pollutant control: Paints and coatings	Comply with VOC limits in the Air Resources Board Architectural Coatings Suggested Control Measure and California Code of Regulations Title 17 for aerosol paints.	Y	EQ 4.2	Low-Emitting Materials: Paints and Coatings	Architectural paints and coatings meet Green Seal standard GS-11, anti-corrosive paints meet Green Seal standard GC-03, other coatings meet VOC limits in SCAQMD Rule 1113.	M
5.504.4.4	Finish material pollutant control: Carpet systems	Carpet shall meet the requirements of one of the following: 1. Carpet and Rug Institute's Green Label Plus Program 2. California Department of Public Health Standard Practice for the testing of VOCs (Specification 01350) 3. NSF/ANSI 140 at the Gold level 4. Scientific Certifications Systems Sustainable Choice Carpet cushion shall be CRI Green Label. Carpet adhesive shall meet a VOC limit of 50 g/L.	M	EQ 4.3	Low-Emitting Materials: Flooring Systems	All carpet installed must meet Carpet and Rug Institute's Green Label Plus program. Carpet cushion shall meet the requirements of the Carpet and Rug Institute Green Label program. Carpet adhesive shall meet the requirements of EQ 4.1.	Y
5.504.4.5	Composite wood products	Meet CARB Air Toxics Control Measure for Composite Wood.	M	EQ 4.4	Low-Emitting Materials: Composite Wood	Composite wood and agrifiber products must contain no added urea-formaldehyde resins.	Y
5.504.4.6	Finish material pollutant control: Resilient flooring systems	For 50% of floor area receiving resilient flooring, install resilient flooring complying with the VOC-emission limits defined in the 2009 Collaborative for High Performance Schools (CHPS) criteria or certified under the Resilient Floor Covering Institute (RFCI) FloorScore program.	N	EQ 4.3	Low-Emitting Materials: Flooring Systems	All hard surface flooring (vinyl, linoleum, laminate, wood, ceramic, and/or rubber) must be FloorScore certified.	Y
5. 504.5.3	Filters	In mechanically ventilated buildings, provide regularly occupied areas of the building with air filtration media for outside and return air prior to occupancy that provides at least a Minimum Efficiency Reporting Value (MERV) of 8.	N	EQ 5	Indoor Chemical and Pollutant source Control	In mechanically ventilated buildings, provide MERV 13 filters; employ walk-off mats or grills at least ten feet long at regularly used building entrances; exhaust spaces where hazardous gases or chemicals may be present; provide containment where chemical concentrate mixing occurs.	Y
5.504.7	Environmental tobacco smoke (ETS) control	Where outdoor areas are provided for smoking, prohibit smoking within 25 feet of building entries, outdoor air intakes and operable windows and in buildings.	M	EQp2	Environmental Tobacco Smoke (ETS) control	Prerequisite: Prohibit on-property smoking within 25 feet of entries, outdoor air intakes and operable windows. All buildings must be non-smoking or provided designated smoking areas.	Y
5.505.1	Indoor moisture control	Meet or exceed Ventilation and Exterior Wall requirements in California Building Code.	n/a		none		n/a
5.506.1	Outside air delivery	Meet Ventilation requirements in California Energy Code or local code, whichever is more stringent.	Y	EQp1	Minimum Indoor Air Quality Performance	Prerequisite: Meet requirements of ASHRAE standard 62.1-2007, Ventilation for Acceptable Indoor Air Quality.	Y
5.506.2	Carbon dioxide monitoring	For buildings with demand control ventilation, install systems in accordance with California Energy Code.	N	EQ 1	Outdoor Air Delivery Monitoring	Monitor CO2 concentrations within all densely occupied spaces; provide a direct airflow measurement device for mechanical ventilation systems serving non-densely occupied spaces.	M

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CALGreen Section		CALGreen Requirements Summary	Earns LEED Credit/Pts	LEED Credit		LEED Requirements Summary	Meets CALGreen
5.507.4	Acoustical control	Employ building assemblies and components with Sound Transmission Coefficient (STC) values determined in accordance with ASTM E90 and ASTM E413.	n/a		none		n/a
5.507.4.1	Exterior noise transmission	Wall and roof-ceiling assemblies shall have an STC of at least 50, and exterior windows shall have a minimum STC of 30 for noisy building locations.	n/a		none		n/a
5.507.4.2	Interior sound	Wall and floor-ceiling assemblies separating tenant spaces and tenant spaces and public places shall have an STC of at least 40.	n/a		none		n/a
5.508.1	Ozone depletion and greenhouse gas reductions	Do not install equipment that contains CFCs or Halons.	Y N	EAp3 EA 4	Refrigerant Management Enhanced Refrigerant Management	Prerequisite: Do not install equipment with CFCs. Credit: do not install equipment that contains Halons, HFCs & HCFCs based on combined ozone-depletion and global-warming potential.	M Y

Tier 1 additional prerequisites				Comparable LEED credits			
5.1	Planning and Design - all measures below plus one elective			Sustainable Sites			
A5.106.5.1.1	Designated parking	Tier 1: Provide stall marking for 10% of total spaces.	M	SS 4.3	Low Emitting Vehicles	Provide preferred parking for 5% of spaces.	N
A5.106.11.2.1	Cool roof	Tier 1: Use roofing material with minimum solar reflectance index (SRI) of between 10-64 depending on climate zone & roof slope.	N	SS 7.2	Heat Island Effect: Roof	Use roofing material with minimum SRI 29 steep slope, 78 low slope, or use vegetated roof.	M
5.2	Energy Efficiency - all measures below			Energy and Atmosphere			
A5.601.2.2	Energy Efficiency: Performance Approach	Tier 1: 15% reduction compared to Title 24, Part 6-2008.	Y	EA 1	Optimize Energy Performance	15% reduction compared to Title 24-2005, Title 24-2008, or ASHRAE.	M
5.3	Water Efficiency and Conservation - all measures below plus one elective			Water Efficiency			
A5.303.2.3.1	Indoor water use	Tier 1: 30% reduction in potable water consumption.	Y	WE 3	Water Use Reduction	30% reduction in potable water consumption.	Y
A5.304.4.1	Potable water reduction	Tier 1: 40% reduction in landscape water use.	N	WE 1	Water Efficient Ldscp	50% reduction in landscape water use.	Y
5.4	Material Conservation - all measures below plus one elective			Materials and Resources			
A5.405.4	Recycled content	Tier 1: 10% of total materials cost.	Y	MR 4	Recycled content	10% of total materials cost.	Y
A5.408.3.1	Enhanced construction waste reduction	Tier 1: 65% diversion rate.	N	MR 2	Construction Waste Management	75% diversion rate.	Y
5.5	Environmental Quality - all measures below plus one elective			Indoor Environmental Quality			
A5.504.4.7	Resilient flooring systems	Tier 1: 80% of resilient flooring FloorScore certified.	N	EQ 4.3	Flooring Systems	All hard surface flooring must be FloorScore certified.	Y
A5.504.4.8	Thermal insulation	Tier 1: Comply with VOC limits in 2009 CHPS criteria.	n/a		none		n/a

Tier 2 additional prerequisites (Tier 1 prerequisites also apply)				Comparable LEED credits			
5.1	Planning and Design - all measures below plus three electives						
A5.106.5.1.2	Designated parking	Tier 2: Provide stall marking for 12% of total spaces.	N	SS 4.3	Low Emitting Vehicles	Provide preferred parking for 5% of spaces.	Y
A5.106.11.2.2	Cool roof	Tier 2: Minimum SRI 20 steep slope, 78 low slope.	Y	SS 7.2	Heat Island Effect: Roof	Minimum SRI 29 steep slope, 78 low slope, or vegetated roof.	M
5.2	Energy Efficiency - all measures below			Energy and Atmosphere			
A5.601.3.3	Energy Efficiency: Performance Approach	Tier 2: 30% reduction compared to Title 24, Part 6-2008.	Y	EA 1	Optimize Energy Performance	305% reduction compared to Title 24-2005, Title 24-2008, or ASHRAE.	M
5.3	Water Efficiency and Conservation - all measures below plus three electives			Water Efficiency			
A5.303.2.3.2	Indoor water use	Tier 2: 35% reduction in potable water consumption.	M	WE 3	Water Use Reduction	35% reduction in potable water consumption.	M
A5.304.4.2	Potable water reduction	Tier 2: 45% reduction in landscape water use.	N	WE 1	Water Efficient Ldscp	50% reduction in landscape water use.	Y
5.4	Material Conservation - all measures below plus three electives			Materials and Resources			
A5.405.4.1	Recycled content	Tier 2: 15% of total materials cost.	Y	MR 4	Recycled content	10% or 20% of total materials cost.	Y
A5.408.3.1	Enhanced construction waste reduction	Tier 2: 80% diversion rate.	Y	MR 2	Construction Waste Management	75% diversion rate.	N
5.5	Environmental Quality - all measures below plus three electives			Indoor Environmental Quality			
A5.504.4.7.1	Resilient flooring systems	Tier 2: 90% of resilient flooring FloorScore certified.	N	EQ 4.3	Flooring Systems	All hard surface flooring must be FloorScore certified.	Y
A5.504.4.8.1	Thermal insulation	Tier 2: No-added formaldehyde requirement in addition to Collaborative for High Performance Schools (CHPS).	n/a		none		n/a

