

CITY OF HAYWARD

Hayward City Hall
777 B Street
Hayward, CA 94541
www.Hayward-CA.gov



CITY OF
HAYWARD
HEART OF THE BAY

Agenda

Tuesday, February 28, 2017

7:00 PM

Conference Room 2A

City Council

Mayor Barbara Halliday
Mayor Pro Tempore Sara Lamnin
Council Member Francisco Zermeño
Council Member Marvin Peixoto
Council Member Al Mendall
Council Member Elisa Márquez
Council Member Mark Salinas

CITY COUNCIL MEETING**CALL TO ORDER Pledge of Allegiance: Council Member Peixoto****ROLL CALL****CLOSED SESSION ANNOUNCEMENT****PUBLIC COMMENTS**

The Public Comment section provides an opportunity to address the City Council on items not listed on the agenda or Information Items. The Council welcomes your comments and requests that speakers present their remarks in a respectful manner, within established time limits, and focus on issues which directly affect the City or are within the jurisdiction of the City. As the Council is prohibited by State law from discussing items not listed on the agenda, your item will be taken under consideration and may be referred to staff.

ACTION ITEMS

The Council will permit comment as each item is called for the Consent Calendar, Public Hearings, and Legislative Business. In the case of the Consent Calendar, a specific item will need to be pulled by a Council Member in order for the Council to discuss the item or to permit public comment on the item. Please notify the City Clerk any time before the Consent Calendar is voted on by Council if you wish to speak on a Consent Item.

CONSENT

1. [CONS 17-069](#) Recycled Water Storage and Distribution System Project:
Authorization to Execute a Professional Services Agreement for
Professional Services for Recycled Water Customer Retrofit
Conversions

Attachments: [Attachment I Staff Report](#)
[Attachment II Resolution](#)

WORK SESSION

Work Session items are non-action items. Although the Council may discuss or direct staff to follow up on these items, no formal action will be taken. Any formal action will be placed on the agenda at a subsequent meeting in the action sections of the agenda.

2. [WS 17-008](#) Mission Boulevard Corridor Improvements Phase 2 and 3
Project Update (Report from Public Works Director Fakhrai)

Attachments: [Attachment I Staff Report](#)
[Attachment II Mission Boulevard Corridor Phases](#)
[Attachment III Phase 2 Overall Plans](#)
[Attachment IV Phase 3 Overall Plans](#)

3. [WS 17-007](#) Discussion of Council Priority Initiative: Complete Streets/Traffic Safety (Report from Public Works Director Fakhrai)

Attachments: [Attachment I Staff Report](#)
[Attachment II Adopted Complete Streets Policy](#)
[Attachment III Draft Final Complete Streets Design Guidelines](#)
[Attachment IV-a Transportation Capital Project Checklist](#)
[Attachment IV-b Development Review Checklist](#)
[Attachment V Complete Streets Implementation Work Program](#)

4. [WS 17-006](#) Discussion of Council Priority Initiative: Complete Communities (Report from Development Services Director Rizk)

Attachments: [Attachment I Staff Report](#)

CITY MANAGER'S COMMENTS

An oral report from the City Manager on upcoming activities, events, or other items of general interest to Council and the Public.

COUNCIL REPORTS, REFERRALS, AND FUTURE AGENDA ITEMS

Oral reports from Council Members on their activities, referrals to staff, and suggestions for future agenda items.

ADJOURNMENT

NEXT MEETING, March 7, 2017, 7:00 PM

PUBLIC COMMENT RULES

Any member of the public desiring to address the Council shall limit her/his address to three (3) minutes unless less or further time has been granted by the Presiding Officer or in accordance with the section under Public Hearings. The Presiding Officer has the discretion to shorten or lengthen the maximum time members may speak. Speakers will be asked for their name before speaking and are expected to honor the allotted time. Speaker Cards are available from the City Clerk at the meeting.

PLEASE TAKE NOTICE

That if you file a lawsuit challenging any final decision on any public hearing or legislative business item listed in this agenda, the issues in the lawsuit may be limited to the issues that were raised at the City's public hearing or presented in writing to the City Clerk at or before the public hearing.

PLEASE TAKE FURTHER NOTICE

That the City Council adopted Resolution No. 87-181 C.S., which imposes the 90-day deadline set forth in Code of Civil Procedure section 1094.6 for filing of any lawsuit challenging final action on an agenda item which is subject to Code of Civil Procedure section 1094.5.

****Materials related to an item on the agenda submitted to the Council after distribution of the agenda packet are available for public inspection in the City Clerk's Office, City Hall, 777 B Street, 4th Floor, Hayward, during normal business hours. An online version of this agenda and staff reports are available on the City's website. Written comments submitted to the Council in connection with agenda items will be posted on the City's website. All Council Meetings are broadcast simultaneously on the website and on Cable Channel 15, KHRT.****

Assistance will be provided to those requiring accommodations for disabilities in compliance with the Americans with Disabilities Act of 1990. Interested persons must request the accommodation at least 48 hours in advance of the meeting by contacting the City Clerk at (510) 583-4400 or TDD (510) 247-3340.

Assistance will be provided to those requiring language assistance. To ensure that interpreters are available at the meeting. Interested persons must request the accommodation at least 48 hours in advance of the meeting by contacting the City Clerk at (510) 583-4400.



CITY OF HAYWARD

Hayward City Hall
777 B Street
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File #: CONS 17-069

DATE: February 28, 2017

TO: Mayor and City Council

FROM: Director of Utilities & Environmental Services

SUBJECT

Recycled Water Storage and Distribution System Project: Authorization to Execute a Professional Services Agreement for Professional Services for Recycled Water Customer Retrofit Conversions

RECOMMENDATION

That Council adopts the attached resolution authorizing the City Manager to execute a professional services agreement with HydroScience Engineers, Inc. (HydroScience) for professional services for recycled water customer retrofit conversions, in an amount not to exceed \$710,000.

ATTACHMENTS

Attachment I	Staff Report
Attachment II	Resolution



DATE: February 28, 2017

TO: Mayor and City Council

FROM: Director of Utilities & Environmental Services

SUBJECT Recycled Water Storage and Distribution System Project: Authorization to Execute a Professional Services Agreement for Professional Services for Recycled Water Customer Retrofit Conversions

RECOMMENDATION

That Council adopts the attached resolution authorizing the City Manager to execute a professional services agreement with HydroScience Engineers, Inc. (HydroScience) for professional services for recycled water customer retrofit conversions, in an amount not to exceed \$710,000.

SUMMARY

The City's Recycled Water Storage and Distribution System Project includes the design of irrigation system retrofits necessary to convert customers from the City's potable drinking water system to the new recycled water system. There are a significant number of supporting tasks that must be completed to comply with State regulations for use of recycled water, including conducting site visits, properly training site supervisors on the use of recycled water, and testing and inspecting the installed customer retrofits to ensure complete separation of the recycled water and potable drinking water systems. The field work includes retrofitting the piping on a customer's property for the site to be able to use recycled water. This specialized work requires extensive knowledge and experience with recycled water regulations and customer irrigation systems. A request for proposals was issued to qualified consulting firms. Based on staff evaluation of the proposals received, staff recommends that the City execute an agreement with HydroScience in an amount not to exceed \$710,000.

BACKGROUND

The City's Recycled Water Storage and Distribution System Project consists of constructing a one-million-gallon storage tank and pump station at the City's Water Pollution Control Facility (WPCF) and installing approximately 10 miles of distribution pipelines and customer connections to deliver an estimated 290 acre-feet per year, or about 260,000 gallons per day, of recycled water. The water will be used for irrigation of parks, schools, roadway medians and landscaped areas around commercial and industrial buildings. The project, as currently envisioned, does not include a recycled water treatment facility.

The project anticipates that the City would purchase surplus tertiary treated recycled water from Russell City Energy Corporation, LLC's (RCEC) Recycled Water Facility, located adjacent to the WPCF. This possibility, which can benefit both the City and RCEC, had been contemplated in the City water supply agreement with RCEC. Staff is currently in discussions with the company on the terms and conditions of a recycled water supply agreement for RCEC to provide the recycled water supply for the City's project. If the City is unable to reach agreement with RCEC, staff would return to Council to request authorization to proceed with installing separate recycled water treatment facilities at the WPCF. This option was previously analyzed and considered in the environmental documentation prepared for the City's recycled water project.

Design of the storage tank, pump station and distribution system is currently underway and expected to be completed by July 2017. A critical next step in the project is to design the on-site piping modifications and appurtenances, such as backflow prevention devices, needed to protect the City's potable water distribution system from potential contamination as irrigation customers are connected to the new recycled water system. In addition to the technical aspects of this effort, there is also a regulatory and educational component to retrofitting customers to ensure that the City and customers comply with State requirements for using recycled water. These requirements include maintaining complete separation of the recycled water and potable water systems at all times, installing proper signage at sites, and making sure that site supervisors in charge of irrigations systems are properly trained in the use of recycled water.

DISCUSSION

Recycled water customer retrofit conversions require specialized expertise and knowledge of recycled water regulations and irrigation systems, particularly since conditions at each site will be unique and different. Because staff does not have the expertise to perform this technical work, it is in the City's best interest to contract with a qualified and experienced firm to provide these services. To that end, staff issued a request for proposals (RFP) in early January 2017. The following paragraphs describe in detail the work to be completed, the consultant selection process, and cost for the proposed services.

Scope of Work

The City has identified forty-one irrigation sites that could potentially be connected to the recycled water distribution system. Originally, a total of twenty-four customer connections were planned based on a preliminary market assessment. However, with the final alignment of the new pipelines, an additional seventeen commercial customers were identified that may be able to use recycled water for irrigation. Staff expects that the actual number of connections may change after evaluations to determine the feasibility of retrofitting each site are completed. The work that would be included in the professional services agreement is described in this section.

Customer Contact and Site Surveys

Retrofitting customers to use recycled water requires extensive communication with the customer. City staff would make initial contact with potential customers to introduce the consultant and proposed retrofit work. The consultant would then meet with each of the forty-one customers to document site conditions and determine site-specific retrofit requirements. Information that would be collected includes potential recycled water demand, system pressure requirements, and location and description of existing water distribution and irrigation system facilities. The consultant would also discuss with each customer the qualification and training requirements for the customer's on-site recycled water site supervisor.

Feasibility Determinations

Based on the individual site surveys, the consultant would then prepare preliminary designs for each potential customer site in accordance with City and State standards for use of recycled water. Preliminary designs would show the approximate location of the new recycled water meter, appropriate backflow prevention devices, and any site modifications required to convert the customer to recycled water. The work and costs involved to retrofit customer sites will differ and depend on the complexity of the site. For example, in some cases, the irrigation system is currently on a separate meter with an appropriate backflow prevention device, so minimal physical effort will be needed to disconnect the customer from the potable water system and connect them to the new recycled water system. In other cases, the customer's irrigation and potable water service may be provided through a single meter, which requires separating the two uses and installing proper backflow prevention on the potable water line.

The consultant would then evaluate the feasibility of each customer retrofit using cost effective and constructability criteria, with the City staff making the final determination on which sites are most feasible to proceed with retrofitting to use recycled water.

Retrofit Designs

Retrofits would be designed for customer sites that the City determines are feasible to connect to the new recycled water system. Customer retrofits generally include modifying piping and installing backflow prevention devices necessary to ensure complete separation of the recycled and potable water systems at all times. For the City, a major effort may be upgrading backflow prevention devices on existing fire lines to ensure compliance with State regulations. Design drawings would include specific areas of recycled water use, areas of public access, location and type of signage, location and details regarding nearby wells, and all piping within the use area, such as recycled water, potable water, and wastewater. The final design submittal would also include construction cost estimates.

Site Supervisor Training and Testing

Once the retrofits are installed and prior to connecting to the recycled water system, the consultant would meet with each customer to ensure the customer receives and understands the City's Recycled Water Use Guide, which is currently under development by City staff. The consultant would also provide individual site supervisor training for each customer to make sure they understand the requirements for using recycled water for irrigation.

Prior to connecting sites to the recycled water system, the consultant would also perform cross-connection control testing and coverage testing for each customer site to comply with State regulations for use of recycled water.

Evaluation of Potential Industrial Uses

Multiple customers have been identified that could potentially use recycled water for industrial applications. The use of recycled water in lieu of potable water for cooling water and/or boiler feed water presents some challenges. As part of the scope of services, the consultant would evaluate the feasibility of using recycled water for industrial purposes at these locations, including a water quality requirement assessment, permitting, and needed on-site retrofit work.

Consultant Selection

The RFP was issued to five qualified firms with sufficient experience and capacity in performing this type of professional work. The RFP described the work in detail, including a map of the distribution system and sites, and the City's expectations. Since the work is very specialized, the City was selective in the firms that received the RFP to ensure that they were qualified to provide the very specific services needed. Proposals were received from two firms: HydroScience and West Yost Associates. Two firms declined to propose and another teamed with one of the submitting firms.

Staff evaluated both proposals using defined criteria, such as experience with similar successful projects, knowledge and technical expertise, and appropriateness of the cost and level of effort given the scope of project. Based on an objective evaluation, staff recommends that the City execute an agreement with HydroScience. HydroScience has specialized in planning, design, permitting and construction management for water, wastewater and recycled water projects for twenty years. This firm has performed comparable recycled water retrofit services for many public agencies, including East Bay Municipal Utility District, Dublin San Ramon Services District, and San Jose Water Company. They have retrofitted nearly 500 sites in the Bay Area to recycled water, and would bring extensive and tangible experience and skill to the City's project.

Cost for Services

Staff has negotiated a not-to-exceed amount of \$710,000 for the basic services described above, plus additional tasks, such as fire protection engineering, bid services, and services during construction. The cost for HydroScience's proposal is similar to the other proposal received and is consistent with costs incurred by other agencies for this type of work.

It is important to note that, in addition to providing design services under this agreement, HydroScience would spend significant effort in working with customers, performing site visits, training site supervisors, and conducting cross-connection control testing to confirm that the potable and recycled water systems are isolated from each other. There would also be considerable effort devoted to interacting with regulatory agencies to ensure that the retrofits meet all State requirements. The success of the City's recycled water project will depend in large part on the ability of the City's team to work closely with customers to retrofit their sites to receive recycled water. A customer's willingness to convert to recycled water, training and knowledge of the system, and a seamless transition from one system to the other will be key factors in achieving the City's objectives. The customer retrofit consultant will play a major role in this effort.

An added benefit of this project, included in the cost, is upgrading backflow prevention devices on fire lines to sites that receive recycled water. As part of the services provided by HydroScience, the retrofit design will include making sure that all backflow prevention devices on fire lines meet City standards and are located above grade so that the devices can be adequately tested on a regular basis. HydroScience would also provide assistance in ensuring that appropriate signage is in place to alert the public of the presence of recycled water, and assist City staff in complying with necessary regulatory requirements and permitting.

ECONOMIC IMPACT

The economic impact on customers would, to a large measure, depend on the total costs to implement the City's recycled water project, which include the cost to purchase recycled water from RCEC, capital costs, and operating and maintenance costs. Staff will evaluate these costs and recommend a rate structure that would provide a balance between recovering costs over the life of the project and providing an incentive for eligible customers to use recycled water. The delivery of recycled water can provide cost savings to the customers, including businesses that would receive recycled water. The benefit of this project to the community is that it will ensure a reduction in potable water use, allowing for greater diversity and reliability in the City's water supply especially during droughts.

FISCAL IMPACT

The costs associated with the design and installation of customer retrofits are included as part of the Recycled Water Storage and Distribution System Project. It is typical for agencies to pay the costs for customer retrofits upfront and recover the costs through rates. In the few instances where agencies have attempted to have customers pay for this work upfront, there

have been significant delays and struggles to sign-up customers and complete the connections.

The FY 2017 Capital Improvement Program includes \$12 million in the Sewer Improvement Capital Fund for this project. On September 13, 2016, Council authorized staff to submit a revised application for recycled water funding through the State Revolving Loan (SRF) Loan Program to fund the entire cost of the project. As described in the September 13, 2016 staff report, the project is currently in the final design phase and the estimated project cost has increased from \$12 million to approximately \$20 million due to necessary changes and refinements in the project design. As part of the FY 2018 Capital Improvement Program process, staff will revise the project budget to reflect this refined cost. Based on recent discussions with State staff, the City is currently in line to receive \$5.8 million in grant funding and \$13.5 million in low interest loans from the State's SRF program to help finance the project. The City is also pursuing federal grant funding from the US Bureau of Reclamation under Title XVI. This project will not utilize any General Fund monies and any debt service incurred will be obligated to the Water and Wastewater Enterprise Funds.

SUSTAINABILITY FEATURES

The use of recycled water will reduce the demand for potable water and improve the reliability and availability of potable water, while providing a sustainable and drought-proof water supply for some irrigation uses. It will also reduce the volume of wastewater and associated residual pollutants discharged to San Francisco Bay, which is required to meet increasingly stringent discharge regulations.

PUBLIC CONTACT

The City completed an environmental review of the recycled water project in October 2014 and a draft Initial Study/Mitigated Negative Declaration (IS/MND) was circulated for a 30-day public review from October 24, 2014 through November 24, 2014. The IS/MND was adopted on December 16, 2014, incorporating all the comments that were received. The Recycled Water Ordinance, which includes provisions for mandatory use of recycled water for appropriate irrigation and industrial uses, was introduced at a public hearing of the City Council on December 1, 2015 and adopted on December 15, 2015. Prior to the adoption of the Ordinance, a customer meeting was held on November 20, 2015 at City Hall to inform the customers about the City's proposed recycled water project.

