

Multi-Modal Circulation, Streetscape, and Storm- water

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This chapter describes policies, guidelines, and improvements for the Mill Site's multi-modal transportation network and parking management system. This chapter also includes policies and guidelines that address the design of streets, sidewalks, landscape treatments, stormwater management, street furniture, and street lighting in the Mill Site.

The multi-modal transportation network for the Mill Site is designed to accommodate future residents and employers while ensuring seamless connectivity between the existing circulation network in Fort Bragg and the Mill Site. In order to achieve these goals, the multi-modal transportation network emphasizes:

- Complete streets that effectively and safely serve vehicles, pedestrians and cyclists.
- Moderate vehicle speeds;
- Improved pedestrian safety;
- Enhanced neighborhood-serving transit service;
- Supportive parking policies; and
- Convenient bike and pedestrian facilities.

As designed, the circulation network will create a high-quality walking and biking environment and will thereby expand mobility choices for existing and future residents, visitors, and employees.

3.1 Circulation Plan

The street, transit, pedestrian, and bicycle network for the Mill Site is designed to achieve the following objectives:

- Goal 1: Create a community with places that are easily accessible to pedestrians, cyclists, and drivers and that are well connected to other parts of Fort Bragg.
- Goal 2: Provide safe and convenient connections for pedestrians and bicycles through the Mill Site by establishing a network of streets and multi-use paths connecting Main Street and the Coastal Trail area.
- Goal 3: Create high quality public spaces within rights of way.

Circulation Policies:

Policy MM-1. Complete Streets. As part of the first (Master) Tentative Subdivision Map for the Mill Site, the applicant shall establish a multi-modal network of “complete streets” that balances the needs for safety and comfort of pedestrians, cyclists, drivers, and transit riders and that substantially conforms to the conceptual street network design in MAP C-2.

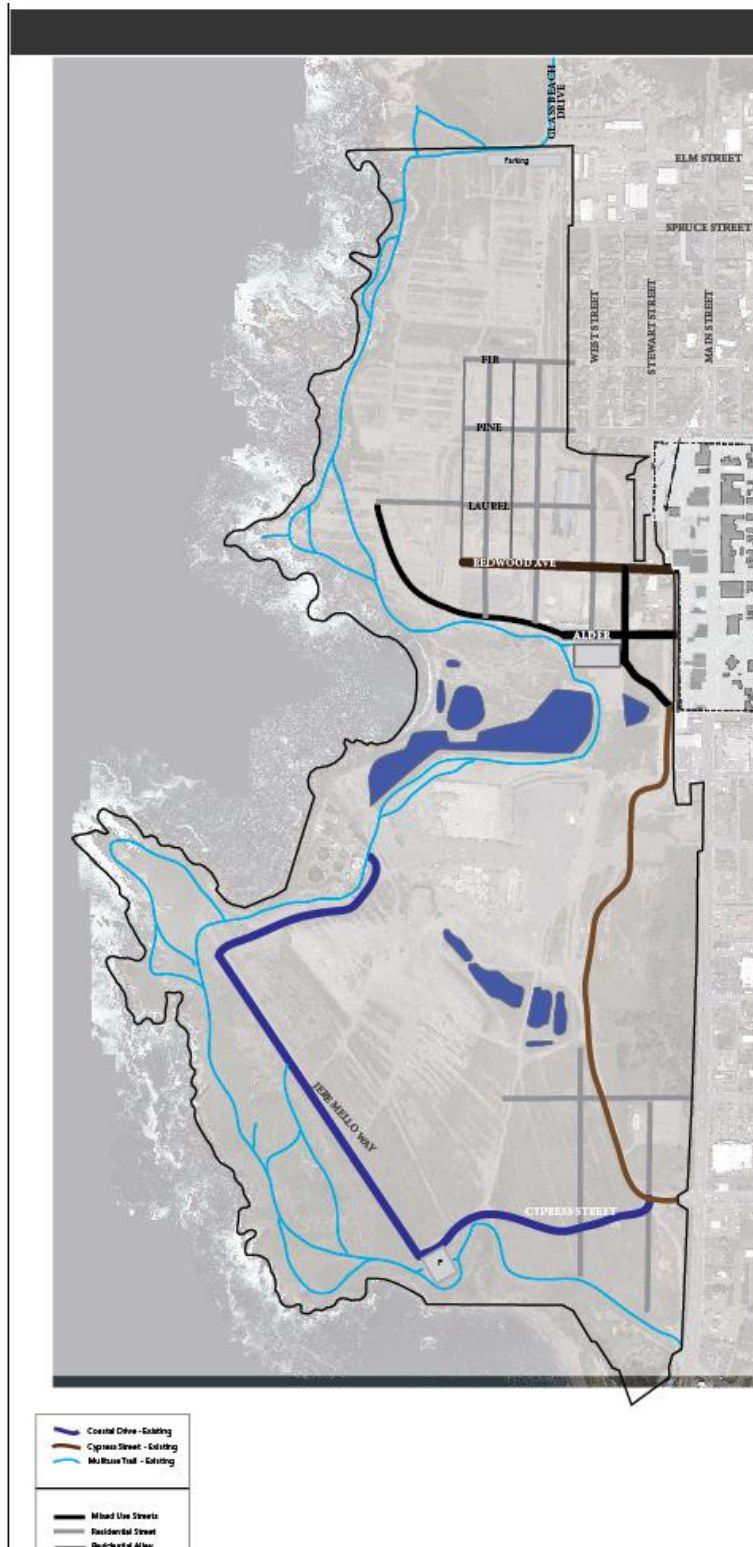
Policy MM-2. Mill Site Public Right of Way Dedication. New Mill Site streets shall be offered for dedication at the (Master) Tentative Subdivision Map stage. Streets and all associated utilities (sewer, water, stormwater, etc.) shall be offered for dedicated to the City of Fort Bragg upon completion of construction by the developer. Interior rights of way for each subsequent subdivision shall dedicate right of way at the time of development or subdivision, as required by the permitting authority.