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CALGreen Section		CALGreen Requirements Summary	Earns LEED Credit/Pts	LEED Credit		LEED Requirements Summary	Meets CALGreen
Elective measures				**Comparable LEED credits**			
5.1	Planning and Design (choose one for Tier 1, three for Tier 2)			Sustainable Sites			
A5.103.1	Community connectivity	Site is within 1/2 mile of 10 basic services.	N	SS 2	Development density and community connectivity	Previously developed site and in area of 60,000 sq.ft./acre density, or within walkable 1/2 mile of residential zone and 10 basic services.	Y
A5.103.2	Brownfield or greyfield redevelopment	Site contaminated per Phase 2 Assessment, or previously developed site with 50% impervious area.	M	SS 3	Brownfield redevelopment	Site contaminated per Phase 2 Assessment.	Y
A5.104.1	Site preservation	Provide 25% more open space than required by zoning, or equal to bldg footprint, or 20% of total site.	Y	SS 5.2	Maximize open space	Provide 25% more open space than required, or equal to bldg footprint, or 20% of total site.	Y
A5.105.1.1	Reuse of existing building structure	Maintain 75% of existing structure and envelope.	Y	MR 1.1	Building reuse	Maintain 75% of existing structure and envelope.	Y
A5.105.1	Reuse of existing nonstructural elements	Maintain 50% of non-structural elements.	Y	MR 1.2	Building reuse	Maintain 50% of non-structural elements.	Y
A5.105.1	Deconstruction and salvage	Salvage items in good condition; record amount salvaged.	M		Contributes to MR 2.		N
A5.106.2.1	Storm water runoff rate and quantity	No net increase in runoff rate and quantity, or 25% decrease for sites over 50% impervious.	Y	SS 6.1	Stormwater quantity control	No net increase in runoff rate and quantity, or 25% decrease for sites over 50% impervious.	Y
A5.106.2.2	Storm water runoff quality	Treat 85th percentile 24 hour rain event with BMPs.	M	SS 6.2	Stormwater quality control	Treat 90% of average annual rainfall to remove 80% of Total Suspended Solids using BMPs.	M
A5.106.3	Low impact development	Manage 40% of average annual rainfall with LID strategies.	N	SS 6.2	Stormwater quality control	See above.	M
A5.106.4	Bicycle parking and changing rooms	Provide changing rooms with 1 shower per 200 occupants.	Y	SS 4.2	Bicycle parking	Provide bike parking for 5% of all building users, plus showers and changing rooms for 0.5% of FTE's.	M
A5.106.5.3	Electric vehicle charging	Provide capacity and conduit for future vehicle charging outlets approx. 1 per 50 parking spaces.	N	SS 4.3	Low Emitting & Fuel Efficient Vehicles	Provide charging devices for 3% of total vehicle parking capacity of the site.	Y
A5.106.6	Parking capacity	Do not exceed local zoning minimum.	Y	SS 4.4	Parking capacity	Do not exceed local zoning minimum.	Y
A5.106.7	Exterior wall shading	Shade 20% of east-, west-, and south walls to 20' or us SRI >25 for 75% of opaque area.	M		Avoided cooling load contributes to EA 1.		n/a
A5.106.9	Building orientation	Long sides face north/south; protect from wind, snow, etc.	M		Orientation contributes to EA 1.		n/a
A5.106.11.1	Heat island effect: hardscape alternatives	Shade 50% of hardscape or put 50% of parking underground.	Y	SS 7.1	Heat island effect: non-roof	Shade 50% of hardscape or put 50% of parking underground.	Y
5.2	Energy Efficiency (prescriptive approach)			Energy and Atmosphere			
A5.204.1	ENERGY STAR equipment and appliances	All equipment and appliances to be ENERGY STAR if applicable.	n/a		none		n/a
A5.204.2	Energy monitoring	Provide submetering to record data for each major energy system.	M	EA 5	Measurement & Verification	Develop an M&V plan for building operations, including instrumentation and metering equipment, and implement for at least 1 year post-occupancy.	M
A5.204.3	Demand response	Provide pre-programmed demand response strategies for HVAC systems with DDC and centralized lighting systems.	n/a		none		n/a
A5.211.1	On-site renewable energy	Generate 1% of energy on-site using renewables.	Y	EA 2	Renewable Energy	Generate 1-13% of energy on site with renewables.	Y
A5.211.3	Green power	Participate in renewable energy portfolio program of local utility, if available, that provides minimum 50% renewable power.	N	EA 6	Green power	Purchase Green-e certified renewable energy certificates for 35% of total energy demand.	N
A5.212.1	Reduce energy demand of elevator and escalators	Provide controls to reduce energy demand during part of the day or when no traffic is detected.	n/a		none		n/a
A5.213.1	Steel framing	Design steel framing to avoiding thermal bridging.	n/a		none		n/a
5.3	Water Efficiency and Conservation (choose one for Tier 1, three for Tier 3)			Water Efficiency			
A5.303.2.2	Indoor water use	Voluntary - 40% reduction in potable water consumption.	M	WE 3	Water Use Reduction	40% reduction in potable water consumption.	Y
A5.304.4.4	Potable water reduction	Voluntary - 50% reduction in landscape water use.	Y	WE 1	Water Efficient Ldscp	50% reduction in landscape water use.	Y
A5.304.5	Potable water reduction	Voluntary -Outdoor potable water use elimination.	Y	WE 1	Water Efficient Ldscp	100% reduction in landscape water use.	Y
A5.303.3	Water efficient appliances	Various standards for clothes washers, dishwashers, ice makers, food steamers.	n/a		none		n/a
A.5.303.5	Dual plumbing for recycled water use for toilet flushing	Applicable when recycled water is available.	M		Recycled water use would contribute to WE 3.		n/a
A5.304.6	Construction area restoration	Replant all disturbed landscape areas w/ native plants.	n/a		Native plants would contribute to SS 5.1.		n/a
A5.304.7	Previously developed sites	Restore 50% of previously developed site with native vegetation.	Y	SS 5.1	Protect habitat	Restore greater of 50% of previously developed site or 20% of total site with native vegetation.	Y
A5.304.8	Graywater irrigation system	Graywater system for onsite subsurface irrigation collected from bathtubs, showers, bathroom sinks, and laundry.	M	WE 2	Innovative Wastewater Technologies	Reduce generation of wastewater by 50% or provide on-site wastewater treatment to tertiary standards.	M

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5.4	Material Conservation (choose one for Tier 1, three for Tier 2)			Materials & Resources			
A5.404.1	Advanced wood framing techniques	Use advanced wood framing techniques (must maintain structural and fire resistive integrity).	n/a		none		n/a
A5.405.1	Regional materials	10% of total materials cost harvested or manufactured in California or within 500 miles of project site.	M	MR 5	Regional materials	10% of total materials cost harvested and manufactured within 500 miles of project site.	Y
A5.405.2.1	Certified wood	Standard in development.	M	MR 7	Certified Wood	FSC-certified wood is 50% of total wood cost.	M
A5.405.2.2	Rapidly renewable materials	Materials from plants with a maximum ten-year harvest cycle are 2.5% of total materials cost.	Y	MR 6	Rapidly renewable materials	Materials from plants with a maximum ten-year harvest cycle are 2.5% of total materials cost.	Y
A5.405.3	Reused materials	Salvaged, refurbished, refinished, or reused material is 5% of total materials cost.	Y	MR 3	Reused materials	Salvaged, refurbished, or reused materials are 5% of total materials cost.	Y
A5.405.5	Cement and concrete	Use cement and concrete made with recycled products and/or alternative sources of energy.	n/a		Recycled content would contribute to MR 4.		n/a
A5.406.1	Choice of materials	If comparable, select materials for longevity, reduced maintenance, and recyclability.	n/a		none		n/a
A5.409.1	Life cycle assessment	Select materials assemblies based on life cycle assessment.	n/a		none		n/a
5.5	Environmental Quality (choose one for Tier 1, three for Tier 2)			Indoor Environmental Quality			
A5.504.1.1	Indoor air quality during construction: temporary ventilation	Use fans in openings in building shell producing a minimum of 3 ACH; protect HVAC openings from dust; use MERV 8 filters on return air grills; meet SMACNA Guidelines for Occupied Buildings Under Construction.	Y	EQ 3.1	Construction Indoor Air Quality Management Plan: During Construction	Meet SMACNA guidelines for Occupied Buildings Under Construction, protect materials from moisture damage, protect return air grills.	N
A5.504.1.2	Indoor air quality during construction: additional measures	Use clean temporary generators; protect on-site materials from moisture; store odorous materials off-site and allow VOCs to disperse; sequence installation of high-VOC materials before absorbent materials; clean oil and dust from ducts prior to use.	M	EQ 3.1	Construction Indoor Air Quality Management Plan: During Construction	Meet SMACNA guidelines for Occupied Buildings Under Construction, protect materials from moisture damage, protect return air grills.	N
A5.504.2	Post construction air flush-out	Supply continuous ventilation with all air handling units at maximum outdoor air rate for at least 14 days; occupancy may start after 4 days.	M	EQ 3.2	Construction Indoor Air Quality Management Plan: Before Occupancy	After construction ends, supply a total volume of outdoor air of 14,000 cubic feet per square foot of floor area; occupancy may start after the first 3,500 cubic feet are delivered.	M
A5.504.2.1	IAQ testing	Using test protocols recognized by US EPA, maximum concentrations shall not exceed 9 ppm CO2; 27 ppb Formaldehyde; 50 ug/m3 PM10; 6.5 ug/m3 4-PCH; 300 ug/m3 TVOC.	Y	EQ 3.2	Construction Indoor Air Quality Management Plan: Before Occupancy	Conduct baseline IAQ testing using protocols consistent with the US EPA, maximum concentrations shall not exceed 9 ppm CO2; 27 ppb Formaldehyde; 50 ug/m3 PM10; 6.5 ug/m3 4-PCH; 500 ug/m3 TVOC.	M
A5.504.4.5.1	Early compliance with formaldehyde limits	Meet requirements before dates required by CARB.	M	EQ 4.4	Low-Emitting Materials: Composite Wood	Composite wood and agrifiber products must contain no added urea-formaldehyde resins.	Y
A5.504.4.9	Acoustical ceiling and wall panels	Comply with the VOC-emission limits defined in the 2009 CHPS criteria.	M	EQ 4.6 (Schools only)	Low-Emitting Materials: Ceiling and Wall Panels	All gypsum board, insulation, acoustical ceiling systems and wall coverings must meet the requirements of California Department of Health Services Standard Practice for the Testing of Volatile Organic Emissions.	Y
A5.504.5.1	Entryway systems	Install permanent entryway systems measuring at least six feet in the primary direction of travel.	N	EQ 5	Indoor Chemical and Pollutant Source Control	Among other criteria, employ walk-off mats or grills at least ten feet long at regularly used building entrances.	Y
A5.504.5.2	Isolation of pollutant sources	Exhaust and isolate rooms where activities produce hazardous fumes or chemicals.	M	EQ 5	Indoor Chemical and Pollutant Source Control	Among other criteria, exhaust spaces where hazardous gases or chemicals may be present.	Y
A5.507.1	Lighting controls	Provide task lighting for 90% of building occupants.	Y	EQ 6.1	Controllability of Systems: Lighting	Provide task lighting for 90% of building occupants.	Y
A5.505.1.1.2	Thermal comfort controls	Provide individual thermal comfort controls for at least 50% of building occupants.	Y	EQ 6.2	Controllability of Systems: Thermal Comfort	Provide individual thermal comfort controls for at least 50% of building occupants.	Y
A5.507.1.2	Multi-occupant space lighting and thermal comfort controls	Provide lighting and thermal comfort controls systems for all shared multi-occupant spaces.	Y	EQ 6.1 & 6.2	Controllability of Systems	Provide lighting and thermal comfort controls systems for all shared multi-occupant spaces.	Y
A5.507.2	Daylight	Provide daylit spaces as required for toplighting and sidelighting in the 2007 California Energy Code.	M	EQ 8.1	Daylight and Views: Daylight	At least 75% of spaces achieve daylighting illuminance levels of 25-500 footcandles in clear sky conditions.	Y
A5.507.3	Views	Achieve direct line of sight to the outdoor environment for 90% of all regularly occupied spaces.	Y	EQ 8.2	Daylight and Views: Views	Achieve direct line of sight to the outdoor environment for 90% of all regularly occupied spaces.	Y
A5.508.1.3	HCFCs and HFCs in refrigeration equipment	Install equipment without HCFCs and HFCs.	Y	EA 4	Enhanced Refrigerant Management	Limit use of HFCs & HCFCs based on combined ozone-depletion and global-warming potential.	M