The current list of potential recycled water customers includes: five industrial businesses; 22 commercial businesses; Chabot College; four schools (Eden Gardens Elementary School, Impact Academy High School, Lorin Eden Elementary School, and Mt. Eden High School); and four parks (Alden E. Oliver Sports Park, Christian Penke Park, Mt. Eden Park, and Rancho Arroyo Park). If the Council approves the resolution, staff and HydroScience would initiate contact with potential recycled water customers. The team plans to work closely and have regular communication with customers throughout the entire retrofit process, ensuring that customer questions and concerns are addressed and site supervisors are properly trained on the use of recycled water. Prior to the consultant preparing final design

drawings for each site, staff will work with customers to obtain agreements that would commit the customer to use recycled water and allow the City and its representatives access to the site for future installation, testing, and inspection.

Staff will also be working closely with the Hayward Unified School District and the Hayward Area Parks and Recreation District to educate their staff, governing boards, and constituents about the use of recycled water for irrigation. The consultant's scope of services also includes the optional services of a horticulturist with recycled water expertise. The horticulturist would be available to assist City staff in answering any questions or concerns customers may have on using recycled water for irrigation.

NEXT STEPS

If the Council approves the resolution, staff will proceed with execution of the professional services agreement and initiate the recycled water customer retrofit conversions.

Prepared by: Jan Lee, Water Resources Manager

Recommended by: Alex Ameri, Director of Utilities & Environmental Services

Approved by:



Kelly McAdoo, City Manager

HAYWARD CITY COUNCIL

RESOLUTION NO. 17-_____

Introduced by Council Member _____

RESOLUTION AUTHORIZING THE CITY MANAGER TO EXECUTE AN AGREEMENT WITH HYDROSCIENCE ENGINEERS, INC., FOR PROFESSIONAL SERVICES RELATED TO RECYCLED WATER CUSTOMER RETROFIT CONVERSIONS, IN AN AMOUNT NOT TO EXCEED \$710,000

WHEREAS, the City of Hayward Recycled Water Storage and Distribution Project (“Project”) would reduce the demand for potable water and provide a sustainable and drought-proof water supply for some irrigation uses; and

WHEREAS, the use of recycled water for irrigation must comply with Title 17 and Title 22 of the California Code of Regulations; and

WHEREAS, critical components of the Project include the design of customer retrofits to convert customers to recycled water, on-site customer education and, and post-construction system testing and inspection of retrofit conversions; and

WHEREAS, customer retrofit conversions require specialized expertise and knowledge of recycled water regulations and the City does not have the expertise or resources to perform this work; and

WHEREAS, a Request for Proposal for professional services was issued to qualified firms, and proposals were evaluated by City staff based on defined criteria; and

WHEREAS, HydroScience Engineers, Inc., has demonstrated technical expertise and applicable experience; and has reasonable labor hours and hourly rates; and

WHEREAS, the City has negotiated a not-to-exceed amount of \$710,000 for the requested services; and

WHEREAS, the Capital Improvement Program Sewer Improvement Fund includes sufficient funding for recycled water customer retrofit conversions.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Hayward that City Manager is hereby authorized to execute a professional services agreement with HydroScience Engineers, Inc., for professional services related to recycled water customer retrofit conversions, in an amount not to exceed \$710,000

IN COUNCIL, HAYWARD, CALIFORNIA _____, 2017

ADOPTED BY THE FOLLOWING VOTE:

AYES: COUNCIL MEMBERS:
MAYOR:

NOES: COUNCIL MEMBERS

ABSTAIN: COUNCIL MEMBERS



CITY OF HAYWARD

Hayward City Hall
777 B Street
Hayward, CA 94541
www.Hayward-CA.gov

File #: WS 17-008

DATE: February 28, 2017

TO: Mayor and City Council

FROM: Director of Public Works

SUBJECT

Mission Boulevard Corridor Improvements Phase 2 and 3 Project Update

RECOMMENDATION

That Council reviews this report and comments on the design and program plan for the Mission Boulevard Corridor Improvements Phase 2 and 3 Project.

ATTACHMENTS

Attachment I	Staff Report
Attachment II	Mission Boulevard Corridor Phases
Attachment III	Phase 2 Overall Plans
Attachment IV	Phase 3 Overall Plans



DATE: February 28, 2017

TO: Mayor and City Council

FROM: Director of Public Works

SUBJECT Mission Boulevard Corridor Improvements Phase 2 and 3 Project Update

RECOMMENDATION

That Council reviews this report and comments on the design and program plan for the Mission Boulevard Corridor Improvements Phase 2 and 3 Project.

BACKGROUND

On November 27, 2007, Council approved Phase 1 of the Route 238 Corridor Improvement Project, which covered roadway and street improvements on Mission Boulevard from A Street to Industrial Parkway and Foothill Boulevard from Mission Boulevard to Apple Avenue, and certified the Final Environmental Impact Report (FEIR) for the project. Subsequently, Caltrans relinquished portions of State Routes 92, 185, and 238 to the City within the Phase 1 project limits. During the relinquishment discussions, the City and Caltrans agreed that Caltrans would relinquish, and the City would accept, the majority of the remaining state highways within the City boundaries after the Phase 1 project was completed and after sufficient Local Area Transportation Improvement Program (LATIP) funding became available to improve these additional highway segments. Construction of the Phase 1 project was completed in January 2014. LATIP funds totaling \$30 million were approved by the California Transportation Commission (CTC) for use on all phases of this project. The CTC allocated \$8.1 million of this amount for the Route 238 Phase 1 expenses.

Phase 2 and 3 is a continuation of the Phase 1 project (see Attachment II). Phases 2 (State Route 238) and 3 (State Route 185) of the project will improve Mission Boulevard from Industrial Parkway to the south City limit near Blanche Street, and from A Street to the north City limit at Rose Street, respectively (see Attachments III and IV). On [October 28, 2014](#), Council approved an agreement with BKF Engineers for professional services to begin design work for Phase 2 and preliminary design (35%) for Phase 3. The design of Phases 2 and 3 incorporates the Complete Streets policy with infrastructure to make travel safe and convenient along and across Mission Boulevard for all users, including pedestrians, bicyclists, transit users, motorists, and trucks.

DISCUSSION

Since design work began, the project has proceeded through several design phases including completion of 65% for Phase 2 and 35% for Phase 3. The current condition of the infrastructure in both phases are generally poor. There are missing or substandard sidewalks and curb ramps. The existing traffic signals and equipment need upgrades. Furthermore, street lighting is insufficient, there are no designated bike facilities, and the pavement condition is poor. Improvements along the Mission Boulevard corridor are designed to improve multi-modal access. Specifically, improvements will include access to accommodate pedestrians, bicyclists, transit users, motorists, and trucks.

Phase 2 and 3 improvements will include the following:

- Repair or reconstruction of existing sidewalks, curbs and gutters, median islands, valley gutters, and driveways that are in poor condition or deficient
- New curb, gutter, and sidewalk in sections with missing sidewalk
- New street trees in tree wells between the curb and sidewalk
- Adjust existing driveways to conform to the new sidewalks, curbs, and gutters
- Adjust pavement, modify, and add new storm drain inlets to improve drainage
- Rehabilitate existing pavement using Cold In-place Recycling (CIR) and a new pavement overlay; the CIR method reuses the existing pavement as base material
- Upgrade intersections to comply with the latest ADA accessibility standards
- Upgrade existing traffic signals to include Adaptive Traffic Management System technology, which will improve signal timing by adapting to the traffic conditions in real time
- New signage and modifications to bus stops
- New fiber optic lines within the project limits
- New LED and dimmable street lighting
- Undergrounds of existing overhead utility lines

Improvements specific to Phase 2

- New protected bike lanes, including buffered divider planter strips
- New landscaping in the median islands and divider planter strips
- New traffic signal at Mission Boulevard/Rousseau Street and a full traffic signal at Mission Boulevard/Blanche Street
- New gateway entry features at Blanche Street

Improvements specific to Phase 3

- In each direction, one travel lane widened for shared use with bicyclists
- Improve crosswalks at uncontrolled crossings with bulb outs and flashing beacons
- New gateway entry features at Rose Street

California Public Utilities Commission Rule 20 Programs

On December 14, 2010, in anticipation of Phases 2 and 3 of the Mission Boulevard Corridor project, Council adopted Ordinances to form Underground District No. 29 (Mission Boulevard

from A Street to the north City limit) and Underground District No. 30 (Mission Boulevard from Arrowhead Way to the south City limit) to use the Rule 20A funds allocated each year to the City by PG&E to replace existing overhead utility facilities with underground facilities. Due to higher than anticipated costs for recently completed undergrounding projects and because PG&E convinced the CPUC to reduce local agency Rule 20A allocations, the City cannot complete the undergrounding work in Phases 2 and 3 using only Rule 20A funds. Staff is working on a five year borrow on the City’s Rule 20A allocations and has acquired Rule 20A allocations from the City of Corcoran. It is estimated that approximately \$2.4 million of Rule 20A funding will be available. Staff is currently working with PG&E to determine the limits of work under the Rule 20A program. The remainder of segments will be performed under Rule 20B where the project pays for the majority of the undergrounding work.

FISCAL IMPACT

Phases 2 and 3 will be funded by LATIP funds, matching funds from Measure BB and Rule 20A allocations for Underground District Nos. 29 and 30. The estimated funding breakdown are as follows:

Funding Source	Amount
LATIP	\$21,900,000
Measure BB	\$21,500,000
Rule 20A	\$2,400,000
Total	\$45,800,000

The estimated project costs are as follows:

Phase 2	Estimated Cost
Design	\$2,000,000
Utility Undergrounding	\$6,000,000
Construction	\$22,000,000
Construction Admin, Inspection, Testing	\$1,500,000
PLA/CWA	\$1,000,000
Phase 2 Project Total	\$32,500,000

Phase 3	Estimated Cost
Design	\$1,000,000
Utility Undergrounding	\$5,000,000
Construction	\$8,000,000
Construction Admin, Inspection, Testing	\$1,000,000
PLA/CWA	\$500,000
Phase 3 Project Total	\$15,500,000

Phase 2 and 3 Project Total	\$48,000,000
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Staff is working to obtain additional funding to close the \$2.2 million shortfall. Additionally, some improvements, such as the privacy fencing and the divider planter islands can be removed from the project to reduce project cost, and may be completed as part of a separate future project.

SUSTAINABILITY FEATURES

1. Water:
The project includes the installation of drought tolerant plants to reduce the amount of water usage.
2. Environment:
This project has implemented Bay-Friendly Landscaping techniques to use native plants and climate appropriate plants for the median islands and sidewalk planters. The project will be reviewed for Bay-Friendly certification after the project is complete. Permeable pavers will also be used to treat storm water runoff from the sidewalk and filters pollution from the storm water before entering the San Francisco Bay. This project will use Cold In-place Recycling to rehabilitate the pavement. The CIR method reuses the existing pavement as base material and thereby conserves on new raw material resources and reduces on greenhouse gases with reduced hauling.
3. Energy:
This project will install street lights with energy efficient LED lighting and dimming features to provide electricity and maintenance cost savings.

COMPLETE STREETS

The project will include features to make accommodations for pedestrians, bicyclists, transit riders, and motorists. Pedestrians will benefit from new sidewalks and new curb ramps. Bicyclists will have dedicated bike lanes in Phase 2 locations and sharrows lanes in Phase 3 locations. For transit users, the existing bus stops will be maintained and lighting for future bus shelters identified by AC Transit for improvements will be included in the project. For motorists, new pavement, intersection improvements, new traffic signals and traffic signal upgrades to the Adaptive Traffic Management System will help to address congestion. These proposed improvements are consistent with the City's Complete Streets Policy.

PUBLIC CONTACT

Staff held two well-attended community meetings for Phase 2, one on November 12, 2015 and a second meeting on October 20, 2016. A community meeting for Phase 3 was held on October 12, 2016. Overall, the meeting attendees were receptive of the planned improvements. In these meetings, Phase 2 residents generally liked the overall design and wanted to see more trees planted. Some community members expressed their desire for replacement of the Fairway Park signs. For Phase 3, business owners preferred that little to no trees be planted because they may block their business signs or make egress from their businesses difficult. The location of any new trees will take business signs and sight distances into consideration.

A dedicated [web page](#) to share the information about the project is available on the City's website.

SCHEDULE

The following is the tentative schedule for this project:

Phase 2

Complete Design	May 2017
Begin Construction	August 2017
Complete Construction	September 2018

Phase 3

Complete Design	October 2017
Begin Construction	January 2018
Complete Construction	November 2018

This schedule is highly dependent upon utility companies, such as PG&E and AT&T, providing the necessary support for the undergrounding design effort in a timely fashion.

NEXT STEPS

Following this work session, staff will incorporate Council's comments and return in the next few weeks to enter into a professional service agreement for the remainder of the design work for Phase 3.

Prepared by: Yaw Owusu, Assistant City Engineer

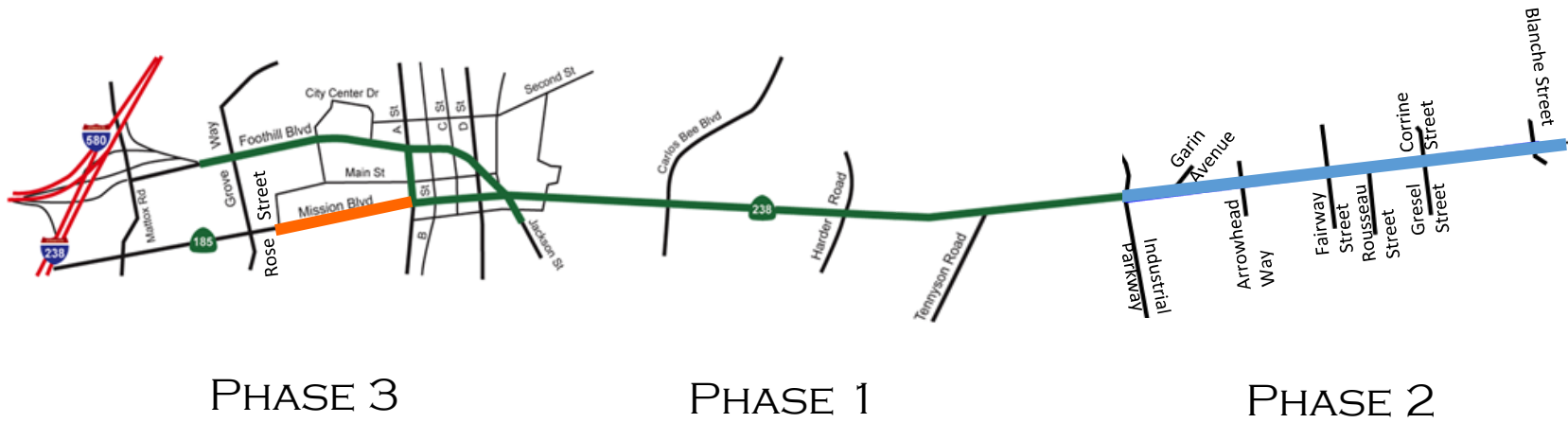
Recommended by: Morad Fakhrai, Director of Public Works

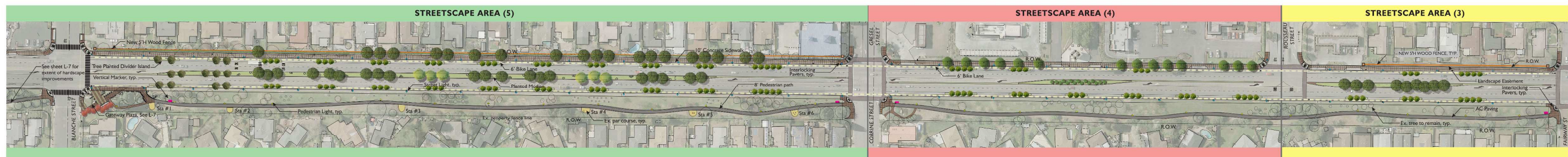
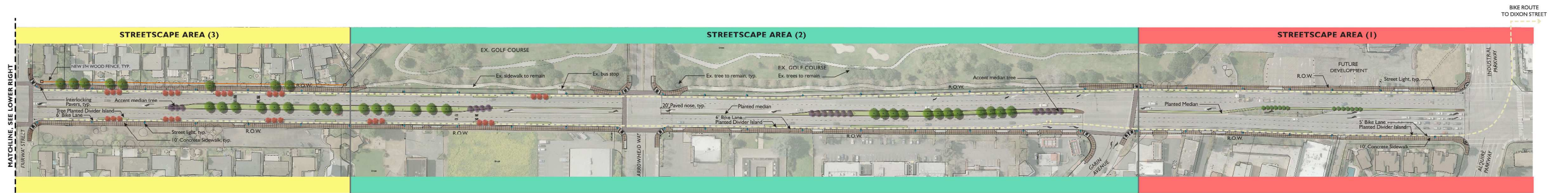
Approved by:



Kelly McAdoo, City Manager

MISSION BOULEVARD CORRIDOR PHASES

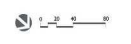




LEGEND:

TREE LEGEND:

Quercus agrifolia Coast Live Oak	Platanus acerifolia "Columbia" London Plane Tree	Olea europaea "Swanhill" (Std) Swanhill Olive Tree	Ginkgo biloba "Princeton Sentry" Princeton Sentry Maidenhair Tree
Quercus lobata Valley Oak	Legnistræmia indicæ Crape Myrtle	Acer rubrum "Armstrong" Armstrong Red Maple	Coprosma sempervirens "Sotica" Fastigate Italian Cypress



MISSION BOULEVARD CORRIDOR PHASE 3 A STREET TO ROSE STREET





CITY OF HAYWARD

Hayward City Hall
777 B Street
Hayward, CA 94541
www.Hayward-CA.gov

File #: WS 17-007

DATE: February 28, 2017

TO: Mayor and City Council

FROM: Director of Public Works

SUBJECT

Discussion of Council Priority Initiative: Complete Streets/Traffic Safety

RECOMMENDATION

That Council receives a status update, provides feedback on the Central County Complete Streets Implementation Project, and provides direction on the various elements to be included in the Council's Complete Streets/Traffic Safety Strategic Priority area prior to the development of a two-year Complete Streets/Traffic Safety Strategic Action Plan.