Policy MM-3. Street Connectivity. The (Master) Tentative Subdivision Map stage for each district shall establish street connectivity that encourages pedestrian and bicycle travel and provides convenient connections to destinations in the Mill Site and Fort Bragg.

Policy MM-4. Street Connections. Cypress Street and Redwood Avenue shall serve as the gateway connections between new development in the Mill Site and existing development. Other connection points shall occur at Elm Street, Spruce Street, Bush Street, Fir Street, Pine Street, Redwood Avenue, Alder Street and Oak Street, as feasible.

Policy MM-5. Other Connections. Non-street public rights of way shall be dedicated as necessary to support the multi-modal transportation network.

FIGURE 3-1 *CONCEPTUAL STREET NETWORK DIAGRAM*



3.1.1 ROADWAY NETWORK

A. New Streets and Street Connections

A number of new streets will be necessary to serve future development of the Mill Site and connection to the existing street network. A wide range of street typologies will serve the varying types of development that will occur, ranging from one-lane alleys to commercial streets with parking on both sides and generous sidewalks that allow for outdoor seating and other amenities.

In the east-west direction, the City's existing street network will extend into the Mill Site from Alder Street (south) to Elm Street (north). A street connection at Laurel Street is not feasible due to the Skunk Train tracks; similarly, a connection at Madrone Street is inhibited by the Mendo Mill property, while a connection at Oak Street may be constrained by Pond 5. In addition, a number of new north-south small-scale residential streets and alleys will provide connections between east-west streets, creating a fine-grained block system.

Cypress Street will be extended into the site to serve as the major entry point for the southern part of the Mill Site.

A preliminary traffic analysis was conducted based on the street standards included in Table 3-1. Given the development limitations and the density of the road network, it is likely that all on-site streets would need only one lane in each direction. Some intersections may need left-turn lanes, depending on specific development projects. It is unlikely that any on-site intersections will need traffic signals. Stop signs and traffic signals, if necessary, will be installed in accordance with the Manual of Uniform Traffic Control Devices.

A preliminary assessment of off-site intersections shows that few, if any, intersection improvements would be needed (see Appendix C). The intersection of Main Street/Pine Street will need to be signalized. Other cross-streets that intersect Main Street at unsignalized intersections may experience an increase in traffic due to the development of the Mill Site.

Policy MM-6. Street Typologies. The Mill Site street network shall conform with the City's existing street standards.

Policy MM-7. Connectivity. The roadway network shall include facilities for all modes of transportation generally consistent with Map C-2. In the Northern and Central Districts, block size and roadway pattern shall be similar to the existing city grid, and the existing alley along the eastern edge of the district shall be maintained. The east-west streets shall extend into the Mill Site in alignment with the existing city grid where feasible. In addition, the north-south West Street and Glass Beach Drive shall continue into the Mill Site.

Program MM 7-1 Cypress Street Gateway. Cypress Street shall serve as the major entry point for the southern part of the Mill Site and as the primary access point to a research and education center, and future employment uses. Therefore, the gateway shall be designed to highlight these potential uses in the Southern District.

Program MM 7-2 Cypress Street Bridge. A vehicular bridge may be installed over a restored Maple Creek.

Program MM 7-3 Redwood Avenue Gateway. The extension of Redwood Avenue from the existing Central Business District (CBD) into the Central District of the Mill Site shall serve as a direct physical connection between existing and future commercial development. Redwood Avenue shall: (1) be a two-way street; (2) be designed to ensure low motor vehicle speeds by using traffic calming measures; 3) the northern sidewalk of Redwood Ave shall serve as a pedestrian promenade from the CBD to the coast to facilitate pedestrian and solar access; and 4) sidewalks shall feature special corner treatments, pedestrian refuge crosswalks, landscaping, and valley gutters similar to the existing downtown.[MJ1]

Program MM 7-5 Connections at Spruce, Bush, Fir, and Pine Streets. The street connections shall be designed to ensure that vehicle speeds and volumes are kept low and that the connection itself is compatible with the existing neighborhood and the proposed development.