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CALGreen Non-residential Building Code			LEED Building Design & Construction 2009 Rating System			
CALGreen Section	CALGreen Requirements Summary	Earns LEED Credit/Pts	LEED Credit	LEED Requirements Summary		Meets CALGreen
Note: this column is intentionally left blank as there are no CALGreen measures comparable to the remaining LEED measures listed here.			**Additional LEED credits not in CALGreen**			
			Sustainable Sites			
			SS 1	Site selection	Avoid sensitive sites, e.g. farmland, flood plain.	
			SS 4.1	Public transportation access	Locate within 1/2 mile of rail or 1/4 mile of bus lines.	
			Energy & Atmosphere			
			EA 1	Optimize Energy Performance	48% reduction (maximum points).	
			Materials & Resources			
			EA 3	Enhanced commissioning	In addition to EAp1, Commissioning Agent must be independent of design team and has larger scope.	
			Indoor Environmental Quality			
			EQ 2	Increased ventilation	Increase outdoor air ventilation rates at least 30% above the minimum in ASHRAE 62.1-2007.	
			EQ 7.1	Thermal comfort - design	Meet ASHRAE standard 55-2004: Thermal Environmental Conditions for Human Occupancy.	
			EQ 7.2	Thermal comfort - verification	Achieve EQ 7.1 and conduct a thermal comfort survey of building occupants 6-18 months after occupancy; provide a plan for corrective action if dissatisfaction is reported.	

6.4 CALGREEN REQUIREMENTS COMPARED TO LEED FOR RESIDENTIAL PROPERTIES

CALGreen Low-Rise Residential comparison to GreenPoint Rated and LEED for Homes

Introduction

In January 2010, California adopted the first statewide mandatory green building code in the country. In January 2011, the California Green Building Standards Code (or CALGreen) will go into effect. The new code establishes minimum green building standards for most new construction projects.

Purpose

The purpose of this document is to provide users a quick reference between CALGreen and the rating systems used in GreenPoint Rated (GPR) and LEED for Homes. This document does not provide extensive analysis of the similarities or differences between the rating systems or CALGreen. For full information on CALGreen see: www.hcd.ca.gov (search for CALGreen), for GreenPoint Rated see: www.builditgreen.org, for LEED for Homes see: www.usgbc.org.

Verification

CALGreen is part of the California Building Standards Code and is enforced by local jurisdictions and building officials (see CALGreen Chapter 1). GreenPoint Rated and LEED for Homes are voluntary rating systems that are interpreted by their authors, Build it Green and the U.S. Green Building Council respectively, and documentation is reviewed by Build It Green and a LEED for Homes Provider, respectively. Some California local jurisdictions have local ordinances that require use of GPR for residential buildings.

Legend & Notes

	CALGreen	Note
Black	Mandatory Measure	This will be required in all jurisdictions.
Blue	Tier 1 & 2 Prerequisite	If a Tier is adopted, this will be a mandatory measure in that jurisdiction. Tier requirements and the full text of CALGreen measures can be found on the HCD website.
Green	Elective Measure	If a Tier is adopted, a set number of elective measures must be met, but the choice of measures is up to the applicant. Separately, local jurisdictions may make specific elective measures mandatory at their discretion. Tier requirements and the full text of CALGreen measures can be found on the HCD website. Elective measures require interpretation by local officials to be compared to GPR or LEED for Homes.
"Earns Credit or Points in GPR / LEED"		These columns indicate if meeting the required CALGreen measure also meets a prerequisite or earns point(s) for the related measure in either GreenPoint Rated or LEED for Homes. "Maybe" indicates that the CALGreen measure meets part but not all of the comparable GPR or LEED prerequisite or credit. key: n/a = not applicable, Yes Maybe No

GPR	Note
Prerequisite	A project must meet all GPR prerequisites to qualify for any level of GPR certification.
	n/a
Point	Different measures are worth different numbers of green points, with a higher total rating indicating a "greener" home. A minimum number of points overall and within specific categories is required. GPR credits are described in the GreenPoint Rated Manuals.
"Meets CALGreen"	Indicates whether completing the GPR prerequisite or measure meets the requirements of the related CALGreen measure. key: n/a = not applicable, Yes Maybe No

LEED	Note
Prerequisite	A project must meet all LEED prerequisites to qualify for any level of LEED certification.
	n/a
Credit	Different measures are worth different numbers of LEED credits. Higher point totals are required to meet Certified, Silver, Gold and Platinum levels of certification. LEED credits are described in the LEED reference guide.
"Meets CALGreen"	Indicates whether completing the LEED prerequisite or credit meets the requirements of the related CALGreen measure. key: n/a = not applicable, Yes Maybe No

CALGreen Low-Rise Residential comparison to GreenPoint Rated and LEED for Homes

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CALGreen Residential Building Code					GreenPoint Rated Single Family New Home 4.2 - 2008 Rating System			LEED for Homes California (non-Midrise) Rating System		
CALGreen Section		CALGreen Requirements Summary	Earns GPR Cred./ Pts	Earns LEED Cred./ Pts	Measure	Requirements Summary	Meets CALGreen	Credit	Requirements Summary	Meets CALGreen
Mandatory measures					**Comparable GPR credits & prerequisites**			**Comparable LEED credits & prerequisites**		
4.1	Planning and Design				Site, Community Design & Planning			Location & Linkages, Sustainable Sites		
4.106.2	Storm water drainage and retention during construction	Projects which disturb less than one acre of soil and are not part of a larger common plan of development which in total disturbs one acre or more, shall manage storm water drainage during construction, including one or more of retention basins, filtration, or compliance with a storm water management ordinance.	Y	M	Q.1	Mirrors CALGreen 4.106.2 Storm water management during construction.	Y	SS 1.1	Prerequisite: Erosion Control During Construction: do all of the following: stockpile soil for reuse, control runoff, protect sewer inlets, surface waters and hillsides, provide swales.	Y
4.106.3	Surface drainage	The site shall be planned and developed to keep surface water from entering buildings. Construction plans shall indicate how the site grading or drainage system will manage surface water flows.	Y	M	Q.2	Mirrors CALGreen 4.106.3 Design for surface water drainage away from buildings.	Y	ID 2.1	Prerequisite: Part of durability plan.	Y
4.2	Energy Efficiency				HVAC, Building Performance, Renewables			Energy & Atmosphere		
4.201	Energy efficiency (minimum standard)	Meet California Energy Code (Title 24, Part 6).	N	N	J.2	Required: Minimum 15% better than Title 24.	Y	EA 1.1	Prerequisite: Minimum 15% better than Title 24.	Y
4.3	Water Efficiency and Conservation				Landscape, Plumbing			Water Efficiency		
4.303.1	Indoor Water Use Savings	20% savings: either each fixture meets reduced flow rates per Table 4.303.2 or calculation demonstrating building water use reduction per Table 4.303.1. Met fixtures standards in Table 4.303.3. *note: this measure effective July 1, 2011*	Y	Y	G.2-3	Showerheads ≤2.0 Gallons Per Minute (gpm) at 80 psi, Bathroom Faucets ≤ 1.5 gpm at 60psi, Kitchen and Utility Faucets ≤1.8 gpm, Toilets Dual-Flush or ≤1.28 Gallons Per Flush (gpf).	Y	WE 3.1	Showerheads ≤2.0 Gallons Per Minute (gpm), Bathroom Faucets ≤ 2.0 gpm, Toilets Dual-Flush or ≤1.3 Gallons Per Flush (gpf).	N
4.303.2	Multiple showerheads serving one shower	When a single shower is served by more than one showerhead, the combined flow rate shall not exceed the maximum flow rate specified or the shower shall be designed to only allow one shower to operate at a time.	Y	Y	G.2	Showerheads ≤2.0 Gallons Per Minute (gpm) at 80 psi, including requirement for multiple shower heads.	Y	WE 3.1	Showerheads rated per stall, more than 2.0 gpm per stall not allowed.	Y
4.304.1	Irrigation Controllers	Provide weather or soil moisture based controllers that automatically adjust in response to plants' needs as weather conditions change.	Y	Y	C.6.b	System Has Smart (Weather-Based) Controller.	Y	WE 2.1.k	Install a moisture sensor or rain delay controller.	M