ATTACHMENTS

Attachment I	Staff Report
Attachment II	City of Hayward - Adopted Complete Streets Policy
Attachment III	Draft Final Complete Streets Design Guidelines
Attachment IV-a	Transportation Capital Project Complete Streets Checklist
Attachment IV-b	Development Review Complete Streets Checklist
Attachment V	Complete Streets Implementation Work Program



DATE: February 28, 2017
TO: Mayor and City Council
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RECOMMENDATION

That Council receives a status update, provides feedback on the Central County Complete Streets Implementation Project, and provides direction on the various elements to be included in the Council’s Complete Streets/Traffic Safety Strategic Priority area prior to the development of a two-year Complete Streets/Traffic Safety Strategic Action Plan.

BACKGROUND

The purpose of this staff report is twofold: One is to provide a status update and obtain feedback on the regional efforts between the City of Hayward, City of San Leandro, and Alameda County relative to the Central County Complete Streets Implementation project (Central County Project) and to obtain feedback on the Complete Streets/Traffic Safety concepts to ensure staff captures the various elements discussed at the Council retreat prior to returning to Council with a Complete Streets/Traffic Safety Strategy Action Plan.

CENTRAL COUNTY COMPLETE STREETS IMPLEMENTATION PROJECT (CENTRAL COUNTY PROJECT):

Over the last year and half, staff has been working regionally to develop the Central County Project, a regional effort between the City of Hayward, the City of San Leandro and Alameda County. The purpose of this regional effort is to develop cross jurisdictional consensus on strategies to implement respective Complete Streets policies. The City of Hayward requested consultant assistance through the Alameda County Transportation Commission’s (Alameda CTC) Sustainable Communities Technical Assistance Program to develop programs, processes, and tools to effectively implement its Complete Streets policy, which was adopted in 2013. Alameda CTC together with the cities of Hayward and San Leandro, and Alameda County, selected Kittelson and Associates as the consultant to collaborate with staff from each jurisdiction in the completion of the Central County Project.

The Central County Project has two primary purposes. First, the project seeks to develop tools and processes to support the jurisdictions in implementing Complete Streets, including tools with countywide applicability. Second, the Central County Project seeks to build internal, external, and cross-jurisdictional stakeholder consensus on necessary implementation steps to implement Complete Streets.

Complete Streets are safe, comfortable, and convenient for travel for everyone, regardless of age or ability; this includes motorists, pedestrians, bicyclists, and public transportation riders. Complete Streets can help to reduce pedestrian and bicyclist collision rates by including appropriate facilities for these users. Complete Streets can also lead to reduced greenhouse gas emissions, and has been endorsed by the Centers for Disease Control and Prevention as a strategy for reducing obesity levels.

COMPLETE STREETS/TRAFFIC SAFETY COUNCIL STRATEGIC PRIORITY AREA:

At the November 2016 City Council retreat, Council re-affirmed that Complete Streets/Traffic Safety is one of their three strategic priority focus areas or initiatives for this coming year.

The City of Hayward has two key policy documents that reflect the City's commitment to complete streets: the complete streets policy and the Mobility element described in the 2040 General Plan. While the City of Hayward has included the Complete Streets Standards in most roadway projects for several years, Council formally adopted its Complete Streets policy on March 19, 2013 to express its commitment to the use of Complete Streets principles (Attachment II).

The Hayward 2040 General Plan, approved in July 2014, also includes a goal reflecting this commitment under the Mobility Element. The Mobility Element establishes goals and policies to improve the movement of people and goods within and through the City in an effort to improve the community's economy, environment and overall quality of life. Specifically, under Mobility Goal M3, the General Plan states "Provide complete streets that balance the diverse needs of the users of the public right-of-way."

DISCUSSION

The primary goal of the Central County Project is to develop tools and processes to support the jurisdictions in implementing Complete Streets. These tools and processes will help identify needs and opportunities, and develop internal/external stakeholder coordination for implementation consistent with Hayward's adopted Complete Streets Policy. To achieve this goal, the consultant team developed a series of tools for use by City staff during the planning/scoping phase, the schematic design phase, and the final design phase of any roadway project.

A Technical Advisory Committee (TAC) consisting of staff from Hayward, San Leandro, Alameda County, Alameda CTC and AC Transit was formed. A total of five TAC meetings were held and their input was solicited in developing the approach/outline for tasks, and in the review of draft deliverables.

At the beginning of the project, the consultant team conducted a series of stakeholder interviews with Hayward staff to understand existing practices, strengths, and challenges associated with Complete Streets implementation in Hayward. Based on the feedback

received, the following tools were developed and refined for each jurisdiction's unique requirements.

- Design Guidelines
- Project Checklists
- Training Sessions
- Implementation Work Program

Design Guidelines

The Complete Streets Design Guidelines document helps ensure that Hayward street designs consider the full range of users on every street and accommodate these users wherever possible. The goal of the design guidelines is to help staff clearly understand how to implement Complete Streets for each street type, for different modal priorities, and for varying land use contexts.

Based on these three elements, the Complete Streets Design Guidelines identify recommended dimensions for street components and a range of design treatments that may be applicable for a given street. The Complete Streets Design Guidelines also include technical design guidance for specific treatments to benefit pedestrians, bicyclists, transit users, and/or goods movement.

City staff will utilize the Complete Streets Design Guidelines document for local transportation capital projects ranging from sidewalk repair and street resurfacing to new street construction and street reconstruction. The draft final Complete Streets Design Guidelines are included as Attachment III.

Complete Streets Checklists

To aid in Hayward's implementation of Complete Streets principles on a project-by-project basis, checklists have been developed for use by City staff; one for transportation capital projects and the other for development review. Both checklists are included as Attachment IV.

Transportation Capital Project Checklist

This checklist is designed to assist City staff with identifying and assessing a range of Complete Streets related needs and opportunities throughout the capital project development process. The checklist is also intended to serve as documentation of Complete Streets-related elements and decisions, including exceptions from the adopted Complete Streets policy. This transportation capital project checklist is designed to be completed over three separate phases: the planning/scoping phase; the schematic design phase; and the final design phase. Similar to the Complete Streets Design Guidelines, the checklist is designed to be used for a range of projects, including sidewalk repair, street resurfacing, new street construction and street reconstruction.

Following the completion of the checklist, City staff will identify any items requiring follow-up discussion or further review regarding potential project changes or

enhancements noted in the checklist. For Complete Streets exceptions identified through the checklist, staff will ensure the exceptions and justifications are sufficiently documented and communicated to community stakeholders.

Development Review Project Checklist

The development review checklist is designed to assist development applicants and City staff in identifying and assessing a range of Complete Streets-related needs in the vicinity of each development. These needs, if addressed, would better serve the multimodal transportation needs of those accessing the site and the surrounding area. The checklist is to be completed during the pre-application phase, but can be used as a reference throughout the development and design of the project. Following completion of the checklist, City staff will identify and document potential modifications to the proposed project and potential improvements to the surrounding area to address project access by pedestrians, bicyclists, transit users, goods movement and/or automobiles.

Training Sessions

As part of the Central County Project, the consultant will lead a training session for City staff. One session will be held for each Central County jurisdiction (Hayward, San Leandro and Alameda County). The objectives of the session are to familiarize staff with the use of the Complete Streets Design Guidelines and project checklists, to educate staff regarding the range of implementation opportunities, and to reinforce each jurisdiction's commitment to Complete Streets implementation.

Central County Complete Streets Implementation Work Plan:

The Central County Complete Streets Implementation Plan identifies a five-year plan to implement Hayward's Complete Streets Policy, which will: (1) incorporate complete streets principles throughout all project phases; (2) address institutional and organizational barriers to Complete Streets implementation; and (3) complete ongoing monitoring and reporting of Complete Streets implementation (Attachment V).

While staff began the regional coordination of a cross-jurisdictional strategy to implement complete streets policies between Hayward, San Leandro and Alameda County over a year and half ago, and would like Council's feedback on that work, the Council's reaffirmation at their November 2016 retreat that Complete Streets/Traffic Safety is one of three Council strategic priority focus areas, provides staff the opportunity to develop a more specific Complete Streets two-year action plan to implement this strategic priority area. Staff requests Council feedback on the various elements of the Complete Streets principles prior to returning with a two-year action plan (or work plan) for Council consideration. Some of those elements may include the following:

1. Update the Bicycle Master Plan
2. Develop a citywide Pedestrian Master Plan
3. Develop multi-modal level of service standards for City Council to adopt.
4. Complete Citywide Intersection Improvement Study (after items 1-3 are developed)

In an effort to meet City Council's directive and assist in implementing complete streets in Hayward, staff is requesting Council to provide feedback/input on the following questions:

- Does the Council agree that the overall process for identifying and incorporating complete streets project elements in planning/design phase (as outlined in the Central County Project) is adequate?
- Are there specific elements of complete streets that the City Council wants to prioritize? For example – Bike Vs. Pedestrian (transportation modes) or Downtown Vs. Industrial (areas of the City where Complete Streets are a higher priority)?
- Are there any other Complete Streets elements that Council would like included in the two-year Complete Streets/Traffic Safety strategic action plan?

FISCAL IMPACT

The fiscal impact of Complete Streets implementation will vary based on the project and the timeframe being considered. For individual projects, there may be cases where Complete Streets elements have not traditionally been included. In these cases, there may be an added cost as these elements are constructed and maintained.

There is no direct economic or fiscal impact associated with the discussion of the Complete Streets/Traffic Safety Council Priority Initiative. However, implementation of the above listed components (and any others suggested by Council) will require further discussion on resource allocation and funding to support such priorities. Tonight's discussion and Council prioritization of work efforts is the first step in determining whether additional resources are necessary to implement the programs/projects identified.

SUSTAINABILITY FEATURES

The project will provide for citywide implementation of Complete Streets elements that balance the diverse needs of users of the public right-of-way. Additionally, the Complete Streets Design Guidelines include design details that address how green infrastructure and storm water treatments can be incorporated into the street cross section. As stated earlier, the use of Complete Streets principles can potentially reduce greenhouse gas emissions by promoting bicycle and pedestrian circulation as a safe and viable alternative to automobile use.

PUBLIC CONTACT

The Central County Project is a technical assistance project focused on tools for agency staff. Most tools developed as part of the project were to establish and streamline internal processes for implementation of complete streets. However, design guidelines are an inherent

part of this tool box that do require input from the community. Staff envisions receiving input from the community in the following manner:

- Receiving input on the design guidelines as part of the “Design Charrette” to be held for the Downtown Specific Plan in mid-March. This will provide context for how the recommended design guidelines will impact plans and projects in the future.
- The recommended design guidelines will be incorporated into relevant documents as they are updated. For example, Bicycle and Pedestrian related treatments will be incorporated into the updated citywide Bicycle and Pedestrian Master Plan scheduled for next year. During the community outreach events for these master plans, there will be several opportunities to comment and/or provide feedback on the design guidelines as they pertain to bicycle and pedestrian facilities. Similarly, this will also be done for updating other adopted design documents and plans.

Additionally, community input is also solicited on a project-by-project basis for major capital projects, where stakeholders/community can comment on specific design items. A good example for this type of outreach is the Route 238 Phase 2 & 3 project, where the community has had several opportunities and provided input on various items including bike lanes, sidewalks and streetlights.

NEXT STEPS

Following this work session, staff will incorporate Council’s comments on the Central County Complete Streets Implementation Project, as well as ensure the key priority elements of Complete Streets are included in a two-year Complete Streets/Traffic Safety Strategic action plan that will be brought back for Council consideration for adoption and inclusion in the 2018 budget along with an assessment of resource needs.

Prepared by: Abhishek Parikh, Senior Transportation Engineer

Recommended by: Morad Fakhrai, Director of Public Works

Approved by:



Kelly McAdoo, City Manager

HAYWARD CITY COUNCIL

RESOLUTION NO. 13-027

Introduced by Council Member Halliday

RESOLUTION OF THE CITY OF HAYWARD ADOPTING A
COMPLETE STREETS POLICY

WHEREAS, the term “Complete Streets” describes a comprehensive, integrated transportation network with infrastructure and design that allows safe and convenient travel along and across streets for all users, including pedestrians, bicyclists, persons with disabilities, motorists, movers of commercial goods, users and operators of public transportation, emergency vehicles, seniors, children, youth, and families; and

WHEREAS, the lack of Complete Streets is dangerous for pedestrians, bicyclists, and public transportation riders, particularly children, older adults, and persons with disabilities; more than 4,000 pedestrians and bicyclists died on roads in America in 2009, and more than 110,000 were injured, and more than 20% of traffic-related fatalities in California involved bicyclists or pedestrians; many of these injuries and fatalities are preventable, and the severity of these injuries could readily be decreased by implementing Complete Streets approaches; and City of Hayward wishes to ensure greater safety for those traveling its streets and roads; and

WHEREAS, City of Hayward acknowledges the benefits and value for the public health and welfare of reducing vehicle miles traveled and increasing transportation by walking, bicycling, and public transportation, which can help address a wide variety of challenges, including pollution, climate change, traffic congestion, social isolation, obesity, physical inactivity, limited recreational opportunities, sprawl, safety, and excessive expenses; and

WHEREAS, sedentary lifestyles and limited opportunities to integrate exercise into daily activities are factors contributing to increased obesity among adults and children and the consequences of obesity, such as diabetes, heart disease, stroke, high blood pressure, high cholesterol, certain cancers, asthma, low self-esteem, reduced academic performance, depression, and other debilitating diseases; and

WHEREAS, City of Hayward recognizes that the careful planning and coordinated development of Complete Streets infrastructure provides long-term cost savings for local governments by reducing road construction, repair, and maintenance costs and expanding the tax base; improves public health and lowers health care expenses; provides financial benefits to property owners and businesses; and decreases air and water pollution; in contrast, the lack of Complete Streets imposes significant costs on government, employers, and individuals, including the cost of obesity, overweight, and physical inactivity, which likely amount to \$28 billion annually in California in medical expenses, workers’ compensation, and lost productivity; and

WHEREAS, the State of California has emphasized the importance of Complete Streets by enacting the California Complete Streets Act of 2008 (known as AB 1358), which requires that when cities or counties revise general plans, they identify how they will provide for the routine accommodation of all users of the roadways, as well as through Deputy Directive 64, in which the California Department of Transportation explained that it “views all transportation improvements as opportunities to improve safety, access, and mobility for all travelers in California and recognizes bicycle, pedestrian, and transit modes as integral elements of the transportation system”; and

WHEREAS, the California Global Warming Solutions Act of 2006 (known as AB 32) sets a mandate for the reduction of greenhouse gas emissions in California to slow the onset of human-induced climate change, and the Sustainable Communities and Climate Protection Act of 2008 (known as SB 375) requires emissions reductions through coordinated regional planning that integrates transportation, housing, and land-use policy, and achieving the goals of these laws will require significant increases in travel by public transit, bicycling, and walking; and

WHEREAS, 35% of Californians do not drive, including a disproportionate number of older adults, low-income people, people of color, people with disabilities, and children, and the insufficient and inequitable availability of safe alternative means of travel adversely affects their daily lives; and

WHEREAS, the dramatic increase in the population of older and very old adults that will be seen by 2020 and 2030, with the concomitant decrease in driving, requires that changes begin to occur now to street design and transportation planning to accommodate more walking, bicycling and public transit; and

WHEREAS, numerous California counties, cities, and agencies have adopted Complete Streets policies and legislation in order to further the health, safety, welfare, economic vitality, and environmental well-being of their communities; and

WHEREAS, City of Hayward therefore, in light of the foregoing benefits and considerations, wishes to improve its commitment to Complete Streets and desires that its streets form a comprehensive and integrated transportation network promoting safe, equitable, and convenient travel for all users while preserving flexibility, recognizing community context, and using the latest and best design guidelines and standards.

NOW, THEREFORE, BE IT RESOLVED, by the City Council of the City of Hayward, State of California, as follows:

1. That the City of Hayward adopts the Complete Streets Policy attached hereto as Exhibit A, and made part of this Resolution, and that said exhibit is hereby approved and adopted.
2. That the next substantial revision of the City of Hayward General Plan circulation

element shall take place by June, 2014, and shall incorporate Complete Streets policies and principles consistent with the California Complete Streets Act of 2008 (AB 1358) and with the Complete Streets Policy adopted by this resolution.

BE IT FURTHER RESOLVED, that this Complete Streets policy is effective June 30, 2013.

IN COUNCIL, HAYWARD, CALIFORNIA March 19, 2013.

ADOPTED BY THE FOLLOWING VOTE:

AYES: COUNCIL MEMBERS: Zermeño, Jones, Halliday, Peixoto, Salinas, Mendall
MAYOR: Sweeney

NOES: COUNCIL MEMBERS: None

ABSTAIN: COUNCIL MEMBERS: None

ABSENT: COUNCIL MEMBERS: None

ATTEST: *Miriam Lens*
City Clerk of the City of Hayward

APPROVED AS TO FORM:

Michael S. ...
City Attorney of the City of Hayward



I hereby certify that this is a correct copy of a document on file in this office

MIRIAM LENS

City Clerk, City of Hayward, California

By: *Miriam Lens*
City Clerk

Date: April 23, 2013

Exhibit A

This Complete Streets Policy was adopted by Resolution No. 13-027 by the City Council of the City of Hayward on March 19, 2013.