Program MM 7-6 Alder, Oak, Maple, Walnut, and South Street Connections. Entries to the Mill Site for vehicles shall be accommodated at Redwood and Alder Street. Connections at Oak, Maple, and Walnut Streets should be completed if feasible. A connection at South Street and Noyo Point Road is not feasible due to proximity to the Noyo Bridge.

Policy MM-8. Street & Infrastructure Dedication. All Streets, alleys and associated infrastructure (sewer mains, water mains, drainage features) shall be offered for dedication to the City as part of any subdivision or Coastal Development Permit approval. All Street and infrastructure shall be constructed by the developers consistent City Standards, the Coastal General Plan and any Master Subdivision Map and/or Development Agreement.

Policy MM-9. Complete Streets. All streets shall be designed as complete streets for the safety and comfort of cyclists and pedestrians, including children, the elderly, and people with disabilities, consistent with US Department of Transportation complete streets guidelines.

Program MM 4-9 Safe Streets. The design speed of streets in the Central and Northern Districts shall not exceed 25 miles per hour, with typical operating speeds below 20 miles per hour. In the Southern District, design speeds may be as high as 30 miles per hour, with typical operating speeds below 25 miles per hour. Streets shall be designed to optimize pedestrian safety and comfort, with the minimum number of travel lanes necessary to accommodate their traffic function at Level of Service E or better, averaged over the midweek peak one hour. If unacceptable traffic congestion is identified, traffic shall be

redistributed onto additional streets, or accommodated with a right- or left-turn pocket, rather than by adding a travel lane.

Policy MM-10. Gated Communities. *Gated communities are prohibited.*

Policy MM-11. Alleys and Garages in the Northern District. *The alley grid shall be similar to the original alley grid of Fort Bragg west of Harold Street. Except where infeasible, garages shall be located behind residential buildings and shall be accessible via alleys connecting to the main residential street.*

Policy MM-12. South District Streets. *The streets in the Southern District which serve commercial or industrial uses shall be designed to accommodate larger truck movements.*

3.1.2 BICYCLE SYSTEM

Its largely flat terrain, compact development pattern, and mild climate make Fort Bragg an ideal place for bicycling. Bicycling in Fort Bragg is already popular for recreational purposes and as a transportation mode to destinations both within the city and in surrounding communities. The City's current bicycle network is comprehensive, and the Mill Site offers the opportunity to tie into the City's existing bicycle routes and connect them to the ocean, providing an extraordinary system for utility and recreational riding.

Bicycle Policies:

Policy MM-13. Bike-Friendly Streets. *Streets shall accommodate cyclists, either through dedicated bicycle facilities or through traffic calming sufficient to ensure that motor vehicles travel at bike-compatible speeds.*

Policy MM-14. Path Connections. *Multi-use paths that connect with the Coastal Trail are encouraged within the Mill Site and may be required by the California Coastal Act.*

Policy MM-15. Multi-Use Trail Along Highway 1 *A multi-use trail along the western edge of the Mill Site from Noyo Point Road to Madrone Street shall be developed and offered in dedication to the City of Fort Bragg at the time that the associated parcels are developed.*

Policy MM-16. The bicycle network includes the following improvements:

- *A multi-use trail connecting to the Pudding Creek Bridge, Elm Street, Redwood Ave, Cypress Street, Noyo Point Road & Highway 1;*
- *Bicycle lanes on Redwood Street;*
- *A multi-use trail along the western edge of the Caltrans right-of-way from Noyo Point Road to Madrone Street; and*
- *Shared space (bicycles and vehicles) on residential and mixed use streets.*

3.1.3 PEDESTRIAN SYSTEM

All streets in the Mill Site are designed to maintain motor vehicle travel at a speed that optimizes safety for all users, including cyclists and pedestrians.

A. Traffic Calming Elements

By providing compact intersections and travel lanes, small blocks, abundant landscaping, and sidewalk-oriented development, the design for the Mill Site sends a clear message to motorists that they have left the highway and entered a pedestrian-oriented neighborhood. Specific traffic calming elements included in the site design include:

All new streets in the Mill Site (except the west side of Coastal Drive) will be equipped with sidewalks to ensure that future residents, visitors, and employees can safely and comfortably walk throughout the site at all times of day and night.