CALGreen Low-Rise Residential comparison to GreenPoint Rated and LEED for Homes

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CALGreen Residential Building Code			Earns GPR Cred/ Pts	Earns LEED Cred/Pts	GreenPoint Rated Single Family New Home 4.2 - 2008 Rating System		Meets CALGreen	LEED for Homes California (non-Midrise) Rating System		Meets CALGreen
CALGreen Section		CALGreen Requirements Summary			Measure	Requirements Summary		Credit	Requirements Summary	
4.4	Material Conservation and Resource Efficiency				Foundation, Exterior, Frame & Envelope			Materials & Resources		
4.406.1	Joints and Openings	Openings in the building envelope separating conditioned space from unconditioned space needed to accommodate gas, plumbing, electrical lines and other necessary penetrations shall be protected against rodents.	Y	n/a	Q.4	Mirrors CALGreen 4.406.1 Joints and openings. Annular spaces around pipes, electric cables, conduits, or other opening in plates at exterior walls shall be protected against rodents.	Y		none	n/a
4.408.1	Construction waste reduction of at least 50%	Recycle and/or salvage for reuse a minimum of 50% of the non-hazardous construction and demolition debris, or meet a local construction and demolition waste management ordinance, whichever is more stringent. (Excavated soil and land-clearing debris excluded).	Y	Y	A.2.a	Required: Divert 50% (by weight) of all Construction and Demolition Waste (Including Green Waste and Existing Structures).	Y	MR 3.2	Construction Waste Reduction: divert 25-88% of waste (excluding land clearing and demolition waste), or generate less that 2.5 lbs per sq. ft. of built space.	M
4.408.2	Construction waste management plan	Where a local jurisdiction does not have a construction and demolition waste management ordinance, a construction waste management plan shall be submitted for approval to the enforcing agency.	Y	Y	A.2.a	Required: Pre Construction Debris Recovery Plan.	Y	MR 3.1	Prerequisite: Construction waste management plan and documentation of the diversion rate for construction waste.	Y
4.410.1	Operation and maintenance manual.	An operation and maintenance manual shall be provided to the building occupant or owner, describing: 1. Keeping manual with property 2. O&M instructions for equipment and appliances, drainage, irrigation, etc. 3. Local utility conservation resources 4. Public transportation / carpool options 5. Health benefits of 30-60% relative humidity 6. Landscape water conservation 7. Gutter and downspout maintenance 8. Routine maintenance 9. State solar energy and incentive programs 10. Special inspection records	N	N	N.4.a	Develop a Homeowner Manual of Green Features/Benefits including: 1. Description of green features 2. O&M for green maintenance 3. Instructions for equipment & appliances 4. Recycling opportunities 5. Water & energy use optimization 6. Safety and controls labeling 7. Pest inspection procedure 8. Green pest control, fertilizer, cleaning information 9. Indoor air quality information 10. Gutter and downspout maintenance 11. Landscape maintenance 12. Handling of hazardous chemicals 13. Requirements of CALGreen O&M manual	Y	AE 1.1.a	Prerequisite: Provide a minimum one-hour walkthrough of the home plus an operations and training manual including: 1. Project LEED checklist 2. Project LEED accountability forms 3. Project durability inspection checklist 4. Product manuals for equipment & appliances 5. General energy, water, resource efficiency information 6. O&M guidance for equipment, including irrigation 7. Guidance on cleaning, landscaping, irrigation, etc. 8. Information on "green power"	N
4.5	Environmental Quality				Finishes, Flooring, HVAC			Indoor Environmental Quality		
4.503.1	Fireplaces	Any installed gas fireplace shall be a direct-vent sealed-combustion type. Any installed woodstove or pellet stove shall comply with US EPA Phase II emission limits where applicable. Woodstoves, pellet stoves and fireplaces shall also comply with applicable local ordinances.	Y	N M	Q.5	Mirrors CALGreen 4.503.1 - Gas fireplace shall be a direct-vent sealed combustion type. Woodstove or pellet stove shall comply with US EPA Phase II emission limits.	Y	EQ 2.1 EQ 2.2	Prerequisite: Basic Combustion Venting Measures: sealed combustion or power-vented exhaust. CO detectors required. Credit: Wood and pellet stoves are EPA certified.	N Y
4.504.1	Covering of duct openings and protection of mechanical equipment during construction	At the time of rough installation, or during storage on the construction site and until final startup of the heating and cooling equipment, all duct and other related air distribution component openings shall be covered with tape, plastic, sheet metal or other methods acceptable to the enforcing agency to reduce the amount of dust or debris which may collect in the system.	Y	Y	A.5.a	Construction Environmental Quality Management Plan - Duct openings and other related air distribution component openings shall be covered during construction.	Y	EQ 8.1	Upon installation, seal all permanent ducts and vents to minimize contamination during construction.	Y
4.504.2.1	Adhesives, sealants, and caulks	Adhesives, sealants, and caulks shall comply with local or regional air pollution control or air quality management district rules where applicable, or SCAQMD Rule 1168 VOC limits and Rule 1168 prohibition on the use of certain toxic compounds. Aerosol adhesives shall meet CCR Title 17 section 94507 et seq.	Y	Y	K.4	Use Low-VOC Caulks & Construction Adhesives that meet SCAQMD Rule 1168. Sealants meet SCAQMD Rule 1168. Aerosol adhesives shall meet CCR section 94507.	Y	MR 2.2	Environmentally preferable products: adhesives & sealants meet SCAQMD Rule 1168.	M
4.504.2.2	Paints and coatings	Paints, stains, and coatings shall comply with VOC limits the ARB Architectural Coatings Suggested Control Measure, unless more stringent local limits apply. (See 4.504.2.4 for verification process.)	Y	Y	K.2-3	Use Low-VOC Interior Wall/Ceiling Paints (<50 Grams Per Liter (gpl) VOCs Regardless of Sheen) and Low-VOC Coatings that meet SCAQMD Rule 1113	Y	MR 2.2	Environmentally preferable products: paints meet Green Seal GS-11, GC-03, or SCAQMD Rule 1113 as applicable.	Y
4.504.2.3	Aerosol Paints and Coatings	Aerosol paints and coatings shall meet the Product-Weighted MIR Limits for ROC, other toxic compounds, and ozone depleting substances, in CCR Title 17 section 94520 and 94522 et seq.	n/a	n/a		none	n/a		none	n/a