COMPLETE STREETS POLICY OF CITY OF HAYWARD**A. Complete Streets Commitments.**

1. **Complete Streets Serving All Users.** The City of Hayward expresses its commitment to creating and maintaining Complete Streets that provide safe, comfortable, and convenient travel along and across streets (including streets, roads, highways, bridges, and other portions of the transportation system) through a comprehensive, integrated transportation network that serves all categories of users, including pedestrians, bicyclists, persons with disabilities, motorists, emergency vehicles, movers of commercial goods, users and operators of public transportation, seniors, children, youth, and families.
2. **Complete Streets Infrastructure.** The City of Hayward recognizes the importance of Complete Streets infrastructure and modifications that enable safe, convenient, and comfortable travel for all categories of users, including but not limited to sidewalks, shared use paths, bicycle lanes, bicycle routes, paved shoulders, street trees and landscaping, planting strips, accessible curb ramps, crosswalks, refuge islands, pedestrian signals, signs, street furniture, bicycle parking facilities, public transportation stops and facilities, transit priority signalization, and other features assisting in the provision of safe travel for all users, such as traffic calming circles, raised medians, dedicated transit lanes, transit bulb outs, and road diets.
3. **Context Sensitivity.** In planning and implementing street projects, departments of the City shall maintain sensitivity to local conditions in both residential and business districts as well as urban, suburban, and rural areas, and shall work with residents, merchants, and other stakeholders to ensure that a strong sense of place ensues.

B. Safe Travel Requirements.

1. **Complete Streets Routinely Addressed by All Departments.** All relevant departments of the City shall work towards making Complete Streets practices a routine part of everyday operations, approach every relevant project, program, and practice as an opportunity to improve streets and the transportation network for all categories of users, and work in coordination with other departments, agencies,

and jurisdictions to maximize opportunities for Complete Streets, connectivity, and cooperation.

2. Complete Streets Required.

- a. All Projects and Phases.** Complete Streets infrastructure sufficient to enable reasonably safe travel along and across the right of way for each category of users shall be incorporated into all planning, funding, design, approval, and implementation processes for any construction, reconstruction, retrofit, maintenance, operations, alteration, or repair of streets (including streets, roads, highways, bridges, and other portions of the transportation system), except that specific infrastructure for a given category of users may be excluded if an exemption is approved via the process set forth in section B.3 of this policy.
- b. Complete Streets in Routine Work and Projects.** Relevant departments shall improve Complete Streets and street functionality for all categories of users as part of routine work or projects involving pavement resurfacing, restriping, accessing above and underground utilities, signalization operations, or maintenance of landscaping or other features, unless an exemption is approved via the process set forth in section B.3 of this policy.
- c. Plan Consultation and Consistency.** Maintenance, planning, and design of projects affecting the transportation system shall be consistent with local bicycle, pedestrian, transit, multimodal, and other relevant plans, except that where such consistency cannot be achieved without negative consequences, consistency shall not be required if the Director of Public Works - Engineering and Transportation provides written approval explaining the basis of such deviation.

3. Leadership Approval for Exemptions. Specific infrastructure for a given category of users may be excluded where all of the following conditions are met:

- a.** Supporting data and documentation are assembled indicating one of the following bases for the exemption:

 - 1.** Use by a specific category of users is prohibited by law;
 - 2.** The cost for specific infrastructure would be excessively disproportionate to the need and probable future use over the long term (costs in excess of 20% of project total may be regarded as evidence that cost is excessively disproportionate, as set forth by the United States Department of Transportation in its policy statement on accommodating bicycle and pedestrian travel);

3. There is an absence not only of current need, but also of future need (absence of future need may be shown via demographic, school, employment, and public transportation route data that demonstrate a low likelihood of bicycle, pedestrian, or transit activity in an area over the next 10 to 20 years); or
 4. Significant adverse impacts outweigh the positive effects of the infrastructure; and
- b. The proposed exemption, as well as the supporting data and documentation, is made publicly available prior to approval of the project design by the Director of Public Works – Engineering and Transportation; and
 - c. The proposed exemption is approved by the City Council; and
4. **Street Network/Connectivity.** As feasible, the City shall incorporate Complete Streets infrastructure into existing streets to improve the safety and convenience of users and to create employment, with the particular goal of creating a connected network of facilities accommodating each category of users, and increasing connectivity across jurisdictional boundaries and for existing and anticipated future areas of travel origination or destination.
- C. Policies, Plans, and Studies.**
1. **Revising Policies and Plans.** All relevant departments are hereby directed to assess additional steps and potential obstacles to implementing Complete Streets in the City of Hayward and to recommend proposed revisions to all appropriate plans, zoning and subdivision codes, laws, procedures, rules, regulations, guidelines, programs, templates, and design manuals to integrate, accommodate, and balance the needs of all categories of users in all projects.
 2. **Studies.** All initial planning and design studies, health impact assessments, environmental reviews, and other project reviews for projects requiring funding or approval by the City Council shall: (1) evaluate the effect of the proposed project on safe, comfortable, and convenient travel by all categories of users, and (2) identify measures to mitigate any adverse impacts on such travel that are detected.
- D. Performance Standards, Evaluation, and Reporting.** The following steps shall be taken to support implementation of Complete Streets goals:
1. **Performance Standards.** All relevant agencies or departments shall put into place performance standards with measurable outcomes to assess safety, comfort, actual use, and functionality, particularly with regard to the development of a bicycle and pedestrian network, for each category of users.

2. **Evaluation.** All relevant departments shall perform evaluations of how well the streets and transportation network of the City are serving each category of users by collecting baseline data in 2013 and collecting follow-up data on a biannual basis, including data that:
 - a. Track performance standards, including new miles of bicycle lanes, sidewalks, and street trees or plantings, number of new curb ramps, improved crossings, and signage;
 - b. Measure latent demand and existing levels of service for different modes of transport and categories of users, including public transportation ridership;
 - c. Track collision statistics by neighborhood and mode of transportation, and bicycle and pedestrian injuries and fatalities;
 - d. Assess the safety, functionality, and actual use of the neighborhoods and areas within the City of Hayward by each category of users.
 - e. Assess the number of bicycle, pedestrian and transit users and how this changes over time as more infrastructures are built to create a network.

3. **Reporting.** The Director of Public Works – Engineering and Transportation shall provide an annual report to the City Council summarizing how well the City is implementing Complete Streets, with the report including: the performance standards and goals from section D.1 of this policy; the evaluations from section D.2 of this policy, with an assessment of the evaluation data; and a list and map of street projects undertaken in the past year, with a brief summary of the Complete Streets infrastructure used in those projects and, if applicable, the basis for excluding Complete Streets infrastructure from any projects.



CENTRAL COUNTY COMPLETE STREETS DESIGN GUIDELINES

Final Complete Streets Design Guidelines
October 4, 2016

Central County Complete Streets Design Guidelines

Final Complete Streets Design Guidelines
October 4, 2016

Prepared by:

Kittelson and Associates, Inc.

PlaceWorks

Spokemore Consulting

Emergent Transportation Systems

With Alameda County Transportation Commission



The work upon which this publication is based was funded in whole through the Alameda County Transportation Commission (Alameda CTC) Sustainable Communities Technical Assistance Program (SC-TAP). SC-TAP is funded by One Bay Area Grant program federal funding and local Measure B funding.

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1. INTRODUCTION

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As jurisdictions use and reference this Complete Streets Design Guidelines document for their local projects, City engineers should also apply their technical expertise and professional judgment. Other street design documents may also be referenced as a supplement to designing complete streets projects. All complete streets projects should reflect input from the community, stakeholders, and decision makers.

INTRODUCTION

As part of the Alameda County Central County Complete Streets Implementation project (CCCS), this Complete Streets Design Guidelines document helps ensure that Central County street designs consider the full range of users on every street and accommodate these users wherever possible. The goal of these design guidelines is to help staff from the three Central County jurisdictions (San Leandro, Hayward, and Alameda County) clearly understand how to implement complete streets for each street type, for different modal priorities, and for varying contexts.

Planning Context

The Central County Complete Streets Design Guidelines seek to build on the street typology developed as part of the Alameda County Transportation Commission (Alameda CTC) Multimodal Arterial Plan (MAP). Through the MAP, Alameda CTC – in close partnership with local jurisdictions, transit operators, and other stakeholders – developed a typology that extends across the entire arterial and collector network in Alameda County.

The MAP street typology consists of three primary components: a street type overlay that classifies streets according to whether vehicular traffic is primarily regional or local serving; a land use overlay that classifies streets according to the fronting land use; and a multimodal overlay that identifies whether the street is part of a designated transit, bicycle, or truck route, or is an area of high pedestrian emphasis. Based on these three components, each arterial and collector street segment is assigned a hierarchical modal priority. Each of the five major modes (auto, transit, bike, pedestrian, and trucks) was ranked 1 through 5 for each street segment. The modal priority seeks to clarify which modes receive limited right-of-way or control parameters such as design speed. It should be noted that multiple modes may be accommodated on a street, even if the mode is not the highest priority. Depending on available right-of-way, a lower priority mode may mean that the mode receives a less dedicated facility or a more limited allocation of space, or may not be accommodated.

The MAP document is intended to provide a planning framework. It is anticipated that as the plan is implemented via project-level design development and community engagement, specific recommendations may evolve. Designers should think through the most appropriate selection of dimensions and project elements for a particular street and location, and the MAP is not intended to preclude context sensitive design.

and not conflict with the first modal priority's design considerations. For example, based on D Street's second modal priority (bicycle), the designer might opt for a wider bike lane than they would based only on the first modal priority (pedestrian).

3. Designers should consult local bicycle and pedestrian plans for local corridor street designs.
4. The final section of the document is a glossary of design guideline details to be used in the design and implementation of various complete street components.

The Central County Complete Streets Design Guidelines utilize the modal priorities and land use classifications assigned to the Central County Street Network through the MAP. These priorities are used to help a designer identify appropriate allocation of right-of-way width, relationship of street zones to each other, and selection of design elements in a logical series of steps, as discussed below.

How to Use this Document

This Complete Streets Design Guidelines document provides guidance for complete streets implementation on arterial, collector, and local streets in Central County. Figure 1 shows the structure and flow of this document. Design Considerations for arterial and collector streets are classified by highest modal priority and local streets are classified by land use typology.

Before referencing this document, the designer should first determine the highest modal priority and/or land use typology for a given corridor, using the MAP maps on Figures 2 and 3. Zoomed in maps for focus areas are provided on Figures 4, 6, 8, and 10. On these maps, every arterial and collector street located within the Central County is color coded to show its assigned first modal priority for either auto, bicycle, pedestrian, transit, or trucks. Furthermore, all lands in the Central County area are color coded by land use typology; a local corridor's land use typology is determined by its location.

1. After identifying the corridor's highest modal priority or land use typology, the designer should begin by reviewing the corridor's applicable Street Type Illustrative Section, which provides a general understanding of the intended spatial relationships of the various street components or "zones." Each Street Type Illustrative Section contains recommended zone widths based on modal priority or connections between opposite sidewalks.
2. Next, the designer should refer to the appropriate Street Type Design Consideration sheet, which provides a list of design considerations for each street zone, cross-referencing relevant design guideline details. Zones include a Pedestrian Zone, Curb Zone, Bicycle Zone, Parking Zone, Vehicle Zone, Median Zone, and Crossing Zone.

The designer should also review the design considerations for a corridor's second (see Figures 5, 7, 9, and 11) and even third modal priorities. For example, D Street (from Mission Boulevard to 1st Street) is shown as a Pedestrian Priority corridor, with the second modal priority being Bicycle Priority. This would involve referencing the second modal priority's Street Type Design Consideration sheet and choosing to incorporate any design considerations that would be allowable within the street's right-of-way

STREET ZONE DEFINITIONS

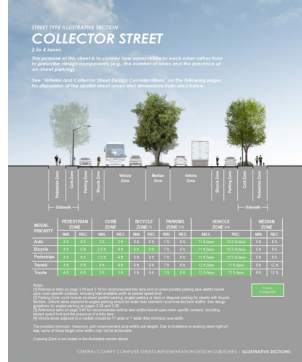
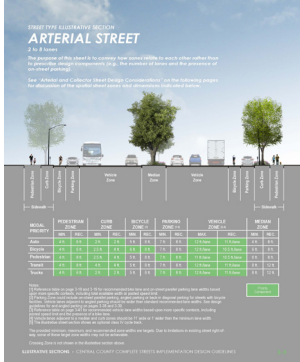
Pedestrian Zone	The pathway on the sidewalk accessible for pedestrian travel, measured from back of sidewalk to curb zone.
Curb Zone	The area of the sidewalk that buffers the Pedestrian Zone from the roadway. It is measured from the pedestrian zone to face of the curb. This zone can contain street furnishings, landscaping, bike parking, bus stops, utilities, etc.
Bicycle Zone	The designated area on the roadway for bicycle travel and right-of-way. This zone is often delineated by striping and pavement markings.
Parking Zone	The area of the roadway designated for on-street parking. This zone is adjacent to the sidewalk to provide close access from the parked vehicle to the Pedestrian Zone.
Vehicle Zone	The area of the roadway where motorized vehicles, such as cars, buses, and trucks, travel. This zone varies in number of travel lanes depending on the street type and land use typology context.
Median Zone	The buffer on the roadway separating two vehicle zones, measured from face of the curb to face of the curb. This zone often contains landscaping and provides traffic calming on wider streets.
Shared Vehicle and Bicycle Zone	This zone is used and shared between motorized vehicles and bicycles. Bicyclists should ride closer to the adjacent curb, while drivers should yield to a bicyclist's speed or maintain an adequate distance when passing.
Crossing Zone	The area on the street that provides access for pedestrians to travel across roadways. This zone includes street intersections as well as crossing connections between opposite sidewalks.

FIGURE 1 DESIGN GUIDELINES STRUCTURE ORGANIZATION

STREET TYPE ILLUSTRATIVE SECTIONS

1

The Illustrative Sections provide an overview of each street type: arterial, collector, and local. This overview includes the relevant street zones, the min./max. and recommended widths of the street zones, and typical number of vehicle lanes.



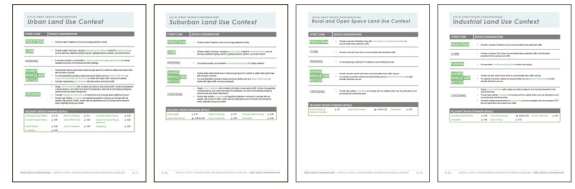
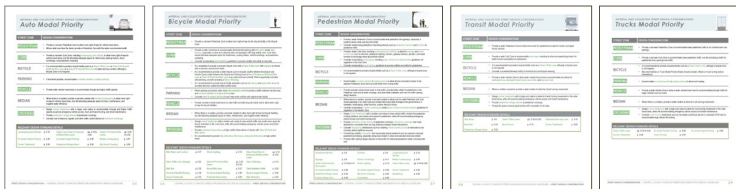
STREET TYPE DESIGN CONSIDERATIONS

2

The Design Considerations are classified by either modal priority or land use typology for each street type. They provide guidance on the types of facilities that should be considered for each street zone. Design guideline details are cross-referenced in a table at the bottom of each page.