Pedestrian Policies:

Policy MM-17. Traffic Calming. *The following specific traffic calming elements, or their equivalents, shall be included, as required by the Community Development Director, in all Streets: sidewalks in compliance with City standards on both sides of the street; corner “bulb-outs” to ensure low-speed turning movements and improving pedestrian safety; native landscaping along the roadway edge; small block length; and dedicated Bicycle lanes on the Primary streets.*

Policy MM-18. Pedestrian-Oriented Buildings. *All future buildings in the Mill Site shall be oriented toward sidewalks rather than parking lots. No parking shall be placed between a building front façade and the street it faces.*

Policy MM-19. Pedestrian Connectivity. *To the extent feasible, where streets are discontinuous for cars, pedestrian and bicycle connections shall be made, through the construction of multi-use trails and sidewalks with clear sightline visibility from adjoining rights of way.*

Policy MM-20. Safety and Security. *Streets on the Mill Site shall be designed to be safe at all times of day and night for pedestrians. The minimum sidewalk width for all streets within all districts shall be 6 feet.*

Program MM 20.1 Crosswalk Design. *Base geometric design of crosswalks on residential streets are encouraged to follow the guidance of the Institute for Transportation Engineers’ Traditional Neighborhood Development Street Design Guidelines: An ITE Recommended Practice or Residential Streets, Third Edition or update. Geometric design of crosswalks for Redwood Avenue, other street segments with mixed-use development, and street segments with light industrial development are encouraged to follow the guidance of the Institute for*

Transportation Engineers' Designing Walkable Urban Thoroughfares: A Context Sensitive Approach: An ITE Recommended Practice.

Program MM 20.2 Raised Crosswalks. *Raised crosswalks and/or high visibility intersections are encouraged to be installed along Redwood Avenue and in the Central Business District extension to slow vehicles and reduce conflicts with crossing pedestrians.*

Program MM 20.3 Accent Paving. *Accent paving in crosswalks on Redwood Avenue shall be installed to improve crosswalk visibility and aesthetics.*

Program MM 20.4 Bulb-Outs. *Corner bulb-outs may be incorporated to narrow crossing distances, increase pedestrian visibility, and slow motorists on Redwood Avenue.*

Program MM 20.5 Additional Traffic Calming Measures. *The City engineer may require additional traffic calming features where necessary to ensure pedestrian safety.*

3.1.4 TRANSIT ACCESS AND TRANSIT NEEDS

The City of Fort Bragg is currently served by the Mendocino Transit Authority (MTA), and its existing service may be seamlessly extended into the Mill Site.

Transit Policies:

Policy MM-21. Transit Design. *Redwood Avenue shall accommodate Mendocino Transit Authority (MTA) transit buses and stops.*

Policy MM-22. Transit Amenities. *Future bus stops located adjacent to, or on, development sites within the Mill Site shall meet MTA requirements.*



An example of a transit stop incorporated into a development site.

3.2 Parking Management and Design

The Mill Site is designed to be pedestrian-oriented. Applying conventional parking requirements to development in the Mill Site will result in too much surface parking, excessive construction costs, and reduced development. In vibrant, mixed-use downtowns along the West Coast, peak cumulative parking demand rarely exceeds two spaces per 1,000 square feet of commercial development—as long as parking is shared among different uses.¹ This figure applies even in intensely successful retail districts with limited transit, like the downtowns of Palo Alto, Santa Monica, and Santa Barbara, California, and Bellevue, Washington. So little parking is needed in these downtowns because customers park once and visit several destinations. To provide for a successful mixed-use downtown extension, the Specific Plan’s approach to parking follows the example of these successful, walkable downtowns, rather than more auto-dependent locations.

The Specific Plan parking requirements seek to ensure adequate parking for all users. The standards will also prevent the problems that would arise if too much parking were provided and land uses were too far apart for the downtown extension to remain walkable.

Parking Policies:

Policy MM-23. “Park Once” District. *The Central District shall be designed and managed as a “park once” district, where visitors, residents, and employees are encouraged to park once and walk to various destinations without moving their cars.*

Policy MM-24. Focus on Availability. *Public and on-street parking throughout the Mill Site shall be managed to spread parking demand and achieve a target of 15 percent of spaces being available at all times along all block faces and in all parking lots. This target may be achieved through installation of parking meters, parking time limits, or other mechanisms.*

Policy MM-25. Shared Parking. *Shared parking, particularly in the Central District, shall maximize the use of parking spaces and minimize spaces that are reserved for individual commercial tenants. In all districts, adjacent parking lots shall be designed for joint use where practical. In the Central District, individual commercial tenants or property owners shall be restricted from reserving for their own use more than two spaces or 10 percent of project spaces, whichever is greater. New commercial and residential development in the Mill Site shall be required to share parking to take advantage of differential peak parking*

¹ In 2010, parking studies were compiled for downtown Santa Monica, Ventura, Walnut Creek, and Palo Alto, California; Bellevue, Washington; and other small, mixed-use downtowns. Each study measured peak, cumulative parking demand, total parking supply, and total built floor area. In each case, including cities where vehicle mode share is high, shoppers, employees, and visitors tended to park once and visit a few destinations, allowing one shared parking space to substitute for several private parking spaces.

periods for residential, industrial, retail, restaurant, and office uses that maximize parking use throughout the day.