CALGreen Low-Rise Residential comparison to GreenPoint Rated and LEED for Homes

version 1.0, September 1, 2010

CALGreen Residential Building Code					GreenPoint Rated Single Family New Home 4.2 - 2008 Rating System			LEED for Homes California (non-Midrise) Rating System		
CALGreen Section		CALGreen Requirements Summary	Earns GPR Cred/Pts	Earns LEED Cred/Pts	Measure	Requirements Summary	Meets CALGreen	Credit	Requirements Summary	Meets CALGreen
4.504.3	Carpet systems	All carpet installed in the building interior shall meet the testing and product requirements of one of the following: 1. Carpet and Rug Institute's Green Label Plus Program 2. California Department of Public Health Standard Practice for the testing of VOCs (Specification 01350) 3. NSF/ANSI 140 at the Gold level 4. Scientific Certifications Systems Indoor Advantage Gold	M Y	M	L.3 L.4	Low Emitting Flooring: 50% of total floor area meets relevant criteria (carpet: CRI Green Label Plus, resilient flooring: FloorScore Certified). Mirrors CALGreen 4.504.3-4 All carpet and 50% of resilient flooring is low emitting.	N Y	MR 2.2	Environmentally preferable products: Carpet and pad meets CRI Green Label Plus for 45% or 90% of total floor area.	N
4.504.3.1	Carpet cushion	All carpet cushion installed in the building interior shall meet the requirements of the Carpet and Rug Institute Green Label program.	M Y	M	L.3 L.4	Low Emitting Flooring: 50% of total floor area meets relevant criteria. Mirrors CALGreen 4.504.3-4 All carpet and 50% of resilient flooring is low emitting.	N Y	MR 2.2	See above.	N
4.504.3.2	Carpet adhesive	All carpet adhesive shall meet the requirements of Table 5.504.1. (VOC limit of 50 g/L)	M Y	M	L.3 L.4	Low Emitting Flooring: 50% of total floor area meets relevant criteria. Mirrors CALGreen 4.504.3-4 All carpet and 50% of resilient flooring is low emitting.	Y Y	MR 2.2	Environmentally preferable products: adhesives & sealants meet SCAQMD Rule	Y
4.504.4	Resilient flooring systems	At least 50% of floor area receiving resilient flooring shall comply with the VOC-emission limits defined in the Collaborative for High Performance Schools (CHPS) Low-emitting Materials List or certified under the Resilient Floor Covering Institute (RFCI) FloorScore program.	M Y	M	L.3 L.4	Low Emitting Flooring: 50% of total floor area meets relevant criteria. Mirrors CALGreen 4.504.3-4 All carpet and 50% of resilient flooring is low emitting.	N Y	MR 2.2	Environmentally preferable products: flooring is FloorScore certified for 45% or	M
4.504.5	Composite wood products	Hardwood plywood, particleboard, and medium density fiberboard composite wood products used on the interior or exterior of the building shall meet the requirements for formaldehyde as specified in ARB's Air Toxics Control Measure for Composite Wood (17 CCR 93120 et seq.). See 4.504.5.1 for documentation requirements.	Y	N	K.7	Required: Meet Current CARB Airborne Toxic Control Measure (ATCM) for Composite Wood Formaldehyde Limits by Mandatory Compliance Dates	Y	MR 2.2	Environmentally preferable products: cabinet, counter, and trim composite materials contain no added urea-formaldehyde resins.	Y
4.505.2.1	Concrete slab foundations	Concrete slab foundations required to have a vapor retarder by California Building Code shall also have a capillary break.	Y	M	Q.6	Mirrors CALGreen 4.505.2 Vapor retarder and capillary break is installed at slab on grade.	Y	ID 2.1	Prerequisite: Part of durability plan.	Y
4.505.3	Moisture content of building materials	Building materials with visible signs of water damage shall not be installed. Moisture content of building materials used in wall and floor framing is checked before enclosure.	Y	M	Q.7	Mirrors CALGreen 4.505.3 19% moisture content of building framing materials.	Y	ID 2.1	Prerequisite: Part of durability plan.	Y
4.506.1	Bathroom exhaust fans	ENERGY STAR compliant exhaust fans which terminate outside the building are provided in every bathroom, and have humidistat control capable of adjustment between a relative humidity range of 50-80%.	Y	M M	H.8	Install ENERGY STAR Bathroom Fans on Timer or Humidistat.	M	EQ 5.1.d EQ 5.2.b/c	Prerequisite: exhaust fans in all bathrooms and kitchen are Energy STAR, meet ASHRAE standards, exhaust outdoors. Credit: occupancy sensor, humidistat, timer control, or continuous operation.	N M
4.507.1	Openings	Whole house exhaust fans shall have insulated louvers or covers which close when the fan is off. Covers or louvers shall have a minimum insulation value of R-4.2.	Y	n/a	H.9.b	Install Whole House Fan.	Y		none	n/a
4.507.2	Environmental Comfort: Heating and air conditioning system design	Heating and air conditioning systems shall be sized, designed, and equipment is selected using the following methods: 1. The heat loss and heat gain is established according to ACCA Manual J, ASHRAE handbooks or equivalent. 2. Duct systems are sized according to ACCA 29-D Manual D, ASHRAE handbooks or equivalent. 3. Select heating and cooling equipment according to ACCA 36-S Manual S or equivalent.	Y	Y	H.1.a	Design and Install HVAC System to ACCA Manual J, D, and S Recommendations.	Y	EQ 6.1	Prerequisite: Design Calcs and install ducts or system according to ACCA Manual J and D, and ASHRAE Handbook of Fundamental Procedures.	Y
702.1	Qualifications	HVAC systems installers are trained and certified in the proper installation of HVAC systems.	N	n/a	Q.8	Mirrors CALGreen 702.1 HVAC systems installers are trained and certified in the proper installation of HVAC systems.	Y		none	n/a

CALGreen Low-Rise Residential comparison to GreenPoint Rated and LEED for Homes

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CALGreen Residential Building Code			Earns GPR Cred/ Pts	Earns LEED Cred/Pts	GreenPoint Rated Single Family New Home 4.2 - 2008 Rating System		Meets CALGreen	LEED for Homes California (non-Midrise) Rating System		Meets CALGreen
CALGreen Section		CALGreen Requirements Summary			Measure	Requirements Summary		Credit	Requirements Summary	
Tier 1 additional prerequisites					**Comparable GPR credits & prerequisites**			**Comparable LEED credits & prerequisites**		
4.1	Planning and Design - all measures below plus 2 electives				Site, Community Design & Planning			Location & Linkages, Sustainable Sites		
A4.106.2.3	Soil Analysis and Protection	Tier 1: Displaced topsoil shall be stockpiled for reuse in a designated area and covered or protected from erosion.	N	M	A.1.a	Protect Topsoil and Reuse after Construction.	Y	SS 1.1.a	Prerequisite: Stockpile and protect disturbed topsoil from erosion.	Y
A4.106.4	Water permeable surfaces	Tier 1: Not less than 20% of the total parking, walking, or patio surfaces shall be permeable (excluding primary driveway, walkway and porch areas).	N	N	P.A.1.a	Permeable Paving for 25% of Driveways, Patios and Walkways (no excepted areas).	Y	SS 4.1	At least 70% of the built environment, excluding roof area, is permeable or designed to capture water runoff.	Y
A4.106.5	Cool Roof	Tier 1: Roofing materials shall have a minimum 3- year aged solar reflectance and thermal emittance or a minimum Reflectance Index (SRI) equal to or greater than the values specified in Tables A4.106.5(1) and A4.106.5(2). Steep slope >64, low slope >10 or 16 (depending on climate zone)	n/a	n/a		none	n/a		none	n/a
4.2	Energy Efficiency - all measures below plus 4 electives				HVAC, Building Performance, Renewables			Energy & Atmosphere		
A4.203.1	Energy performance	Tier 1: 15% reduction compared to Title 24.	Y	Y	J.2	Required: Minimum 15% better than Title 24.	Y	EA 1.1	Prerequisite: Minimum 15% better than Title 24.	Y
4.3	Water Efficiency and Conservation - all measures below plus 1 elective				Landscape, Plumbing			Water Efficiency		
A4.303.1	Kitchen faucets	Tier 1: Max. flow rate of 1.5 gpm.	Y	n/a	G.2.c	Kitchen faucets 2.0 gpm max.	N		Kitchen faucets not included as used for filling lasses or pots.	n/a
A4.304.4	Potable water reduction	When landscaping is provided by the builder, a water efficient landscape irrigation system shall be installed that reduces potable water use. Tier 1: Reduce the use of potable water to a quantity that does not exceed 65% of ETo times landscape area.	Y	Y N	C.11.a	Design Landscape to meet Water Budget: Install Irrigation System That Will Be Operated at ≤70% Reference ET.	N	SS 2.5 WE 2.3	Reduce Overall Irrigation Demand by at Least 20% (to 80% of ET). Reduce Overall Irrigation Demand by at Least 45% (to 55% of ET).	N Y
4.4	Material Conservation - all measures below plus 1 elective				Foundation, Exterior, Frame & Envelope			Materials & Resources		
A4.408.1	Enhanced construction waste reduction	Recycle and/or salvage for reuse non-hazardous construction and demolition debris (excavated soil and land-clearing debris excluded). Tier 1: 65% Reduction.	Y	Y	A.2.b	Divert 100% of Asphalt and Concrete and 65% (by weight) of Remaining Materials.	N	MR 3.2	Construction Waste Reduction: divert 25-88% of waste (excluding land clearing and demolition waste), or generate less that 2.5 lbs per sq. ft. of built space.	M
A4.403.2	Reduction in cement use	As allowed by the enforcing agency, reduce cement used in foundation mix design. Products commonly used to replace cement in concrete mix designs include, but are not limited to fly ash, slag, silica fume, rice hull ash. Tier 1: Not less than a 20% reduction in cement use.	Y	N	B.1	Replace Portland Cement in Foundation Concrete with Recycled Fly Ash and/or Slag (Minimum 20%).	Y	MR 2.2	Environmentally Preferable Products: Foundation and concrete wall cement contains at least 30% fly ash.	Y
A4.405.3	Recycled content	Use materials, equivalent in performance to virgin materials, with post-consumer or pre-consumer recycled content value (RCV) for a percent of the total materials cost. (RCV equals percent post-consumer + 1/2 percent pre-consumer times material cost.) Tier 1: minimum 10%.	M	M	A.3.a C.12 E.1 F.1 K.5 K.6 L.1	Use Recycled Content Aggregate Use Environmentally Preferable Materials for 70% of Non-Plant Landscape Elements and Fencing Use Environmentally Preferable Decking Insulation has 75% Recycled Content Use Recycled-Content Paint Use Environmentally Preferable Materials for Interior Finishes Use Environmentally Preferable Flooring	N	MR 2.2	Environmentally Preferable Products: Points earned for each of 21 building components (framing, siding, flooring, trim, cabinets, etc.) that contains a minimum of 25% postconsumer (or 50% postindustrial) recycled content, as long as recycled content is reached in 90% of the material used in that component.	N
5.5	Environmental Quality - all measures below plus 1 elective				Finishes, Flooring, HVAC			Indoor Environmental Quality		
A4.504.2	Resilient flooring systems	Tier 1: At least 80% of resilient flooring installed shall comply with the criteria listed above.	M	M	L.3	Low Emitting Flooring: 50% of total floor area is certified (resilient flooring: FloorScore).	N	MR 2.2	Environmentally preferable products: flooring is FloorScore certified for 45% or 90% of total floor area.	N
A4.504.3	Thermal Insulation	Tier 1: Install thermal insulation in compliance with the VOC-emission limits defined in Collaborative for High Performance Schools (CHPS) Low-emitting Materials List.	n/a	Y		none	n/a	MR 2.2	Environmentally preferable products: insulation complies with CA Practice for Testing of VOCs from Building Materials.	Y