by Modal Priority

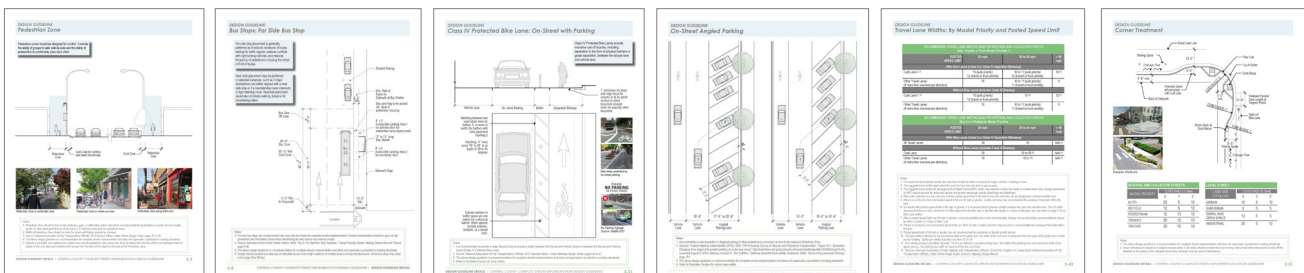
by Land Use Typology



DESIGN GUIDELINE DETAILS

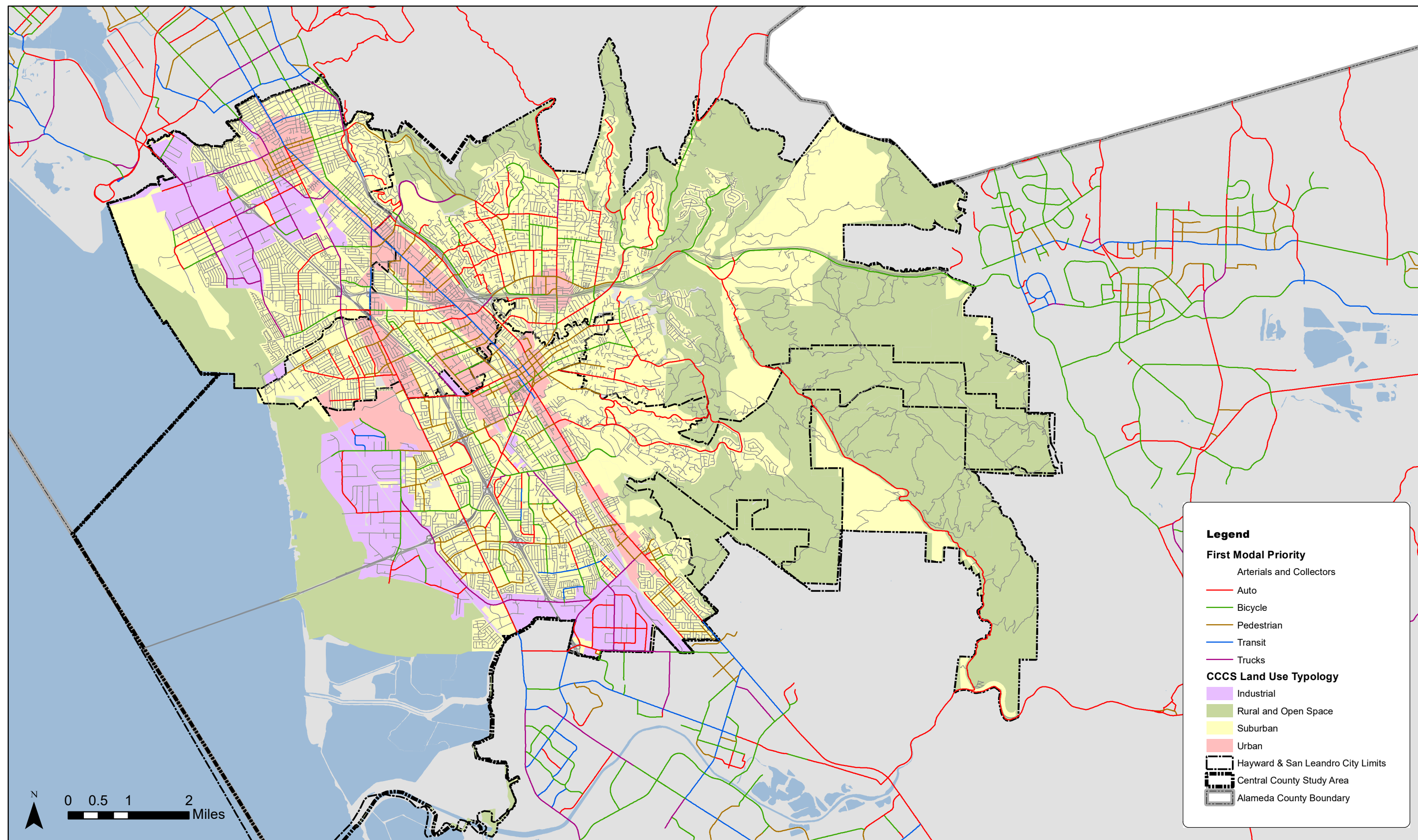
3

The Design Guideline Details provide detailed drawings of facilities referenced in the Design Considerations chapter. Drawings may also show variation in design depending on other factors, including land use context, street location, speed limit, and others.



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FIGURE 2 MULTIMODAL ARTERIAL PLAN FIRST MODAL PRIORITY AND LAND USE TYPOLOGY MAP FOR CENTRAL COUNTY

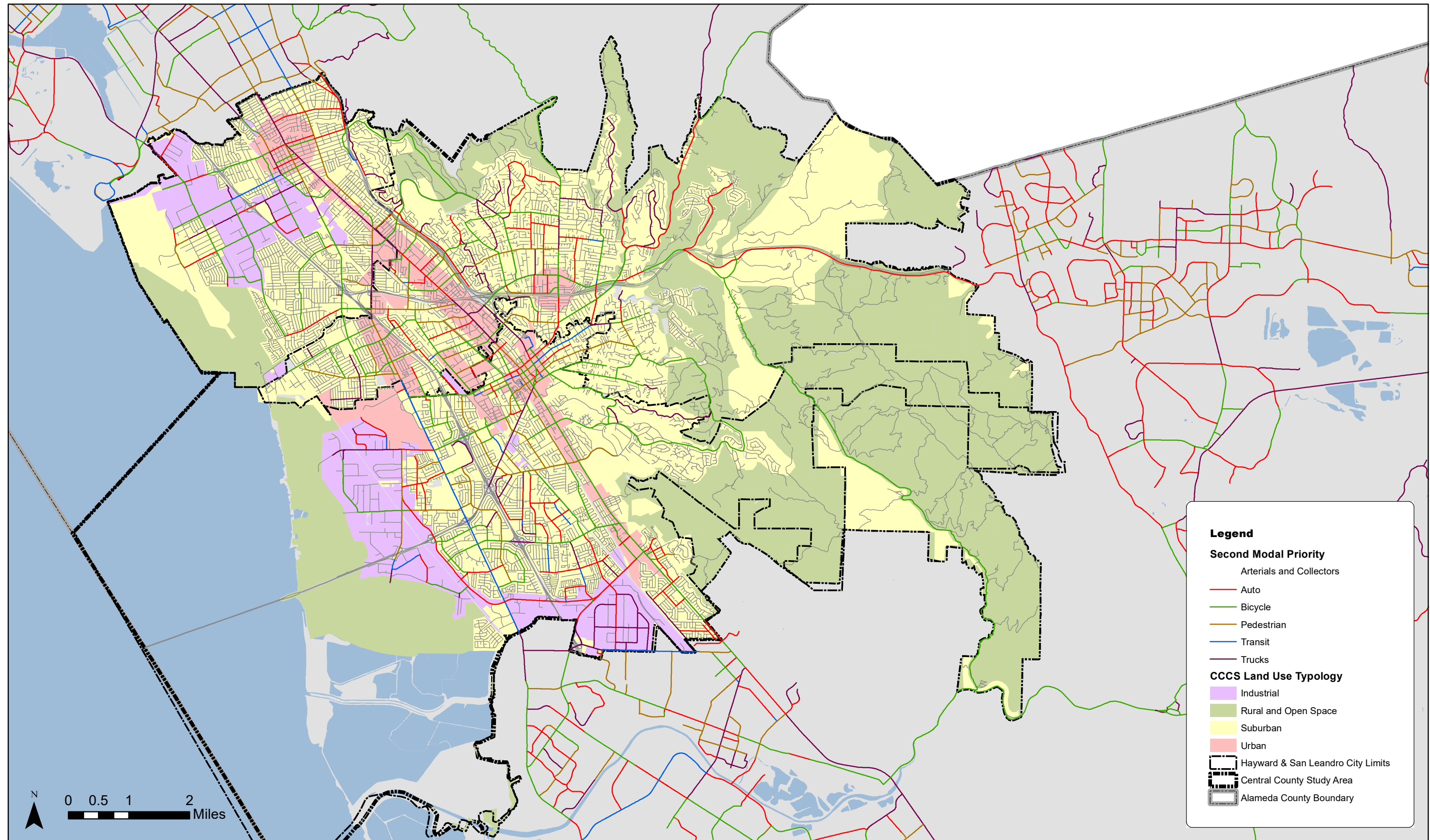


August 10, 2016

Alameda CTC Central County Complete Streets Typology

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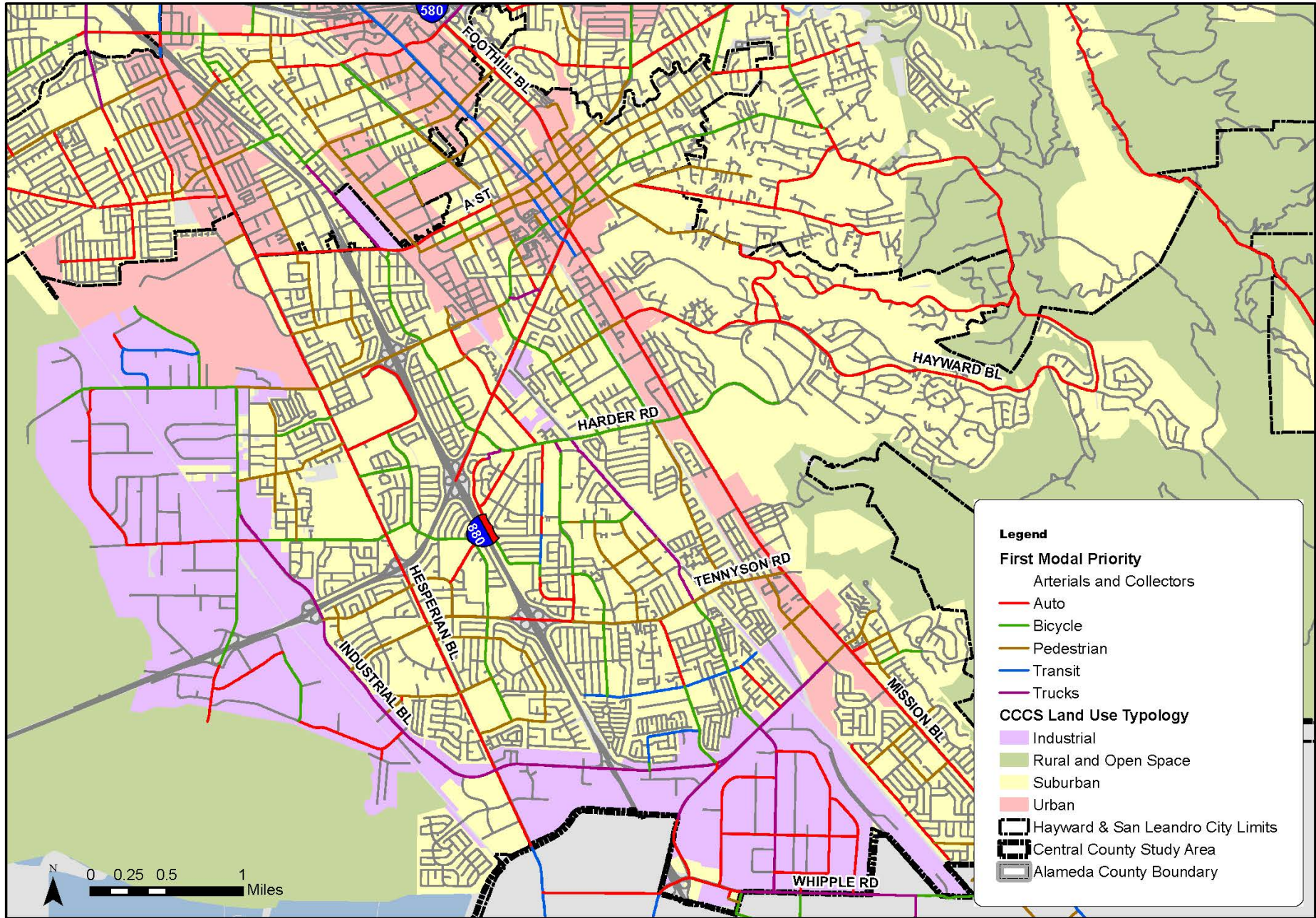
FIGURE 3 MULTIMODAL ARTERIAL PLAN SECOND MODAL PRIORITY AND LAND USE TYPOLOGY MAP FOR CENTRAL COUNTY



August 10, 2016

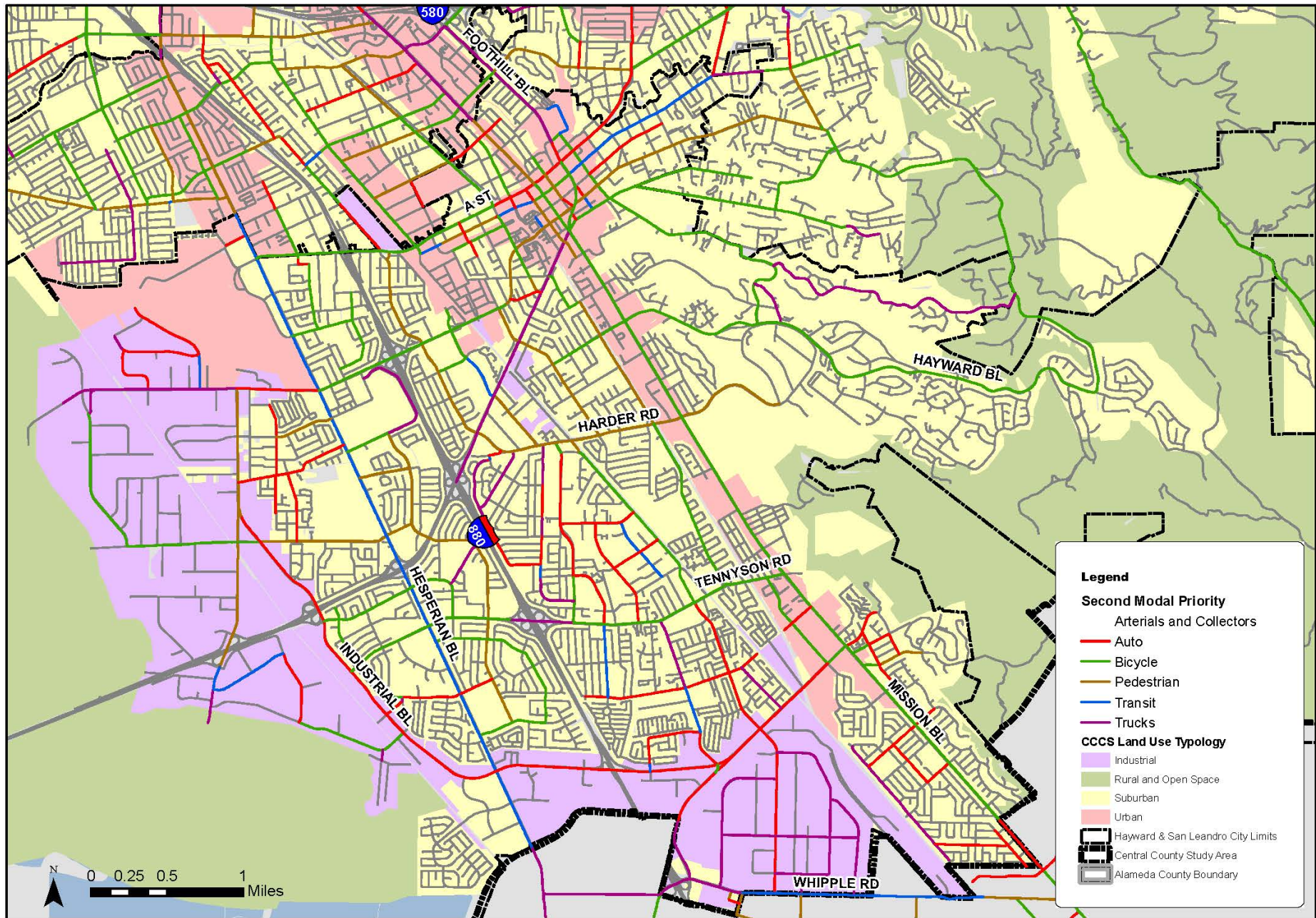
Alameda CTC Central County Complete Streets Typology

FIGURE 4 CITY OF HAYWARD: FIRST MODAL PRIORITY



September 29, 2016

FIGURE 5 CITY OF HAYWARD: SECOND MODAL PRIORITY



September 29, 2016

2. STREET TYPE

ILLUSTRATIVE SECTIONS & DESIGN CONSIDERATIONS

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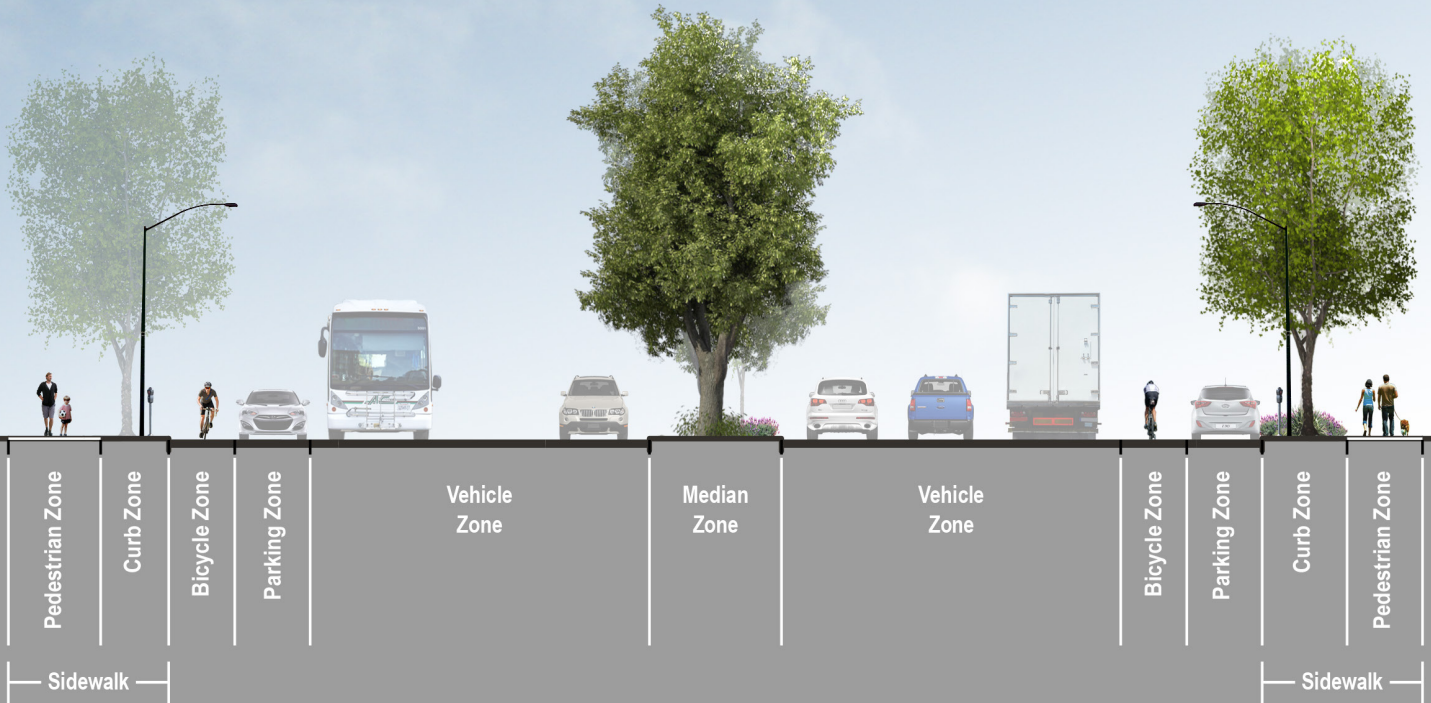
STREET TYPE ILLUSTRATIVE SECTION

ARTERIAL STREET

2 to 8 lanes

The purpose of this sheet is to convey how zones relate to each other rather than to prescribe design components (e.g., the number of lanes and the presence of on-street parking).