Policy MM-26. Coastal Access. On-and off-street parking shall be provided to achieve the access requirements of the Coastal Act.

Policy MM-27. To protect view sheds from public rights of way to the ocean, coastal access, parking shall not be located at the termination of any east-west street.

Policy MM-28. *Parking Management Plan.*^[MJ2] A parking management plan shall be prepared for the Central District by the applicant for the first development proposal in the district. Each subsequent development shall be required either to prepare a summary of how the development will comply with the Central District Management Plan or to update the plan. The Central District Management Plan shall include the following elements:

- Current/proposed parking supply by block;
- Current parking utilization by block, including, at a minimum, counts at weekday midday, weekday evening, and Saturday midday;
- Estimated observed and proposed parking demand by land use;
- Recommended sites for shared parking facilities;
- Recommended time restrictions;
- A financing plan for the development, management and financing of shared parking facilities; and
- A management plan for meeting parking availability targets, including parking time limits.

3.3 Streetscape Design

The streetscape design standards are designed to achieve the following objectives:

- Create a cohesive public realm that includes streets, parks, squares, trails, community gardens, and other open spaces to link future development in the Mill Site with the coastal trail and existing portions of Fort Bragg.
- Reduce watershed pollution by developing standards for collecting, conveying, and treatment of storm water runoff that take advantage of and respect the limitation imposed by the site's natural hydrology.

3.3.1 GENERAL STREETSCAPE DESIGN

Depending on the specific land use context of a neighborhood or district within the Mill Site, activities may vary along the length of a street and sometimes between segments of the same street. The design of residential streetscapes will therefore look and function differently from commercial or industrial streetscapes. In addition, the integration of

traditional streetscape design elements, such as street trees, street furniture, and street lighting with landscape-based storm water management techniques (LID), will require the particular attention by the designers and engineers involved in the final streetscape design process.

Streetscape Policies:

Policy MM-29. Creating “Place Identity.” Streetscapes in the Mill Site are encouraged to contribute to overall place identity and district character.

Policy MM-30. Creating User Appropriate Streetscapes. Streetscapes in the Mill Site shall be designed to promote walking; support pedestrian comfort; and accommodate the needs of residents, visitors, restaurant or shop patrons, and commercial businesses and their employees.

Policy MM-31. Integration of Low Impact Development (LID). Development projects shall incorporate LID features. Subdivision and development projects that include street improvements shall incorporate LID features into the public rights-of-way where feasible.

3.3.2 DESIGN OF THE PEDESTRIAN REALM

This section includes policies related to several critical areas for creating streetscapes that are functional and comfortable for the pedestrian. These critical streetscape areas include:

- Landscape Elements
- Parking Lane and Curb Extension Treatments
- Street Furniture
- Lighting

This section provides policies for where specific streetscape design elements will be located and how the elements will relate to one another. Additionally, the streetscape design policies in this section closely relate to the street typology established in Section 3.1.2. This section also addresses the proposed greenway in the Northern District. Table 3-2, Sidewalk Zones, and the street cross-sections and plan views in Figures 3-2 to 3-6 illustrate the standards and recommendations described below.

A. Landscape Elements

Landscape elements, especially trees, greatly contribute to establishing the streetscape character for individual districts or individual streets. Trees add soft textures and colors, provide shade from the sun, act as a windbreak, introduce a pleasing visual rhythm, and create a positive sense of spatial enclosure for pedestrians. Incorporation of shrubs, grasses, and perennials in the LID features required along the majority of streets will help create pedestrian scale while effectively treating and conveying stormwater.

Fort Bragg's coastal climate (Climate Zone 17) limits the selection of plants that will survive and thrive in the Mill Site. The use of trees in the swales for stormwater management in the public rights-of-way (residential east-west streets, Coastal Drive, and portions of Parkway Street) presents an additional challenge for the plant selection process, as these trees will need to tolerate the coastal climate and wet conditions in their root zones. Appendix B includes a table of tree species, shrubs, and perennials that can survive and thrive in Fort Bragg's climate.

Landscape Elements Policies:

Policy MM-32. Eliminate Potable Water Use for Landscaping. Landscaping within the streetscape shall not use potable water, by including plantings that do not require irrigation.

Policy MM-33. Drought Tolerant Street Landscaping. Street trees, bushes and landscaping shall be:

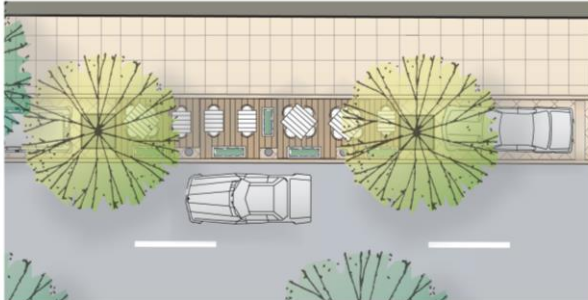
1. Appropriate for Fort Bragg's coastal climate.
2. Plants shall be carefully selected to emphasize native plants in order to provide habitat, use minimal water, and reflect the natural community of the area.
3. Accommodated in species-appropriate soil volumes in individual tree wells, or with other landscaping in continuous landscape strips, stormwater planters, or swales. Trees and landscaping bushes may also be accommodated in curb extensions or landscape planters in the parking lane.
4. Trees and landscaping bushes should be planted in groupings along a block.