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CALGreen Residential Building Code					GreenPoint Rated Single Family New Home 4.2 - 2008 Rating System			LEED for Homes California (non-Midrise) Rating System		
CALGreen Section		CALGreen Requirements Summary	Earns GPR Cred/Pts	Earns LEED Cred/Pts	Measure	Requirements Summary	Meets CALGreen	Credit	Requirements Summary	Meets CALGreen
Tier 2 additional prerequisites (Tier 1 prerequisites also apply)					Comparable GPR credits & prerequisites			Comparable LEED credits & prerequisites		
4.1	Planning and Design - all measures below plus 4 electives				Site, Community Design & Planning			Location & Linkages, Sustainable Sites		
A4.106.2.3	Soil Analysis and Protection	Tier 2: Tier 1, plus the construction area shall be identified and delineated by fencing or flagging to limit construction activity to the construction area.	N	N	A.1.b	Limit and Delineate Construction Footprint for Maximum Protection .	Y	SS 1.2	Minimize disturbed area of site around trees, leave undeveloped area, undo soil compaction.	Y
A4.106.4	Water permeable surfaces	Tier 2: Not less than 30% of the total parking, walking, or patio surfaces shall be permeable (excluding primary driveway, walkway and porch areas).	N	N	P.A.1.a	Permeable Paving for 25% of Driveways, Patios and Walkways (no excepted areas).	Y	SS 4.1	At least 70% of the built environment, excluding roof area, is permeable or designed to capture water runoff.	Y
A4.106.5	Cool Roof	Tier 2: Steep slope > 78, low slope >20.	n/a	n/a		none	n/a		none	n/a
4.2	Energy Efficiency - all measures below plus 6 electives				HVAC, Building Performance, Renewables			Energy & Atmosphere		
A4.203.1	Energy performance	Tier 2 - 30% reduction compared to Title 24.	Y	Y	J.3	Design and Build Near Zero Energy Homes.	Y	EA 1.2	Exceptional Energy Performance (16-60% better than Title 24).	N
4.3	Water Efficiency and Conservation - all measures below plus 2 electives				Landscape, Plumbing			Water Efficiency		
A4.303.1	Kitchen dishwashers	Dishwashers shall be EnergySTAR qualified and 5.8 gal/cycle max.	n/a	n/a		none	n/a		none	n/a
A4.304.4	Potable water reduction	Tier 2: Reduce the use of potable water to a quantity that does not exceed 60% of ETo times landscape area.	N	N	C.11.b	Install Irrigation System That Will Be Operated at ≤50% Reference ET.	Y	WE 2.3	Reduce Overall Irrigation Demand by at Least 45% (to 55% of ET).	Y
4.4	Material Conservation - all measures below plus 4 electives				Foundation, Exterior, Frame & Envelope			Materials & Resources		
A4.408.1	Enhanced construction waste reduction	Recycle and/or salvage for reuse non-hazardous construction and demolition debris (excavated soil and land-clearing debris excluded). Tier 2: 75% reduction.	N	Y	A.2.c	Divert 100% of Asphalt and Concrete and 80% (by weight) of Remaining Materials.	Y	MR 3.2	Construction Waste Reduction: divert 25-88% of waste (excluding land clearing and demolition waste), or generate less that 2.5 lbs per sq. ft. of built space.	M
A4.403.2	Reduction in cement use	Reduce cement used in foundation mix design. Tier 2: 25% reduction.	Y	N	B.1	Replace Portland Cement in Foundation Concrete with Recycled Fly Ash and/or Slag (Minimum 20%).	N	MR 2.2	Environmentally Preferable Products: Foundation and concrete wall cement contains at least 30% fly ash.	Y
A4.405.3	Recycled content	Use materials, equivalent in performance to virgin materials, with post-consumer or pre-consumer recycled content value (RCV) for a percent of the total materials cost. (RCV equals percent post-consumer + 1/2 percent pre-consumer times material cost.) Tier 2: minimum 15%.	M	M	A.3.a C.12 E.1 F.1 K.5 K.6 L.1	Use Recycled Content Aggregate Use Environmentally Preferable Materials for 70% of Non-Plant Landscape Elements and Fencing Use Environmentally Preferable Decking Insulation has 75% Recycled Content Use Recycled-Content Paint Use Environmentally Preferable Materials for Interior Finishes Use Environmentally Preferable Flooring	N	MR 2.2	Environmentally Preferable Products: Points earned for each of 21 building components (framing, siding, flooring, trim, cabinets, etc.) that contains a minimum of 25% postconsumer (or 50% postindustrial) recycled content, as long as recycled content is reached in 90% of the material used in that component.	N
5.5	Environmental Quality - all measures below plus 1 elective				Finishes, Flooring, HVAC			Indoor Environmental Quality		
A4.504.2	Resilient flooring systems	Tier 2: At least 90% of resilient flooring installed shall comply with the criteria listed above.	M	Y	L.3	Low Emitting Flooring: 50% of total floor area is certified (resilient flooring: FloorScore).	N	MR 2.2	Environmentally preferable products: flooring is FloorScore certified for 45% or 90% of total floor area.	N
A4.504.3	Thermal Insulation	Tier 2: Tier 1 plus Install insulation which contains No-Added Formaldehyde (NAF) and is in compliance with the VOC-emission limits defined in Collaborative for High Performance Schools (CHPS) Low-emitting Materials List.	n/a	Y		none	n/a	MR 2.2	Environmentally preferable products: insulation complies with CA Practice for Testing of VOCs from Building Materials.	N

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CALGreen Residential Building Code			Earns GPR Cred/ Pts	Earns LEED Cred/Pts	GreenPoint Rated Single Family New Home 4.2 - 2008 Rating System		Meets CALGreen	LEED for Homes California (non-Midrise) Rating System		Meets CALGreen
CALGreen Section	CALGreen Requirements Summary				Measure	Requirements Summary		Credit	Requirements Summary	
Elective measures					**Comparable GPR credits & prerequisites**			**Comparable LEED credits & prerequisites**		
4.1	Planning and Design (choose two for Tier 1 or four for Tier 2)				Site, Community Design & Planning			Location & Linkages, Sustainable Sites		
A4.103.1	Site Selection: Infill, Greyfield, or Brownfield.		Y	M	O.1-2	Develop Infill Sites, Build on Designated Brownfield Site.	Y	LL 3.1-3.3	Preferred Locations: Edge, Infill, Previously Developed.	Y
A4.104.1	Site Preservation: Staff Trained in Environmentally Friendly Development.		M	N	N.2 N.3	Pre-Construction Kick-Off Meeting with Rater Subs, Management Staff are Certified Green Building Professionals.	Y	ID 1.2-1.4	Integrated project planning, Professional credentialed with respect to LEED for Homes, Design charrette.	Y
A4.105.1	Deconstruction and Reuse of Existing Materials.		M	M	A.2.b,c	Divert 100% of Asphalt and Concrete and 65% (and 75%) (by weight) of Remaining Materials.	M		would contribute to MR 2.2a (reused materials) and MR 3.2 (deconstruction).	N
A4.106.1	Solar Orientation within 30 degrees of South.		N	N	J.3	Design and Build Near Zero Energy Homes.	M	ID 1.5	Building orientation within 15 degrees of South, meets glazing ratios.	Y
A4.106.2.1	Soil Analysis used in structural design of building.		n/a	n/a		none	n/a		none	n/a
A4.106.2.2	Soil Protection minimizes erosion, cut and fill, and trenching.		n/a	N		none	n/a	SS 1.2	Minimize disturbed area of site around trees, leave undeveloped area, undo soil compaction.	M
A4.106.3	Landscape Design	Do one or more of: 1. Restore areas disrupted by construction with native species	M	n/a	C.3c	75% of Plants are Drought Tolerant, California Natives or Mediterranean Species	M		none	n/a
		2. Turf Reduction: - Tier 1: Turf limited to 50% of total landscaped area	N	Y	C.4	Minimize Turf in Landscape Installed by Builder: less than 25% or 10% of total area	Y	SS 2.3	Limit conventional turf to 60%-0% of softscape area	N
		- Tier 2: Turf limited to 25% of total landscaped area	Y				Y			
		3. Use 75% native Californian or drought tolerant species	Y	Y	C.3c	75% of Plants are Drought Tolerant, California Natives or Mediterranean Species	Y	SS 2.4	Drought-tolerant plants are 40%-90% of installed plants	N
		4. Use hydrozoning irrigation techniques	Y	Y	C.1	Group Plants by Water Needs (Hydrozoning)	Y	WE 2.1.f	Create separate zones for each type of bedding area based on watering needs	Y
4.2	Energy Efficiency (choose four for Tier 1 or six for Tier 2)				HVAC, Building Performance, Renewables			Energy & Atmosphere		
* energy note	Indicates prescriptive energy measures in CALGreen without a prescriptive counterpart in GPR or LEED, but which would contribute to energy performance prerequisites and points/credits in GPR (J.2) and LEED (EA 1).		*	*	* Indicates prescriptive energy measures in GPR without a prescriptive counterpart in CALGreen, but which would contribute to energy performance prerequisites in Tier 1 or Tier 2.		*	* Indicates prescriptive energy measures in LEED without a prescriptive counterpart in CALGreen, but which would contribute to energy performance prerequisites in Tier 1 or Tier 2.		*
A4.205.1	Radiant Barrier*		*	*		* see energy note	*		* see energy note	*
A4.205.2	Exterior Shading on South & West Windows		*	*		* see energy note	*		* see energy note	*
A4.206.1	Blower Door Testing		Y	N	J.1.b-c	Blower Door Test	Y	EA 1.1	Prerequisite: envelope leakage testing	Y
A4.207.1	Innovative Radiant, Hydronic, or Ground Source Heating & Cooling System		M	*	H.3	High Performing Zoned Hydronic Radiant Heating	Y		* see energy notes at top	*
A4.207.2	HVAC Commissioning		n/a	n/a		none	n/a		none	n/a
A4.207.4	Furnace AFUE .90 or higher		Y	*	H.2.a	Sealed Combustion Units (Furnace).	Y		* see energy note	*
A4.207.5	Electric Heat Pump HSPF 8.0 or higher*		Y	*	H.4	High Efficiency Air Conditioning, HSPF >8	M		* see energy note	*
A4.207.6	Cooling Equipment SEER higher than 13.0 and EER 11.5 or higher		N	*	H.4	High Efficiency Air Conditioning, SEER >14, EER>11 or 12	Y		* see energy note	*
A4.207.7	Interior and/or Insulated Ductwork		Y	*	H.5.a	Install HVAC Unit and Ductwork within Conditioned Space	Y		* see energy note	*
A4.207.8	Duct Leakage Testing Shows <6% Leakage*		M	n/a		* see energy note	*	EA 1.1	Prerequisite: envelope leakage testing	M
A4.207.9	Whole House Fan		Y	*	H.9.b	Whole House Fan	Y		* see energy note	*
A4.207.10	Energy STAR Ceiling Fans		Y	Y	H.9.a	Energy STAR Ceiling Fans	Y	EA 9.1.b	Energy STAR Ceiling Fans	Y
A4.208.1	Gas Water Heater EF higher than .6		M	Y	H.2.b	Sealed Combustion Units (Water Heater)	M		none for LEED-H in California	*
A4.208.2	Gas Water Heater EF higher than .8		Y	Y	H.2.b	Sealed Combustion Units (Water Heater)	N		none for LEED-H in California	*
A4.208.3	Minimize Hot Water Wait Time		N	M	G.1	Distribute Domestic Hot Water Efficiently	Y	EA 7.1	Efficient Hot Water Distribution System	M
A4.209.1	Hard-wired Lighting Fixtures at least 90% Energy STAR		Y	Y	M.5	High-Efficacy Lighting and Design Lighting System	Y	EA 8.3	Lighting - up to 80% Energy STAR	N
A4.210.1	All Applicable Appliances Energy STAR		Y	Y	M.1-3	Energy STAR Dishwasher, Clothes Washer, Refrigerator	Y	EA 9.1.a,c,d	Energy STAR Refrigerator, Dishwasher, Clothes Washer	Y
A4.211.1	Solar PV System meeting CEC NSHP program		M	N	I.3	Onsite Renewable Generation	M	EA 10	Renewable Energy System	Y
A4.211.2	Solar Water Heating System with Solar Fraction > 0.5.		M	Y	I.3	Onsite Renewable Generation	M		none for LEED-H in California	*
A4.211.3	Roof Space for Future Solar Installation - 300 sq ft. min.		Y	n/a	I.2	Install Wiring Conduit for Future Photovoltaic Installation & Provide 200 ft2 of South-Facing Roof.	N		none	n/a
A4.211.4	Conduit for Future Solar Installation - 1" min.		Y	n/a	I.2	Install Wiring Conduit for Future Photovoltaic Installation & Provide 200 sq ft of South-Facing Roof.	Y		none	n/a