See “Arterial and Collector Street Design Considerations” on the following pages for discussion of the spatial street zones and dimensions indicated below.



MODAL PRIORITY	PEDESTRIAN ZONE		CURB ZONE		BICYCLE ZONE ^[1]		PARKING ZONE ^[1,2]		VEHICLE ZONE ^[3,4]		MEDIAN ZONE	
	MIN.	REC.	MIN.	REC.	MIN.	REC.	MIN.	REC.	MAX.	REC.	MIN.	REC.
Auto	4 ft.	6 ft.	2 ft.	2 ft.	5 ft.	8 ft.	7 ft.	8 ft.	12 ft./lane	11 ft./lane	4 ft.	8 ft.
Bicycle	4 ft.	6 ft.	2.5 ft.	4 ft.	6 ft.	8 ft.	7 ft.	8 ft.	12 ft./lane	10.5 ft./lane	6 ft.	8 ft.
Pedestrian	4 ft.	8 ft.	2.5 ft.	4 ft.	5 ft.	8 ft.	7 ft.	8 ft.	11 ft./lane	10.5 ft./lane	6 ft.	8 ft.
Transit	4 ft.	8 ft.	4 ft.	4 ft.	5 ft.	8 ft.	7 ft.	8 ft.	12 ft./lane	11 ft./lane	8 ft.	12 ft.
Trucks	4 ft.	6 ft.	2 ft.	2 ft.	5 ft.	8 ft.	7 ft.	8 ft.	12 ft./lane	11 ft./lane	8 ft.	12 ft.

Notes:

- [1] Reference table on page 3-18 and 3-19 for recommended bike lane and on-street parallel parking lane widths based upon more specific contexts, including total available width or posted speed limit.
- [2] Parking Zone could include on-street parallel parking, angled parking or back-in diagonal parking for streets with bicycle facilities. Vehicle lanes adjacent to angled parking should be wider than standard recommended lane widths. See design guidelines for and angled parking on pages 3-38 and 3-39.
- [3] Reference table on page 3-41 for recommended vehicle lane widths based upon more specific contexts, including posted speed limit and the presence of a bike lane.
- [4] Vehicle lanes adjacent to a median and curb zones should be 11' wide or 1' wider than the minimum lane width.
- [5] The illustrative street section shows an optional class IV cycle track.

Priority Component

The provided minimum, maximum, and recommended zone widths are targets. Due to limitations in existing street right-of-way, some of these target zone widths may not be achievable.

Crossing Zone is not shown in the illustrative section above.

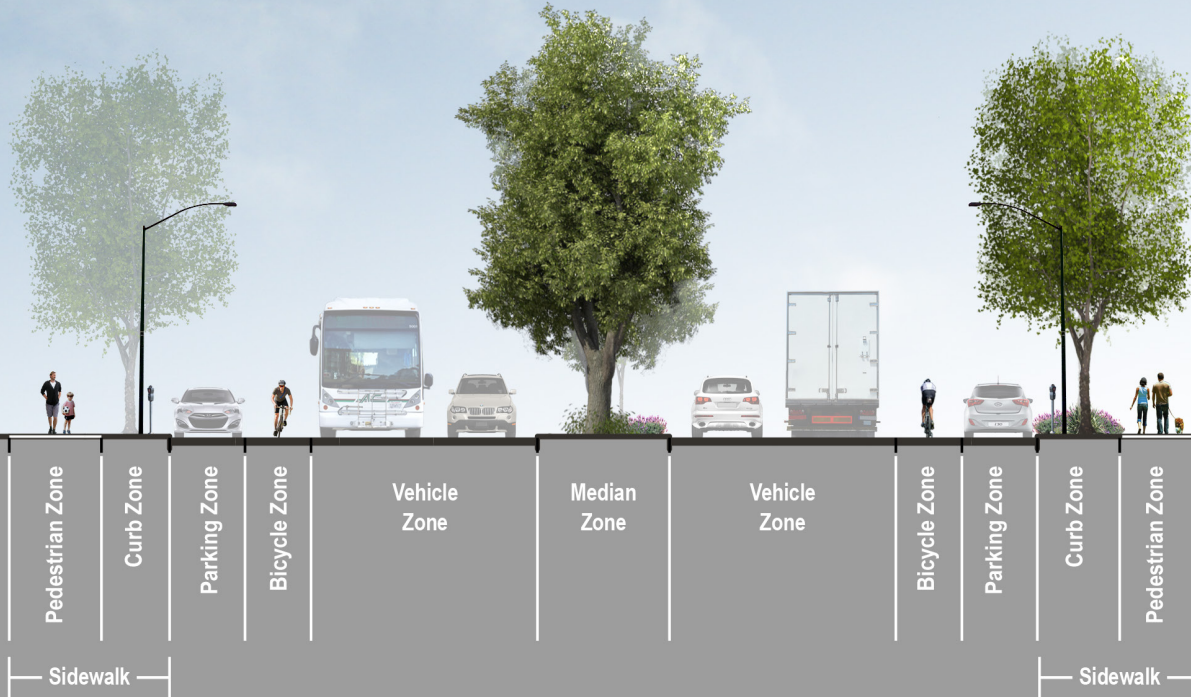
STREET TYPE ILLUSTRATIVE SECTION

COLLECTOR STREET

2 to 4 lanes

The purpose of this sheet is to convey how zones relate to each other rather than to prescribe design components (e.g., the number of lanes and the presence of on-street parking).

See “Arterial and Collector Street Design Considerations” on the following pages for discussion of the spatial street zones and dimensions indicated below.



MODAL PRIORITY	PEDESTRIAN ZONE		CURB ZONE		BICYCLE ZONE ^[1]		PARKING ZONE ^[1,2]		VEHICLE ZONE ^[3,4]		MEDIAN ZONE	
	MIN.	REC.	MIN.	REC.	MIN.	REC.	MIN.	REC.	MAX.	REC.	MIN.	REC.
Auto	4 ft.	6 ft.	2 ft.	2 ft.	5 ft.	8 ft.	7 ft.	8 ft.	11 ft./lane	10.5 ft./lane	4 ft.	8 ft.
Bicycle	4 ft.	6 ft.	2.5 ft.	4 ft.	6 ft.	8 ft.	7 ft.	8 ft.	11 ft./lane	10.5 ft./lane	6 ft.	8 ft.
Pedestrian	4 ft.	8 ft.	2.5 ft.	4 ft.	5 ft.	8 ft.	7 ft.	8 ft.	11 ft./lane	10.5 ft./lane	6 ft.	8 ft.
Transit	4 ft.	8 ft.	4 ft.	4 ft.	5 ft.	8 ft.	7 ft.	8 ft.	12 ft./lane	11 ft./lane	8 ft.	12 ft.
Trucks	4 ft.	6 ft.	2 ft.	2 ft.	5 ft.	8 ft.	7 ft.	8 ft.	12 ft./lane	11 ft./lane	8 ft.	12 ft.

Notes:

- [1] Reference table on page 3-18 and 3-19 for recommended bike lane and on-street parallel parking lane widths based upon more specific contexts, including total available width or posted speed limit.
- [2] Parking Zone could include on-street parallel parking, angled parking or back-in diagonal parking for streets with bicycle facilities. Vehicle lanes adjacent to angled parking should be wider than standard recommended lane widths. See design guidelines for angled parking on pages 3-38 and 3-39.
- [3] Reference table on page 3-41 for recommended vehicle lane widths based upon more specific contexts, including posted speed limit and the presence of a bike lane.
- [4] Vehicle lanes adjacent to a median should be 11' wide or 1' wider than minimum lane width.

Priority Component

The provided minimum, maximum, and recommended zone widths are targets. Due to limitations in existing street right-of-way, some of these target zone widths may not be achievable.

Crossing Zone is not shown in the illustrative section above.

ARTERIAL AND COLLECTOR STREET DESIGN CONSIDERATIONS

Auto Modal Priority



STREET ZONE	DESIGN CONSIDERATIONS
PEDESTRIAN	<ul style="list-style-type: none"> Provide a narrower Pedestrian Zone to allow more right-of-way for vehicle travel lanes Where retail uses face the street, provide a Pedestrian Zone with the wider recommended width
CURB	<ul style="list-style-type: none"> Provide a narrower Curb Zone, including landscaping and utilities, to allow more right-of-way for vehicle travel lanes, but still allocating adequate space for street trees, parking meters, street furnishings, and pedestrian unloading
BICYCLE	<ul style="list-style-type: none"> It is recommended to provide a bicycle facility such as a Class II Bike Lane or Class II Enhanced Buffered Bike Lane, or a Class IV Protected Bike Lane in urban land use context, although a Bicycle Zone is not required
PARKING	<ul style="list-style-type: none"> If and when possible, accommodate on-street parallel or angled parking
VEHICLE	<ul style="list-style-type: none"> Provide wider vehicle travel lanes to accommodate through and higher traffic speeds
MEDIAN	<ul style="list-style-type: none"> Where there is a median, provide a narrower median with median landscaping to allow more right-of-way for vehicle travel lanes, but still allocating adequate space for trees, maintenance, and irrigation water efficiency
CROSSING	<ul style="list-style-type: none"> Design corner treatments with a larger curb radius to accommodate through and higher traffic speeds as well as emergency vehicle access, truck and transit turning, and street maintenance Provide pedestrian refuge islands at pedestrian crossings Consider use of beacons, signals, and other traffic control devices at mid-block crossings

RELEVANT DESIGN STANDARD DETAILS					
Landscaping and Utilities	p. 3-11	Class II and Class II Enhanced Buffered Bike Lanes	pp. 3-20 to 3-27	Class IV Protected Bike Lanes	pp. 3-31 to 3-35
On-street Parallel Parking	p. 3-40	On-street Angled Parking	p. 3-41	Median Landscaping	p. 3-48
Corner Treatments	p. 3-52	Pedestrian Refuge Island	p. 3-49	Mid-block Crossing	p. 3-55

Bicycle Modal Priority



STREET ZONE	DESIGN CONSIDERATIONS
PEDESTRIAN	<ul style="list-style-type: none"> Provide a narrower Pedestrian Zone to allow more right-of-way for the bicycle facility in the Bicycle Zone
CURB	<ul style="list-style-type: none"> Provide a wider Curb Zone to accommodate off-street bike parking with bike racks and/or bike lockers, especially in urban and suburban land use typologies with high activity uses. Curb Zone should still allow adequate space for street trees, parking meters, street furnishings, and pedestrian unloading. Consider incorporating street lighting guidelines to provide visibility and safety for bicyclists
BICYCLE	<ul style="list-style-type: none"> It is acceptable to provide a narrower Bicycle Zone with a Class II Bike Lane with signage on streets with a narrower overall street width It is recommended to provide a wider Bicycle Zone to include a buffer between the Bicycle and Vehicle Zones and/or between the Bicycle and Parking Zones (Class II Enhanced Buffered Bike Lane or Class IV Protected Bike Lane in an urban land use context). Where opportunity coincides with planning, consider providing a Class I Bikeway. It is recommended to provide bicycle facility amenities such as bike boxes and green bike lanes in an urban land use context and high conflict areas
PARKING	<ul style="list-style-type: none"> Where parking is provided, allow more total available width to provide a buffer between the bike lane and on-street parallel or angled parking lane Consider back-in angled parking to also help avoid conflicts with adjacent bike facility
VEHICLE	<ul style="list-style-type: none"> Provide narrower vehicle travel lanes to slow traffic for better bicyclist safety and to allow wider right-of-way for bicycle facilities
MEDIAN	<ul style="list-style-type: none"> Where there is a median, provide a narrower median to allow more right-of-way for bicycle facilities, but still allocating adequate space for trees, maintenance, and irrigation water efficiency
CROSSING	<ul style="list-style-type: none"> Design corner treatments with a smaller curb radius to slow vehicle traffic and create more space for bicycle amenities in the Curb Zone, while still accommodating emergency vehicle access and street maintenance Provide protected intersections at high-conflict intersections of streets with Class IV Protected Bike Lanes It is recommended to provide bike detection, bike boxes, and green bike lanes in high conflict areas

RELEVANT DESIGN STANDARD DETAILS

Bike Racks and Lockers	p. 3-38	Street Lighting	p. 3-13	Class II and Class II Enhanced Buffered Bike Lanes	pp. 3-20 to 3-27
Class II Bike Lane Signage	p. 3-23	Class IV Protected Bike Lanes	pp. 3-31 to 3-35	Class I Bikeway	p. 3-19
Bike Box	p. 3-36	Green Bike Lane	p. 3-28	Total Available Width	p. 3-21
On-street Parallel Parking	p. 3-40	On-street Angled Parking	p. 3-41	Back-in Angled Parking	p. 3-42
Corner Treatments	p. 3-52	Protected Intersection	p. 3-53	Bike Detection	p. 3-37

Pedestrian Modal Priority



STREET ZONE	DESIGN CONSIDERATIONS
PEDESTRIAN	<ul style="list-style-type: none"> Provide a wider Pedestrian Zone to accommodate wide pedestrian thoroughways, especially in locations where retail uses face the street Consider implementing pedestrian channeling devices such as pedestrian barriers and dividers for pedestrian traffic
CURB	<ul style="list-style-type: none"> Provide a wider Curb Zone, including landscaping and utilities, to allow for signage and street furnishings such as benches, pedestrian lighting, banners, gateway features, planters, and street furniture to encourage active ground floor activity Consider incorporating landscaping, including green infrastructure/stormwater guidelines, for vegetation in the Curb Zone Consider incorporating street lighting guidelines to provide visibility and safety for pedestrians
BICYCLE	<ul style="list-style-type: none"> It is recommended to provide a bicycle facility such as a Class II Bike Lane, although a bicycle zone is not required
PARKING	<ul style="list-style-type: none"> Accommodate on-street parallel or angled parking to allow drivers convenient access to the adjacent Pedestrian Zone and to provide buffer from moving traffic
VEHICLE	<ul style="list-style-type: none"> Provide narrower vehicle travel lanes to slow traffic, provide better safety for pedestrians in the Pedestrian Zone and at street crossings, and allow wider sidewalks and room for traffic calming design features
MEDIAN	<ul style="list-style-type: none"> Where there is a median, provide a narrower median to allow room for wide Pedestrian and Curb Zones especially in an urban land use context with active retail frontage at the ground level (i.e. sidewalks, landscaping, street furniture, outdoor dining furniture) Consider incorporating median landscaping and/or green infrastructure/stormwater guidelines for vegetation in the Median Zone
CROSSING	<ul style="list-style-type: none"> Design corner treatments with a smaller curb radius to slow vehicle traffic, shorten the pedestrian crossing distance, and create more space for pedestrians, while still accommodating emergency vehicle access and street maintenance Provide pedestrian refuge islands at pedestrian crossings, mid-block crossings near major destinations, and where there are long distances between street intersections Consider daylighting intersections such as installing Painted Safety Zones at intersections and crossings where sightlines are poor Provide high visibility crosswalks that incorporate special treatment such as colored or textured pavement and striping, especially along busy streets in urban and suburban land use context Provide traffic calming design features to slow traffic for improved pedestrian safety, including bulb-outs

RELEVANT DESIGN STANDARD DETAILS					
Pedestrian Barriers	p. 3-5	Dividers	p. 3-6	Landscaping and Utilities	p. 3-11
Signage	p. 3-10	Street Furnishings	p. 3-12	Median Landscaping	p. 3-48
Green Infrastructure/ Stormwater	p. 3-14 to 3-15	Street Lighting	p. 3-13	Class II Bike Lanes	pp. 3-20 to 3-27
On-street Parallel Parking	p. 3-40	On-street Angled Parking	p. 3-41	Corner Treatments	p. 3-52
Pedestrian Refuge Island	p. 3-49	Mid-block Crossing	p. 3-55	Daylighting	p. 3-56
Painted Safety Zone	p. 3-57	Crosswalks	p. 3-51		

Transit Modal Priority



STREET ZONE	DESIGN CONSIDERATIONS
PEDESTRIAN	<ul style="list-style-type: none"> Provide a wider Pedestrian Zone to allow more room for pedestrians to wait for, board, and alight transit vehicles
CURB	<ul style="list-style-type: none"> Provide a wide Curb Zone to accommodate bus stops, including furniture and wayfinding kiosks for better transit accessibility for pedestrians
BICYCLE	<ul style="list-style-type: none"> It is recommended to provide a bicycle facility such as a Class II Bike Lane, although a bicycle zone is not required Consider a protected bikeway facility to minimize bus and bicycle weaving
VEHICLE	<ul style="list-style-type: none"> Provide a wider Vehicle Zone to allow wider outside travel lanes to accommodate and allow for dedicated bus-only/rapid transit lanes, bus bulbs, and bus pull outs
MEDIAN	<ul style="list-style-type: none"> Where a median is present, provide a wider median to allow for transit turning movements
CROSSING	<ul style="list-style-type: none"> Design corner treatments with a large curb radius to allow for transit turning movements in the outer travel lanes, while still accommodating emergency vehicle access and street maintenance Provide pedestrian refuge islands at pedestrian crossings Frequently space crossing opportunities with crosswalks at all stops