Policy MM-34. Plant material used in LID features, such as stormwater planters, vegetated swales, or rain gardens, shall be consistent with recommendations for plant material included in the most current best management practices (BMPs) available for such facilities and appropriate for the Mill Site climate. Native plant material shall be used in the landscaped strip of streets to the extent practicable.

B. Parking Lane Treatment

Parking lanes create an important buffer between pedestrians on adjacent sidewalks and moving traffic in the roadway. Parking lanes can also include low impact development (LID) features, such as permeable paving, and can be used to increase the space available for pedestrian-oriented streetscape elements. The latter requires configuration as a flexible parking lane in which temporary or seasonal use of the parking lane for pedestrian-oriented activities is allowed. See the illustration below showing the seasonal use of a parking lane for outdoor dining.

'FLEX' LANES FOR PARKING & CAFÉ/ RESTAURANT SEATING



Detail Plan

- Trees, movable bollards, & planters define café area
- Removable platforms accommodate tables & chairs
- Allow more space for pedestrians



Example:

- Castro Street, Mountain View

Parking Lane Treatment Policies:

Policy MM-35. Use of Parking Lane. Parking lanes shall be used for parking and to accommodate low impact development (LID) and other landscape features in parking lanes as needed.

Policy MM-36. Flexible Parking Lanes. Use of flexible parking lanes is encouraged on Redwood Avenue.

Policy MM-37. Permeable Paving. Permeable paving features should be tied into other low impact development (LID) features of the stormwater management system, as feasible.

Policy MM-38. Use of Rain Gardens and Planters. Rain gardens, stormwater planters, or a series of tree planters are encouraged in the parking lane in order to provide additional capacity for stormwater management and to visually narrow the roadway for speed management.

Policy MM-39. Extent of Rain Gardens and Planters. Rain gardens and stormwater planters incorporated into the parking lane shall not extend into travel lanes.

Policy MM-40. Parking Lanes on Redwood Avenue/Other Mixed-Use Streets. Colored or textured paving is encouraged to identify the flexible parking lane on Redwood Avenue from the adjacent roadway.



A "two-step" curb that links the parking lane and sidewalk.

C. Curb Extension Treatment

Curb extensions (or bulb-outs) can be used to narrow the roadway and extend the sidewalk into the parking lane at street corners and in mid-block locations. Curb extensions provide additional space for pedestrian activities, bicycle parking, café seating, or the accommodation of LID features like rain gardens. They also reduce the crossing distance for pedestrians, increase a pedestrian's visibility at crosswalks, and can be effectively used for traffic calming.

Curb Extension Treatment Policies:

Policy MM-41. Curb Extensions. *Corner curb extensions shall be installed at all street intersections unless determined by the City Engineer to be infeasible..*

Policy MM-42. Curb Extension Treatments. *Curb extension [MJ3] treatments shall comply with the following:*

- *The length of curb extensions shall be determined by balancing the need for parking with the need for added space dedicated to pedestrian activities, bicycle parking, and stormwater management (e.g., rain gardens).*
- *Curb extensions shall generally extend the full width of the parking lane.*
- *Curb extensions shall not extend into travel lanes.*
- *On streets with curbless LID features such as swales, the geometry of “curb” extensions shall follow the approximate location of the curb as if a one were present.*

D. Street Furniture [MJ4]

Pedestrian-oriented amenities, if well selected and located, can enrich the walking experience by adding functionality and visual interest to the pedestrian realm. Street furniture includes public seating, trash and recycling receptacles, drinking fountains, news racks, bicycle parking, restrooms, information kiosks, and pedestrian-scale retail stands.

Street Furniture Policies:

Policy MM-43. Street Furniture Dedication. *Street furniture within the public right-of-way may be transferred to the City of Fort Bragg as part of the right of way dedications.*

Policy MM-44. Street Furniture Requirements. *Development within the Mill Site shall comply with the following street furniture requirements:*

1. *Amenities along Redwood Avenue — shall be coordinated in style and color with amenities in the Downtown.*

2. *Street furniture placement shall be closely coordinated with the design of LID features the striping of parking stalls, and breaks in stormwater planters required for pedestrian circulation between the parking lane and the Clear Zone of sidewalks).*
3. *No sidewalk amenity shall reduce the clear width of a sidewalk or walkway path to less than 4 feet. All street furniture and other amenities shall comply with Americans with Disabilities Act (ADA) requirements.*
4. *All street furniture and other amenities shall be made of durable, high-quality non-metal materials. Materials and finishes shall be specifically selected to withstand exposure to Fort Bragg's coastal climate.*