CALGreen Low-Rise Residential comparison to GreenPoint Rated and LEED for Homes

version 1.0, September 1, 2010

CALGreen Residential Building Code				GreenPoint Rated Single Family New Home 4.2 - 2008 Rating System			LEED for Homes California (non-Midrise) Rating System		
CALGreen Section	CALGreen Requirements Summary	Earns GPR Cred/Pts	Earns LEED Cred/Pts	Measure	Requirements Summary	Meets CALGreen	Credit	Requirements Summary	Meets CALGreen
4.3	Water Efficiency and Conservation (choose one for Tier 1 or two for Tier 2)			Landscape, Plumbing			Water Efficiency		
A4.303.2	Non-water urinals or toilets	Y	Y	P.G.4	Composting or Waterless Toilet.	Y		Non-water fixtures would contribute to WE 3.1.	N
A4.304.1	Minimize spray heads in irrigation system (all areas except turf).	N	M	C.6.a	Install High-Efficiency Irrigation System with Low-Flow, Drip, Bubblers or low-flow Sprinklers for all areas.	Y	WE 2.1.e,i	Drip irrigation for 50% of landscape planting beds, High-efficiency nozzles with distribution uniformity at least 0.70.	M
A4.304.2	Rainwater capture, storage, and re-use for 65% of roof area.	M	M	C.8	Rain Water Harvesting System .	M	WE 1.1	Rainwater Harvesting System.	M
A4.304.3	Water budget for irrigation.	N	M	C.11.a	Design Landscape to Meet Water Budget.	Y	WE 2.1.a	Irrigation System Design by Certified Professional.	M
A4.304.5	Landscape design uses no potable water.	n/a	n/a		none	n/a		none	n/a
A4.305.1	Piping for future graywater system.	Y	N	P.G.1	Greywater Pre-Plumbing.	Y	WE 1.2	Graywater Reuse System.	Y
A4.305.2	Recycled water piping for future toilet flushing.	N	N		none	n/a		none	n/a
A4.305.3	Recycled water used for irrigation.	Y	Y	C.9	Irrigation System Uses Recycled Wastewater, or is pre-plumbed.	M	WE 1.3	Municipal Recycled Water System.	Y
4.4	Material Conservation (choose one for Tier 1 or four for Tier 2)			Foundation, Exterior, Frame & Envelope			Materials & Resources		
A4.403.1	Frost-Protected Shallow Foundation.	Y	n/a	B.2	Use Frost-Protected Shallow Foundation in Cold Areas (CEC Climate Zone 16).	Y		none	n/a
A4.404.1	Efficient Framing Lumber Size: Beams and Headers.	M	M	D.1.b	Apply Optimal Value Engineering - Door and Window Headers Sized for Load.	Y	MR 1.4	Framing Efficiencies.	M
A4.404.2	Efficient Framing Building Dimensions and Layouts.	N	Y	D.1.a	Apply Optimal Value Engineering - Place Joists, Rafters and Studs at 24-Inch on Center.	Y	MR 1.2, MR 1.4	Detailed Framing Documents, Framing Efficiencies.	M
A4.404.3	Pre-manufactured Building Systems.	M	Y	D.2-3,6	Construction Material Efficiencies, Engineered Lumber, Solid Wall Systems.	Y	MR 1.4, MR 1.5	Framing Efficiencies, Off-site Fabrication.	Y
A4.404.4	Pre-cut Materials and Details.	M	N	D.2-3,6	Construction Material Efficiencies, Engineered Lumber, Solid Wall Systems.	Y	MR 1.3	Detailed Framing Documents, Cut List and Lumber Order.	Y
A4.405.1	Windows, Trim, and/or Siding Do Not Require Paint or Stain.	M	n/a	E.4	Durable non-Combustible Siding Material.	Y		none	n/a
A4.405.2	Flooring Without Additional Coverings, e.g. Concrete.	Y	M	L.1, L.2	Environmentally Preferable Flooring Thermal Mass Floors.	M	MR 2.2	1/2 point for 90% hard surface flooring; sealed concrete counts towards flooring component.	Y
A4.405.4	Renewable Materials, e.g. Bamboo, Cork, Wood, Agricultural Sources.	N	N	K.6, L.1	Use Environmentally Preferable Materials for Interior Finish, Flooring: A) FSC-Certified Wood, B) Reclaimed, C) Rapidly Renewable, D) Recycled-Content or E) Finger-Jointed F) Local.	M	MR 2.2	Environmentally Preferable Products: Linoleum, cork, or bamboo count towards flooring component - 90% of total flooring must be renewably sourced to count.	Y
A4.407.1	Install Foundation and Landscape Drains.	N	M	B.4	Install a Foundation Drainage System .	Y	ID 2.1	Prerequisite: Part of durability plan.	Y
A4.407.2	Roof Drains Connected to Landscape Features.	N	Y	P.A.1.c	Route Downspout Through Permeable Landscape.	Y	SS 4.3	Permanent stormwater controls designed to manage roof runoff.	Y
A4.407.3	Flashing Details Provided.	N	Y	E.2	Flashing Installation Techniques Specified and Third-Party Verified.	Y	ID 2.1	Prerequisite: Part of durability plan.	Y
A4.407.4	Construction Materials Protected from Moisture Damage.	N	Y	A.5.b	Construction Environmental Quality Management Plan - Full environmental plan with flush out.	Y	ID 2.1	Prerequisite: Part of durability plan.	Y
A4.407.5	Ice/Water Barrier on Roof (Climate Zone 16 only).	n/a	Y		none	n/a	ID 2.1	Prerequisite: Part of durability plan.	Y
A4.407.6	Exterior Doors Protected from Water Intrusion.	n/a	n/a		none	n/a		none	n/a
A4.407.7	Permanent Overhang or Awning on Exterior Walls.	Y	n/a	D.8.b	Overhangs and Gutters.	Y		none	n/a
5.5	Environmental Quality (choose one for Tier 1 or one for Tier 2)			Finishes, Flooring, HVAC			Indoor Environmental Quality		
A4.504.1	Early Compliance with CARB Particleboard Formaldehyde Standards.	Y	M	K.8	Exceed Current CARB ATCM for Composite Wood Formaldehyde Limits Prior to Mandatory Compliance Dates.	Y	MR 2.2	Environmentally preferable products: cabinet, counter, and trim composite materials contain no added urea-formaldehyde resins.	M
A4.506.1	Filters on Air and Ventilation Systems higher than MERV 6.	Y	N	H.6	High Efficiency HVAC Filter (MERV 6+).	Y	EQ 7.1	Prerequisite: Filters >= MERV 8.	Y
A4.506.2	Direct Vent or Isolated Equipment.	Y	N	H.2	Sealed Combustion Units.	Y	EQ 2.1	Prerequisite: Basic Combustion Venting Measures: sealed combustion or power-vented exhaust. CO detectors required.	Y

CALGreen Low-Rise Residential comparison to GreenPoint Rated and LEED for Homes

version 1.0, September 1, 2010

CALGreen Residential Building Code		Earns GPR Cred/ Pts	Earns LEED Cred/Pts
CALGreen Section	CALGreen Requirements Summary		

Note: this column is intentionally left blank as there are no CALGreen measures comparable to the remaining GPR and LEED for Homes measures listed here.