RELEVANT DESIGN STANDARD DETAILS					
Bus Stops	p. 3-9	Class II Bike Lanes	pp. 3-20 to 3-27	Dedicated Bus-only Lane	p. 3-45
Bus Bulb	p. 3-17	Bus Pull-out	p. 3-16	Corner Treatments	p. 3-52
Pedestrian Refuge Island	p. 3-49				

Trucks Modal Priority



STREET ZONE	DESIGN CONSIDERATIONS
PEDESTRIAN	<ul style="list-style-type: none"> Provide a narrower Pedestrian Zone to accommodate lower pedestrian traffic in an industrial land use typology
CURB	<ul style="list-style-type: none"> Provide a narrower Curb Zone to accommodate lower pedestrian traffic, but still providing a buffer for pedestrians from passing truck traffic
BICYCLE	<ul style="list-style-type: none"> It is recommended to provide a bicycle facility such as a Class II Bike Lane, although a bicycle zone is not required Bike lane facilities on Truck Modal Priority Streets should consider effects on truck turning radii at intersections
PARKING	<ul style="list-style-type: none"> Accommodate on-street parallel or angled parking to allow truck loading
VEHICLE	<ul style="list-style-type: none"> Provide a wider Vehicle Zone to allow a wider outside travel lane for accommodating through traffic for larger vehicles such as trucks
MEDIAN	<ul style="list-style-type: none"> Where there is a median, provide a wider median to allow for truck turning movements
CROSSING	<ul style="list-style-type: none"> Design corner treatments with a large curb radius to allow for truck turning movements in the outer travel lanes, while still accommodating emergency vehicle access and street maintenance Consider truck turning treatments such as mountable curbs/truck aprons or recessed STOP bars to accommodate large vehicle off-tracking

RELEVANT DESIGN STANDARD DETAILS			
Class II Bike Lanes	pp. 3-20 to 3-27	On-street Parallel Parking	p. 3-40 On-street Angled Parking p. 3-41
Corner Treatments	p. 3-52	Truck Turning	p. 3-58

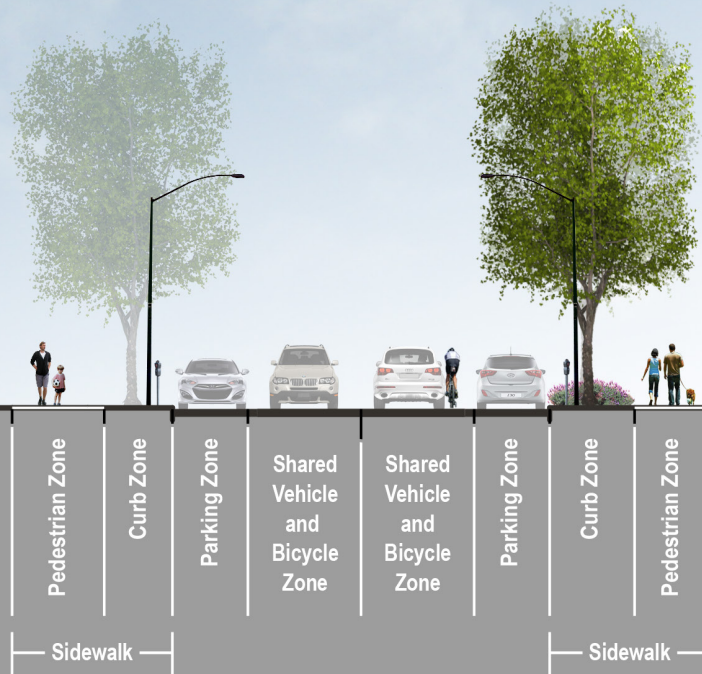
STREET TYPE ILLUSTRATIVE SECTION

LOCAL STREET

2 lanes

The purpose of this sheet is to convey how zones relate to each other rather than to prescribe design components (e.g., the number of lanes and the presence of on-street parking).

See “Local Street Design Considerations” on the following pages for discussion of the spatial street zones and dimensions indicated below.



LAND USE TYPOLOGY	PEDESTRIAN ZONE		CURB ZONE		PARKING ZONE ^[1]		SHARED VEHICLE AND BICYCLE ZONE ^[2]	
	MIN.	REC.	MIN.	REC.	MIN.	REC.	MIN.	REC.
Urban	5 ft.	8 ft.	2.5 ft.	4 ft.	7.5 ft.	8 ft.	10.5 ft./lane	11 ft./lane
Suburban	5 ft.	6 ft.	2.5 ft.	4 ft.	7.5 ft.	8 ft.	10.5 ft./lane	12 ft./lane
Rural and Open Space	4 ft.	6 ft.	0 ft.	2 ft.	7.5 ft.	8 ft.	10.5 ft./lane	12 ft./lane
Industrial	4 ft.	6 ft.	0 ft.	2 ft.	7.5 ft.	8 ft.	11 ft./lane	14 ft./lane

Notes:

[1] Parking Zone could include on-street angled parking or back-in diagonal parking for streets with bicycle facilities. Design guidelines for angled parking can be found on pages 3-38 and 3-39.

[2] Vehicles could also include buses and trucks.

The provided minimum, maximum, and recommended zone widths are targets. Due to limitations in existing street right-of-way, some of these target zone widths may not be achievable.

Crossing Zone is not shown in the illustrative section above.

Priority Component

LOCAL STREET DESIGN CONSIDERATIONS

Urban Land Use Context

STREET ZONE	DESIGN CONSIDERATIONS
-------------	-----------------------

PEDESTRIAN

- Provide a wider Pedestrian Zone to encourage pedestrian activity

CURB

- Provide a wider Curb Zone, including **landscaping and utilities**, to allow for **street furnishings** such as benches, pedestrian lighting, banners, gateway features, planters, and street furniture

PARKING

- If and when possible, accommodate **on-street parallel parking** or **angled parking** for nearby residents and users of commercial and office buildings

**SHARED
VEHICLE AND
BICYCLE**

- Provide wider vehicle travel lanes to allow enough space for a vehicle to safely share right-of-way with and pass a bicyclist
- It is recommended to provide a shared use bicycle facility such as a **Class III Bike Route** or **Class III Enhanced Bicycle Boulevard** on streets with higher traffic volumes and speeds
- Consider implementing **shared streets** with slow vehicle and bicycle traffic

CROSSING

- Design **corner treatments** with a smaller curb radius to slow vehicle traffic, shorten the pedestrian crossing distance, and create more space for pedestrians, while still accommodating emergency vehicle access and street maintenance
- Consider **daylighting intersections** at intersections and crossings where sightlines are poor
- Provide high visibility **crosswalks** and signalized pedestrian crossings at crossings with low visibility, high amount of traffic, and/or near key destinations such as schools and commercial areas, especially along busy streets

RELEVANT DESIGN STANDARD DETAILS

Landscaping and Utilities	p. 3-11	Street Furnishings	p. 3-12	On-street Parallel Parking	p. 3-40
On-street Angled Parking	p. 3-41	Class III Bike Route	p. 3-29	Class III Enhanced Bicycle Boulevard	p. 3-30
Shared Street	p. 3-46	Corner Treatments	p. 3-52	Daylighting	p. 3-56
Crosswalks	p. 3-51				

LOCAL STREET DESIGN CONSIDERATIONS

Suburban Land Use Context

STREET ZONE	DESIGN CONSIDERATIONS
PEDESTRIAN	<ul style="list-style-type: none"> Provide a wider Pedestrian Zone to encourage pedestrian activity
CURB	<ul style="list-style-type: none"> Provide a wider Curb Zone, including a planting strip, to allow for street furnishings such as benches, pedestrian lighting, banners, gateway features, planters, and street furniture
PARKING	<ul style="list-style-type: none"> If and when possible, accommodate on-street parallel parking for nearby residents
SHARED VEHICLE AND BICYCLE	<ul style="list-style-type: none"> Provide wider vehicle travel lanes to allow enough space for a vehicle to safely share right-of-way with and pass a bicyclist It is recommended to provide a shared use bicycle facility such as a Class III Bike Route on streets with higher traffic volumes and speeds
CROSSING	<ul style="list-style-type: none"> Design corner treatments with a smaller curb radius to slow vehicle traffic, shorten the pedestrian crossing distance, and create more space for pedestrians, but still accommodating emergency vehicle access and street maintenance Provide high visibility crosswalks and signalized pedestrian crossings at crossings with low visibility, high amount of traffic, and/or near key destinations such as schools and commercial areas, especially along busy streets

RELEVANT DESIGN STANDARD DETAILS

Planting Strip	p. 3-11	Street Furnishings	p. 3-12	On-street Parallel Parking	p. 3-40
Class III Bike Routes	pp. 3-29 to 3-30	Corner Treatments	p. 3-52	Crosswalks	p. 3-51

LOCAL STREET DESIGN CONSIDERATIONS

Rural and Open Space Land Use Context

STREET ZONE	DESIGN CONSIDERATIONS
PEDESTRIAN	<ul style="list-style-type: none"> Provide a narrower Pedestrian Zone with rural solutions for pedestrian facilities to accommodate lower pedestrian traffic
CURB	<ul style="list-style-type: none"> Provide a narrower Curb Zone to accommodate lower pedestrian traffic
PARKING	<ul style="list-style-type: none"> On-street parking is optional if it is needed to serve fronting land uses
SHARED VEHICLE AND BICYCLE	<ul style="list-style-type: none"> Provide narrower vehicle travel lanes to accommodate lower traffic volumes It is optional to provide a shared use bicycle facility such as a Class III Bike Route or a wide shoulder that bikes can use
CROSSING	<ul style="list-style-type: none"> Provide high visibility crosswalks at crossings with low visibility and/or near key destinations such as schools and commercial areas

RELEVANT DESIGN STANDARD DETAILS					
Rural Solutions for Pedestrian Facilities	p. 3-7	Class III Bike Routes	pp. 3-29 to 3-30	Crosswalks	p. 3-51

LOCAL STREET DESIGN CONSIDERATIONS

Industrial Land Use Context

STREET ZONE	DESIGN CONSIDERATIONS
PEDESTRIAN	<ul style="list-style-type: none"> Provide a narrower Pedestrian Zone to accommodate lower pedestrian traffic
CURB	<ul style="list-style-type: none"> Provide a narrower Curb Zone to accommodate lower pedestrian traffic, but still protect pedestrians from passing truck traffic
PARKING	<ul style="list-style-type: none"> Accommodate on-street parallel parking to allow truck loading
SHARED VEHICLE AND BICYCLE	<ul style="list-style-type: none"> Provide narrower vehicle travel lanes to accommodate lower traffic volumes It is optional to provide a shared use bicycle facility such as a Class III Bike Route or a wide shoulder that bikes can use
CROSSING	<ul style="list-style-type: none"> Design corner treatments with a large curb radius to allow for truck turning movements in the outer travel lanes Provide high visibility crosswalks at crossings with low visibility and/or near key destinations such as schools and commercial areas Consider installing improvements for truck turning such as mountable curbs and recessed STOP bars at intersections with heavier truck traffic

RELEVANT DESIGN STANDARD DETAILS

On-street Parallel Parking	p. 3-40	Class III Bike Routes	pp. 3-29 to 3-30	Corner Treatments p. 3-52
Crosswalks	p. 3-51	Truck Turning	p. 3-58	

3. GLOSSARY OF DESIGN GUIDELINE DETAILS

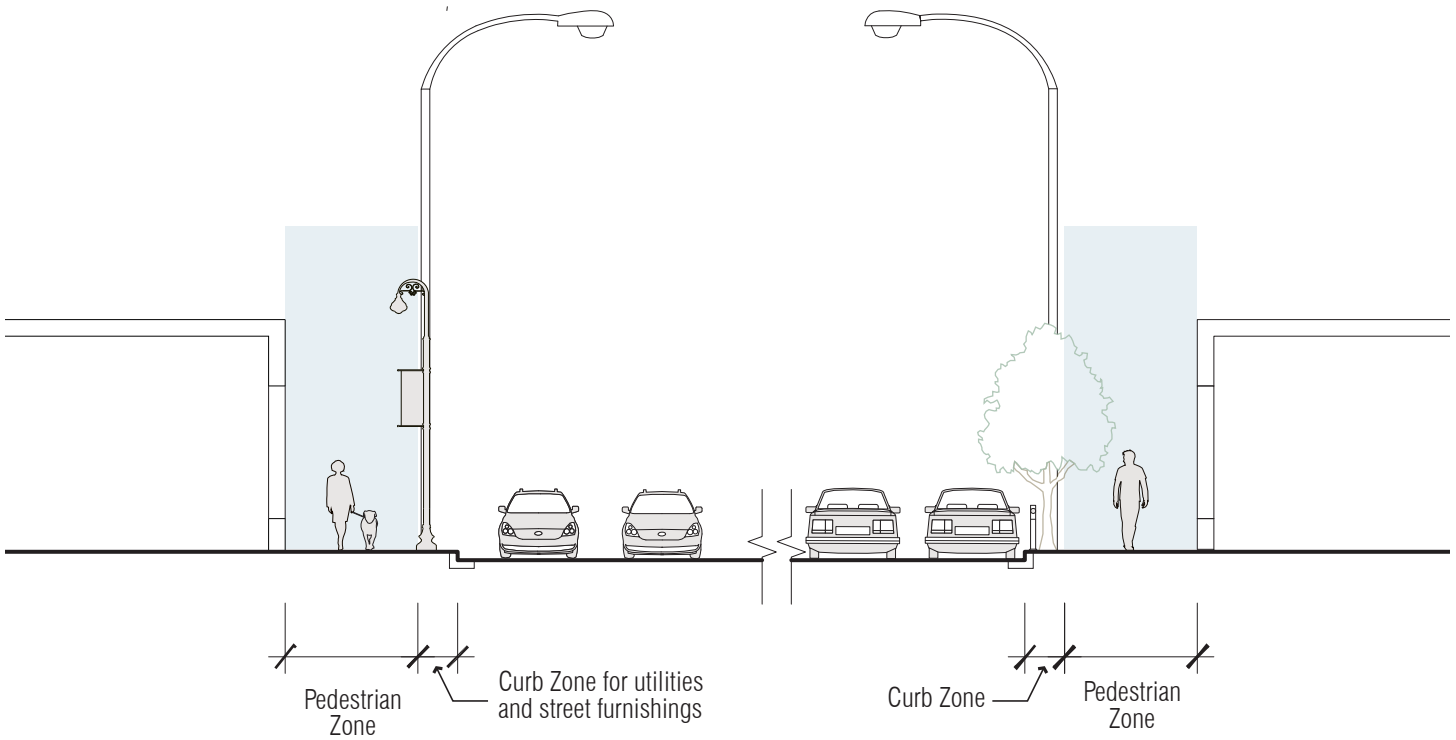
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PEDESTRIAN ZONE



DESIGN GUIDELINE
Pedestrian Zone

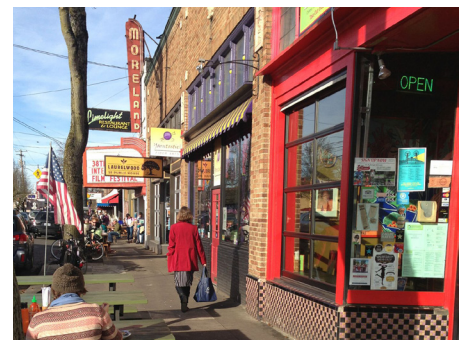
Pedestrian zones should be designed for comfort. Consider the ability of groups to walk side-by-side and the ability of pedestrians to comfortably pass each other.