Policy MM-45. Appropriate Street Furniture by Street Type. *All street furniture shall be consistent with the specifications listed in Table 3-3, Appropriate Streetscape Furniture by Street Type.*

Policy MM-46. Street Furniture and Art in the Central District. *Public seating shall be incorporated into the Redwood Avenue extension and considered on other streets in the Central District. Seat walls and seating may be incorporated into buildings, landscape features, and stormwater planters, as an alternative to freestanding benches. Public Art is encouraged and may be incorporated into street furniture and sidewalks.*

E. Lighting

High-quality lighting helps create a positive streetscape and district character during the day and at night. Street lighting increases the sense of safety for all users of a street. By day, the light fixtures establish a rhythm along the street and can unify the street design. At night, pedestrian-scaled light fixtures define the visual nighttime experience of a streetscape, path, plaza, or park. Street lighting can also use significant energy, and poorly placed or designed street lights can result in light pollution and an unsightly visual experience.

Lighting Policies:

Policy MM-47. Lighting of Public Rights-of-Way. *Roadway and pedestrian-scale lighting shall be provided, as appropriate, on all new streets and pathways in accordance with the following guidelines and with applicable City standards.*

1. *Light level and uniformity ratio requirements for street and pedestrian lighting as well as crosswalks shall follow the standards described in the American National Standard Practice for Roadway Lighting (RP-8) published by the Illuminating Engineering Society of North America (IESNA). Lamps shall have a high Color Rendering Index (CRI).*
2. *Sky glow shall be mitigated by selecting "dark sky"-friendly light fixtures that direct most of the emitted light downward and mitigate glare*

3. *The characteristics of pedestrian activity, such as slow travel speeds, frequent stopping and standing, and the need for human scale, shall be taken into account in the light fixture selection process as well as in the fixtures' day and nighttime design characteristics.*
4. *All street lighting shall be energy-efficient. All lighting in the public realm shall be fitted with energy-efficient lamps, and optical systems. Light operation shall be managed to reduce energy use by reducing or turning off lighting when activity levels decrease at night. Lamps shall include individual on and off switches.*
5. *Light fixtures shall efficiently direct light to the desired area of the roadway, sidewalk, and/or pathway, avoiding excessive glare, the shedding of light onto adjacent private properties, and sky glow.*
6. *The preferred height of pedestrian-scale light fixtures is between 12 and 15 feet (to light source). The use of light fixtures with light sources at heights of 20 feet or more shall be limited to locations where the required lighting levels cannot be met by solely using pedestrian-scale fixtures. The use of "cobra head" fixtures is not acceptable.*
7. *Fixtures may be staggered or placed symmetrically on both sides of the street depending on lighting and uniformity requirements. Light fixtures shall be spaced with as consistent a rhythm as feasible. Light fixture and tree spacing shall be closely coordinated to prevent tree canopies from blocking the light emitted by the fixture.*
8. *Street lighting can be located on adjacent buildings, where desirable.*
9. *The City of Fort Bragg's standard, decorative downtown pedestrian-scale light fixture shall be used throughout the Central District. On Redwood Avenue, banner arms and banners shall be attached to light poles to further identify this street as a commercial street integral to Fort Bragg's downtown.*
10. *The location and spacing of light fixtures shall be coordinated with those of low impact development (LID) features, street trees, and street furniture along Redwood Avenue to properly accommodate the higher pedestrian volumes and circulation needs expected on this street.*

3.4 Stormwater Management

The vision for sustainable development of the Mill Site considers water, including stormwater runoff, an important natural resource of the site. This section calls for an approach to the management of stormwater runoff in the Mill Site that uses "green infrastructure" and low

impact development (LID)² strategies. These strategies meet the legal requirements for flow control and pollution prevention relevant to stormwater runoff from public rights-of-way.

The prime objective of LID is to reduce and treat stormwater close to its source. Traditional urban stormwater management systems are designed for fast and concentrated evacuation of stormwater, while LID-based systems reuse, slow, spread, and infiltrate stormwater to minimize the quantity of runoff and improve stormwater quality. When LID systems use natural processes and native plants, they are called “green infrastructure.” Green infrastructure features, such as swales, stormwater planters, permeable paving, mulched landscape areas, and retention and infiltration ponds, are used to detain, convey, infiltrate, and treat stormwater (see Table 3-5). They also generally reduce the amount of impervious surfaces in the public right-of-way.

The green infrastructure approach to stormwater management in the Mill Site is sustainable, meets applicable stormwater regulations, and creates a site design element that ecologically and aesthetically connects the future developed and undeveloped portions of the Mill Site. Green infrastructure (or other LID) features will be systematically integrated into the design of public streets, sidewalks, parking areas, and plazas in the Mill Site’s developed area.