GreenPoint Rated Single Family New Home 4.2 - 2008 Rating System		Meets CALGreen
Measure	Requirements Summary	
Additional GPR credits & prerequisites		
Site, Community Design & Planning		
A.4	Reduce Heat Island Effect on Site.	
C.13	Reduce Light Pollution by Shielding Fixtures and Directing Light Downward.	
N.1	Required: Incorporate GreenPoint Rated Checklist in Blueprints.	
O.3	Cluster Homes & Keep Size in Check.	
O.4	Design for Walking & Bicycling.	
O.5	Design for Safety & Social Gathering.	
O.6	Design for Diverse Households.	
P.A.1.b-e	Stormwater Control: Landscape and Site Features.	
PA.2	Capture and Treat 85% of Total Annual Stormwater Runoff.	
HVAC, Building Performance, Renewables		
C.3	Construct Resource-Efficient Landscapes.	
C.5	Plant Shade Trees.	
C.7	Incorporate Two Inches of Compost in the Top 6 to 12 Inches of Soil.	
D.7	Energy Heels on Roof Trusses.*	
H.9.c	Automatically Controlled Integrated HVAC System with Variable Speed.*	
I.1	Pre-Plumb for Solar Water Heating.	
J.1.a	Verify Quality of Insulation Installation & Thermal Bypass Checklist.*	
J.5-6	Third Party Energy Plan Review.*	
L.2	Thermal Mass Floors.*	
N.5	Install a Home System Monitor OR Do Time-of-Use Pricing Program.	
P.H.1	Humidity Control Systems.	
P.H.2	Design HVAC System to Manual T for Register Design.	
Landscape, Plumbing		
C.2	Mulch All Planting Beds to the Greater of 3 Inches or Local Water Ordinance Requirement.	
C.10	Submetering for Landscape Irrigation.	
C.12	Use Environmentally Preferable Materials for 70% of Non-Plant Landscape Elements and Fencing.	
P.G.2	Greywater System Operational.	
P.G.3	Innovative Wastewater Technology (Constructed Wetland, Sand Filter, Aerobic System).	
P.G.5	Install Drain Water Heat-Recovery System.	
P.G.6	Install a Hot Water Desuperheater.	

LEED for Homes California (non-Midrise) Rating System		Meets CALGreen
Credit	Requirements Summary	
Additional LEED credits & prerequisites		
Location & Linkages, Sustainable Sites		
SS 3	Reduce local heat island effect.	
	none	
	none	
SS 6	Compact Development, Home Size Adjuster.	
LL 5	Basic Community Resources / Transit.	
	none	
	none	
SS 4.1	See above.	
SS 4.3	Management of roof runoff: manage 50% or 100% on site.	
ID 1.1	Prerequisite: Integrated Project Planning.	
LL 2	Site Selection (Avoid Sensitive Sites).	
LL 4	Existing Infrastructure.	
LL 6	Access to Open Space.	
SS 2.1	Prerequisite: No Invasive Plants.	
SS 4.2	Permanent Erosion Controls.	
Energy & Atmosphere		
	none	
SS 3	Reduce Local Heat Island Effects: trees or high-albedo hardscape.	
SS 2.2.e	All compacted soil must be tilled to at least 6 inches.	
	* see energy notes at top	
	* see energy notes at top	
	none	
	* see energy notes at top	
	none	
	* see energy notes at top	
	none	
EQ 3	Moisture Control: mechanical dehumidification system.	
	none	
EA 8.1	Prerequisite: Meet California Title-24 lighting requirements.	
EA 11.1	Prerequisite: Refrigerant Charge Test.	
EA 11.2	Appropriate HVAC Refrigerants.	
Water Efficiency		
SS 2.2.d	Add mulch or soil amendments as appropriate.	
WE 2.1.d	Submeter for irrigation system.	
MR 2.2	Environmentally Preferable Products: Decking and Patio material.	
WE 1.2	Graywater Reuse System.	
	none	
	none	
	none	
WE 2.1	Additional irrigation efficiency measures.	
WE 2.2	Third-party inspection of irrigation system.	
WE 3.2	Very high efficiency fixtures and fitting.	

CALGreen Low-Rise Residential comparison to GreenPoint Rated and LEED for Homes

version 1.0, September 1, 2010

CALGreen Residential Building Code		Earns GPR Cred/Pts	Earns LEED Cred/Pts
CALGreen Section	CALGreen Requirements Summary		
Note: this column is intentionally left blank as there are no CALGreen measures comparable to the remaining GPR and LEED for Homes measures listed here.			

note: 2010 California Building Code and California Residential Code require CO alarms

GreenPoint Rated Single Family New Home 4.2 - 2008 Rating System		Meets CALGreen
Measure	Requirements Summary	
Foundation, Exterior, Frame & Envelope		
A.4	Cool Site: Reduce Heat Island Effect On Site.	
B.5	Moisture Controlled Crawlspace.	
B.6	Design and Build Structural Pest Controls.	
D.4	Insulated Headers.	
D.5	FSC-Certified Wood.	
E.1	Environmentally Preferable Decking.	
E.3	Rain Screen Wall System.	
E.4	Durable and Non-Combustible Siding.	
E.5	Durable and Fire Resistant Roofing Materials or Assembly.	
M.4	Install Built-In Recycling Center or Composting Center .	
N.4.b	Conduct Educational Walkthroughs (Prerequisite is N4a).	
P.N.2	Educational Signage of Project's Green Features.	
P.D.1	Design, Build and Maintain Structural Pest and Rot Controls.	
P.D.2	Use Moisture Resistant Materials in Wet Areas.	
P.E.1	Vegetated Roof.	
P.K.1	Materials Meet SMaRT Criteria.	
P.N.1	Detailed Durability Plan & Verification.	
Finishes, Flooring, HVAC		
A.5.b	Full environmental quality management plan and pre-occupancy flush out is conducted (Prerequisite is A5a).	
B.3	Use Radon Resistant Construction.	
D.9	Reduce Pollution Entering the Home from the Garage.	
H.1.b-c	HVAC System Diagnostic Testing.	
H.7	No Fireplace OR Sealed Gas Fireplace(s) with Efficiency Rating >60%.	
H.10	Advanced Mechanical Ventilation for IAQ.	
H.11	Install Carbon Monoxide Alarm(s).	
J.1.d	Combustion Safety Backdraft Test.	
J.4	EPA Indoor airPlus Certification.	
K.1	Design Entryways to Reduce Tracked-In Contaminants.	
K.9	After Installation of Finishes, Test of Indoor Air Shows Formaldehyde Level <27 ppb.	

LEED for Homes California (non-Midrise) Rating System		Meets CALGreen
Credit	Requirements Summary	
Materials & Resources		
SS 3	Reduce Local Heat Island Effects: trees or high-albedo hardscape.	
	none	
SS 5	Pest Control Alternatives: structural measures.	
	none	
WE 2.1	Prerequisite: FSC Certified / Tropical Wood.	
MR 2.2	EPP Materials: decking.	
ID 2.1	Prerequisite: Part of durability plan.	
ID 2.1	Prerequisite: Part of durability plan.	
ID 2.1	Prerequisite: Part of durability plan.	
	none	
AE 1.1.b	One-hour walkthrough with occupant(s).	
AE 1.2-1.3	Enhanced Training, Public Awareness.	
SS 5	See above.	
	none	
SS 4.3	Manage Roof Runoff (see above).	
	none	
ID 2.1-2.3	Prerequisite: Durability Planning, Management & Verification.	
MR 1.1	Prerequisite: Framing Order Waste Factor <10%.	
Indoor Environmental Quality		
EQ 8.3	Preoccupancy Flush.	
EQ 9	Prerequisite: Radon Protection in High-Risk Areas, additional credit in moderate-risk areas.	
EQ 10	Prerequisite: No HVAC in Garage, additional credit for garage pollutant protection.	
	none	
EQ 2.2	No fireplace, or do back-draft potential test.	
	none	
EQ 2.1.b	CO monitors on each floor.	
EQ 2.2	Enhanced Combustion Venting Measures.	
EQ 1	Energy STAR with Indoor Air Package.	
EQ 8.2.a,b	Indoor Contaminant Control: walk-off mats or shoe removal area.	
	none	
EQ 4.1	Prerequisite: Basic Outdoor Air Ventilation (ASHRAE 62.2).	
EQ 4.2	Enhanced Outdoor Air Ventilation.	
EQ 4.3, 5.3, 6.3	Third-Party Performance Testing of Outdoor Air Supply/ Exhaust / Room-by-Room.	
EQ 5.1	Prerequisite: Basic Local Exhaust: Bathroom & kitchen fans and ducts meet ASHRAE 62.2 and exhaust outdoors.	
EQ 6.1	Prerequisite: Room-by-Room Heating and Cooling Load Calculations.	
EQ 6.2	Return Air Flow / Room Controls.	
EQ 7.2-7.3	Filters > MERV 10 or 13.	
EQ 8.2.c	Central Vacuum System	

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