TABLE 3-5 FUNCTIONS OF LOW IMPACT DEVELOPMENT (LID) STORMWATER FACILITIES

	Detention	Retention	Infiltration	Conveyance	Water Quality
Permeable Paving	X	X	X		X
Stormwater Planters	X	X	X		X
Swales	X		X	X	X
Rain Gardens	X	X	X		X
Subsurface Trenches	X	X	X	X	X

3.4.1 STORMWATER MANAGEMENT

This section of the Specific Plan discusses green infrastructure strategies for application within public rights-of-way in the Plan. Please note that stormwater management requirements for development outside of the public right of way is regulated by the CLUDC. These strategies, which include the use of permeable paving materials coupled with landscaped detention and conveyance systems, are aimed at reducing the peak flow of

² Low impact development (LID) is a landscape-based approach to on-site stormwater management that emphasizes the use of best management practices (BMPs) integrated into a building, site, or street to treat stormwater and detain stormwater runoff. BMPs are strategies or structural devices used to reduce volume, peak flows, and/or pollutant concentrations of stormwater runoff through one or more of the following processes: evapotranspiration, infiltration, detention, filtration, and biological and chemical actions. In addition to minimizing specific negative environmental effects of the built environment, the LID approach is focused on how BMPs can create more aesthetically pleasing stormwater management solutions that contribute to placemaking.

stormwater runoff from public rights-of-way and treating the runoff for pollutants. In addition, LID features contribute to a more verdant and attractive urban environment that will complement Fort Bragg's unique natural setting and create a comfortable and visually attractive pedestrian environment.

The final size, location, and number of stormwater detention, conveyance, and infiltration areas and elements will need to be designed to ensure both that water is retained and treated and that sufficient flood control measures are in place to handle even large storm events with no crossover from the storm sewers to the sanitary sewer system.

The following policies apply to the treatment of stormwater runoff from public rights-of-way and all associated best management practices (BMPs) and build upon Coastal LUDC Chapter 17.64, Stormwater Runoff Pollution Control (which regulate stormwater management associated with private development within the Coastal Zone and on the Mill Site.

Stormwater Management Policies:

Policy MM-48. Stormwater as a Resource. *In the public right of way, [M] stormwater that is reused, infiltrated into the groundwater, and integrated into natural hydrological flows is encouraged.*

Policy MM-49. Low Impact Development: *In the public right of way a Low Impact Development (LID) approach to stormwater management that integrates landscape and natural processes into aesthetically pleasing stormwater solutions is encouraged.*

Policy MM-50. Runoff into Public Rights-of-Way. *Runoff into the public rights-of-way shall be minimized to the degree feasible and treated via bio-retention to remove pollutants to the maximum extent practicable.*

Policy MM-51. Stormwater Connections to Coastal Trail and Mill Pond Complex. *Plans for all Mill Site stormwater systems that connect to stormwater conveyance systems on the Fort Bragg Coastal Trail property and/or the Mill Pond Complex area shall analyze and address through system design any cumulative downstream impacts on the trail and Mill Pond Complex facilities to ensure that the trail, parkland, ponds, and wetland functions are not degraded or damaged.*

Policy MM-52. Low Impact Development (LID) in Landscaping Design. *LID features shall integrate attractive landscaping design that provides both a functional and aesthetic amenity with minimal maintenance requirements.*

Policy MM-53. Use of Native and Adapted Landscaping in Low Impact Development (LID). *Native and suitable adapted landscaping shall be used to the maximum extent practicable in LID features.*

Policy MM-54. Swales. Swales to convey stormwater are encouraged where practical. Where infiltration is possible, swales may be designed with a subsurface infiltration trench to allow infiltration.

Policy MM-55. Rain Gardens. Rain gardens are encouraged in curb extension, street-adjacent open spaces, and other places where adequate space exist. Rain garden are encouraged to maximize stormwater infiltration as permitted by local soil conditions.

Policy MM-56. Permeable Paving. Permeable paving materials, such as permeable asphalts and concretes, decomposed granite surfaces, and unit paver systems, are preferred over asphalt and concrete where technically feasible.

Policy MM-57. Tree Wells and Streetscape Planters. Tree wells and streetscape planters may include roadway curb cuts and planter curb cuts to allow roadway or sidewalk runoff to collect in them and infiltrate.

Policy MM-58. Streetscape Landscape Features as Temporary Reservoirs. The soil and subsurface composition of streetscape landscaping may allow landscape features to serve as temporary reservoirs, where water is treated and detained for later slow release or infiltration.

Policy MM-59. Engineered Soil Matrix. Engineered soil matrix of sand, compost and mulch shall required for bio-retention facilities as determined by the City Engineer.



Swales are linear depressions adjacent to the streetscape that can detain and convey stormwater along their length.



Rain gardens are landscaped planters that are more extensive than storm water planters and typically are designed to infiltrate storm water. They can be located in or adjacent to the street.