Pedestrian Zone in residential area



Pedestrian Zone in mixed-use area



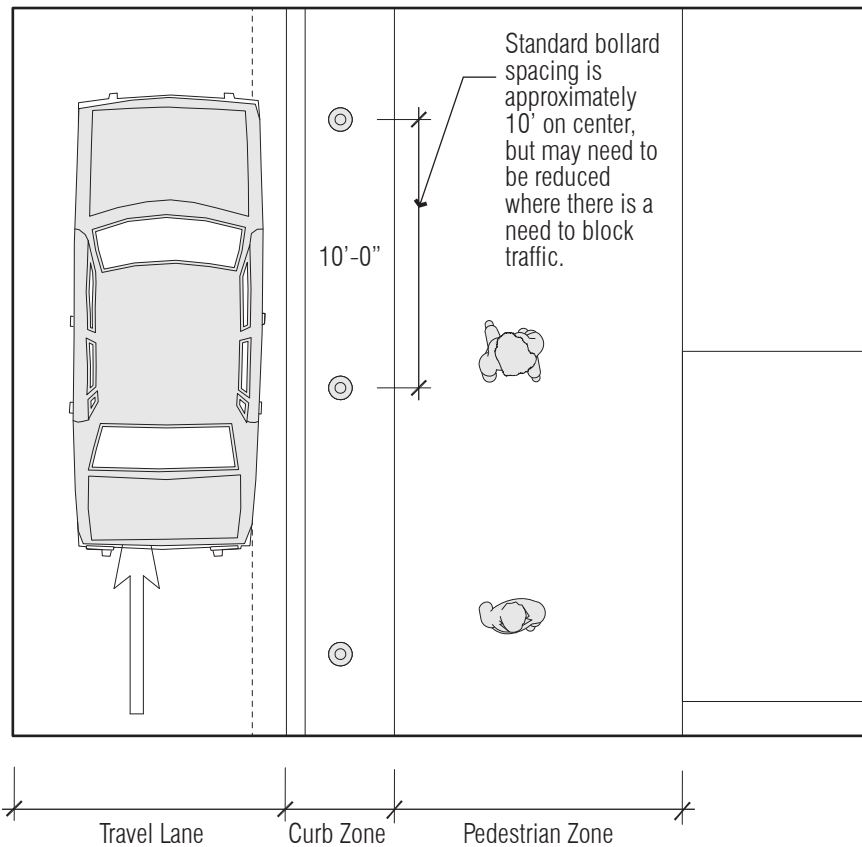
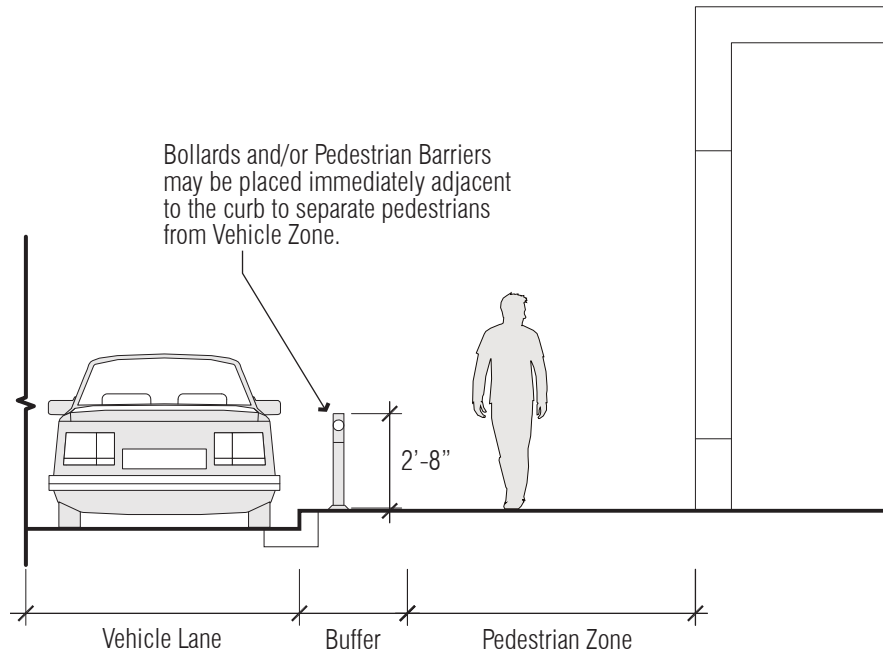
Pedestrian Zone along retail uses

Notes:

1. Pedestrian Zone should be free of any obstacles, gaps, or deformities which make them non-traversable for pedestrians. Location of a bus shelter, bench, or other permanent fixtures shall ensure a 3' minimum clear path for pedestrian travel.
2. Width of Pedestrian Zone should be wider for streets with higher pedestrian volumes.
3. Source: National Association of City Transportation Officials, 2012 Second Edition, *Urban Street Design Guide*, pages 37 to 39.
4. The above design guideline is a recommendation for complete streets implementation and does not supersede a jurisdiction's existing standards.
5. Objects in the buffer area between the vehicle lane and the pedestrian zone need to be 18 to 22 inches from the face of the curb (measure from the object on the curb side) and maintain ADA access from the back of the object to the back of the Pedestrian Zone.

DESIGN GUIDELINE

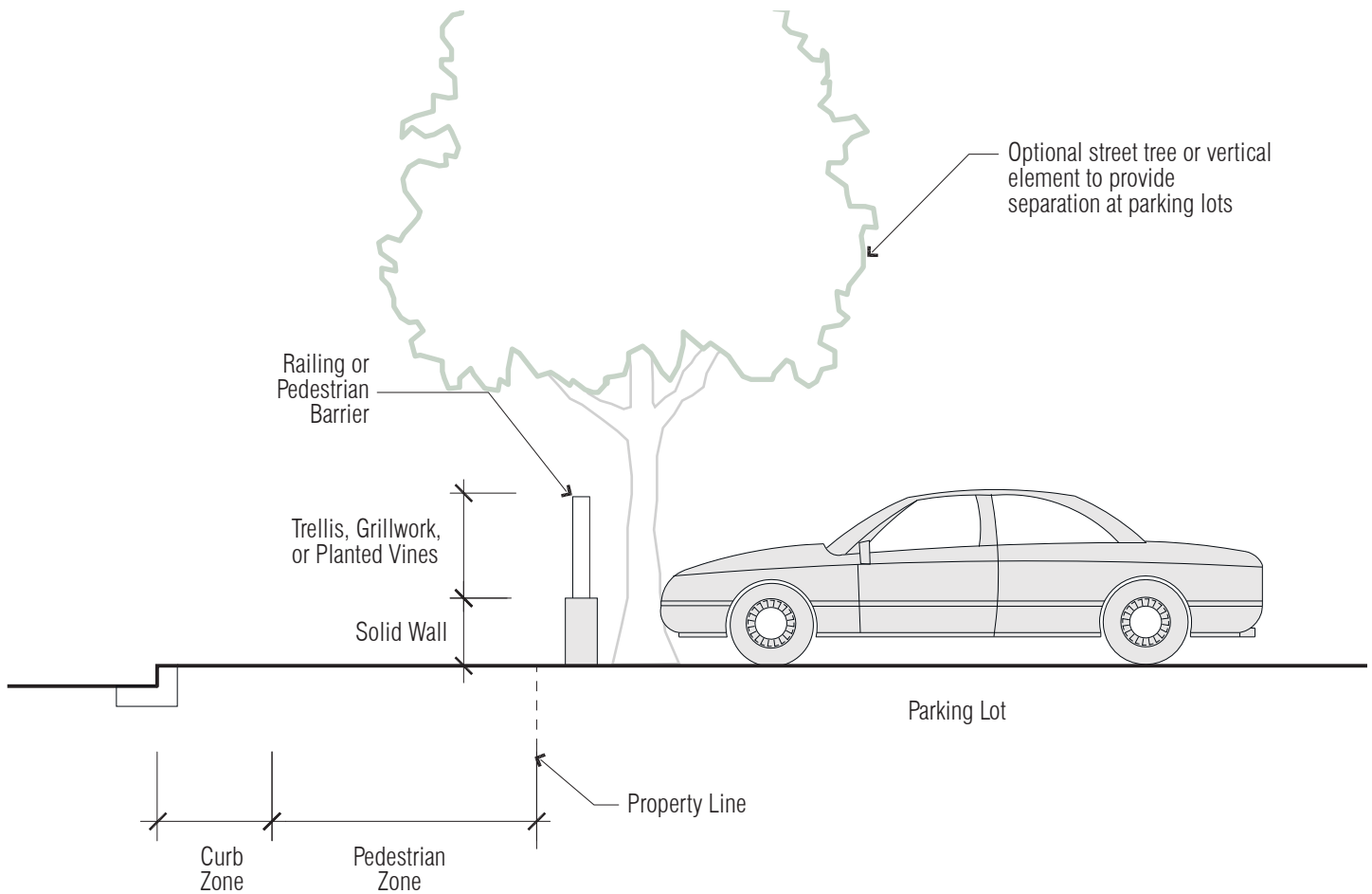
Pedestrian Channeling Devices: Pedestrian Barriers



Notes:

1. Consider implementing pedestrian channeling devices for pedestrian traffic when adjacent to high-speed vehicle lanes and where there is no Parking Zone.
2. Bollards are typically 4" to 10" in diameter and should be painted in colors other than grey to be easily visible. Decorative bollards may vary in form and size.
3. Source: City and County of San Francisco, 2011, Chapter 6: Streetscape Elements, *Better Streets Plan*, page 222.
4. The above design guideline is a recommendation for complete streets implementation and does not supersede a jurisdiction's existing standards.

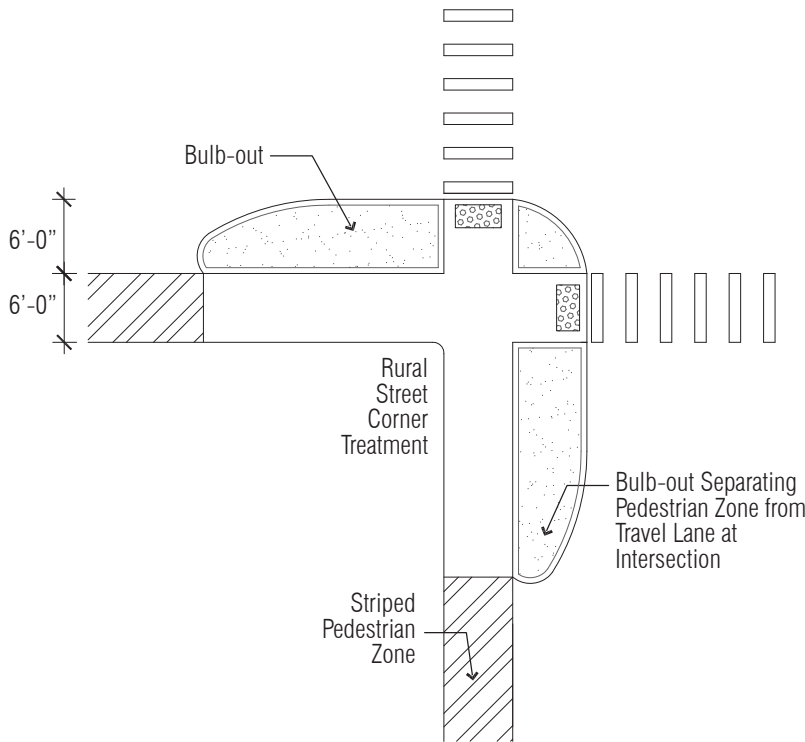
DESIGN GUIDELINE

Pedestrian Channeling Devices: Dividers at Surface Parking Lots

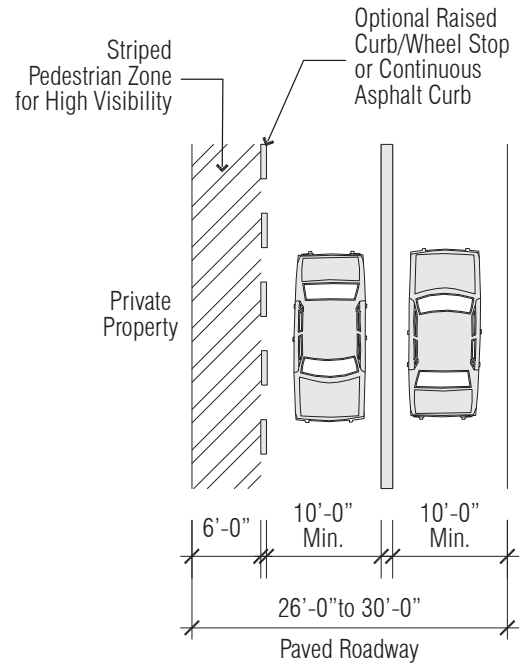
Notes:

1. Recommended for sidewalks adjacent to surface parking to provide visual separation and to focus physical access to and from parking areas.
2. Railings should be a minimum of 2'-6" to 3'-6" in height and minimum of 70 percent open to limit non-visible areas for safety. Solid walls can be 1'-6" to 2'-8" in height.
3. The above design guideline is a recommendation for complete streets implementation and does not supersede a jurisdiction's existing standards.
4. Zoning regulations should be considered in development of any barriers or fencing for property and sidewalks.

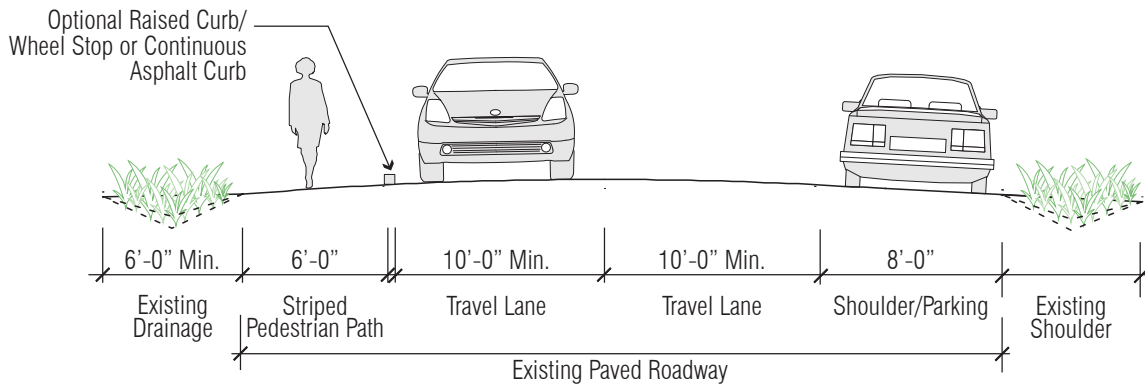
DESIGN GUIDELINE
Rural Solutions for Pedestrian Facilities



RURAL STREET CORNER TREATMENT



RURAL STREET PLAN SHOWING PEDESTRIAN FACILITY



RURAL STREET SECTION SHOWING PEDESTRIAN FACILITY

Notes:

1. If parking is allowed, vehicles should park on the shoulder.
2. Rural streets often do not have curbs and gutters. The above are suggested solutions for implementing pedestrian improvements in rural areas.
3. The above design guideline is a recommendation for complete streets implementation and does not supersede a jurisdiction's existing standards.

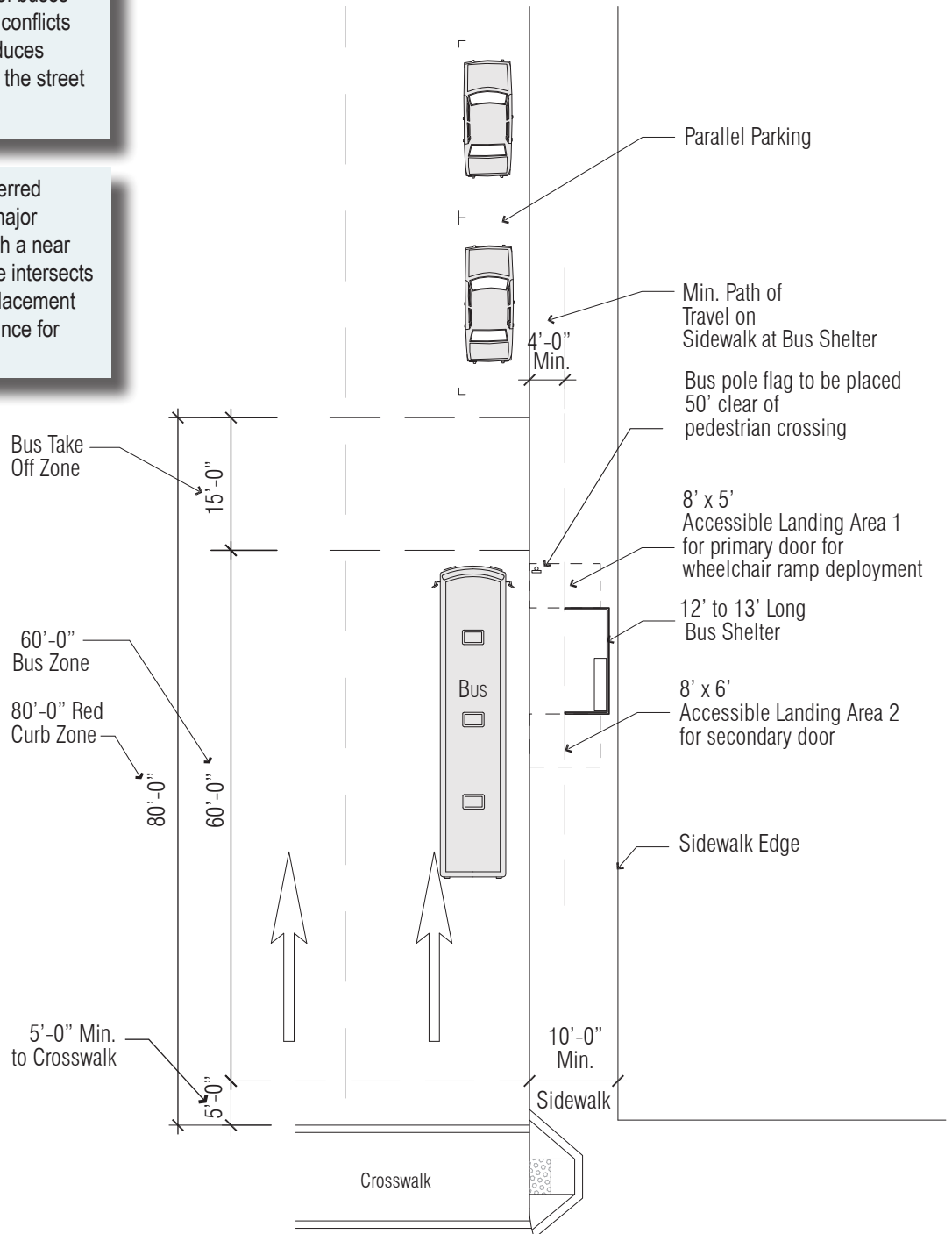


CURB ZONE

DESIGN GUIDELINE
Bus Stops: Far Side Bus Stop

Far side stop placement is generally preferred as it reduces instances of buses waiting for traffic signals, reduces conflicts with right turning vehicles, and reduces frequency of pedestrians crossing the street in front of buses.

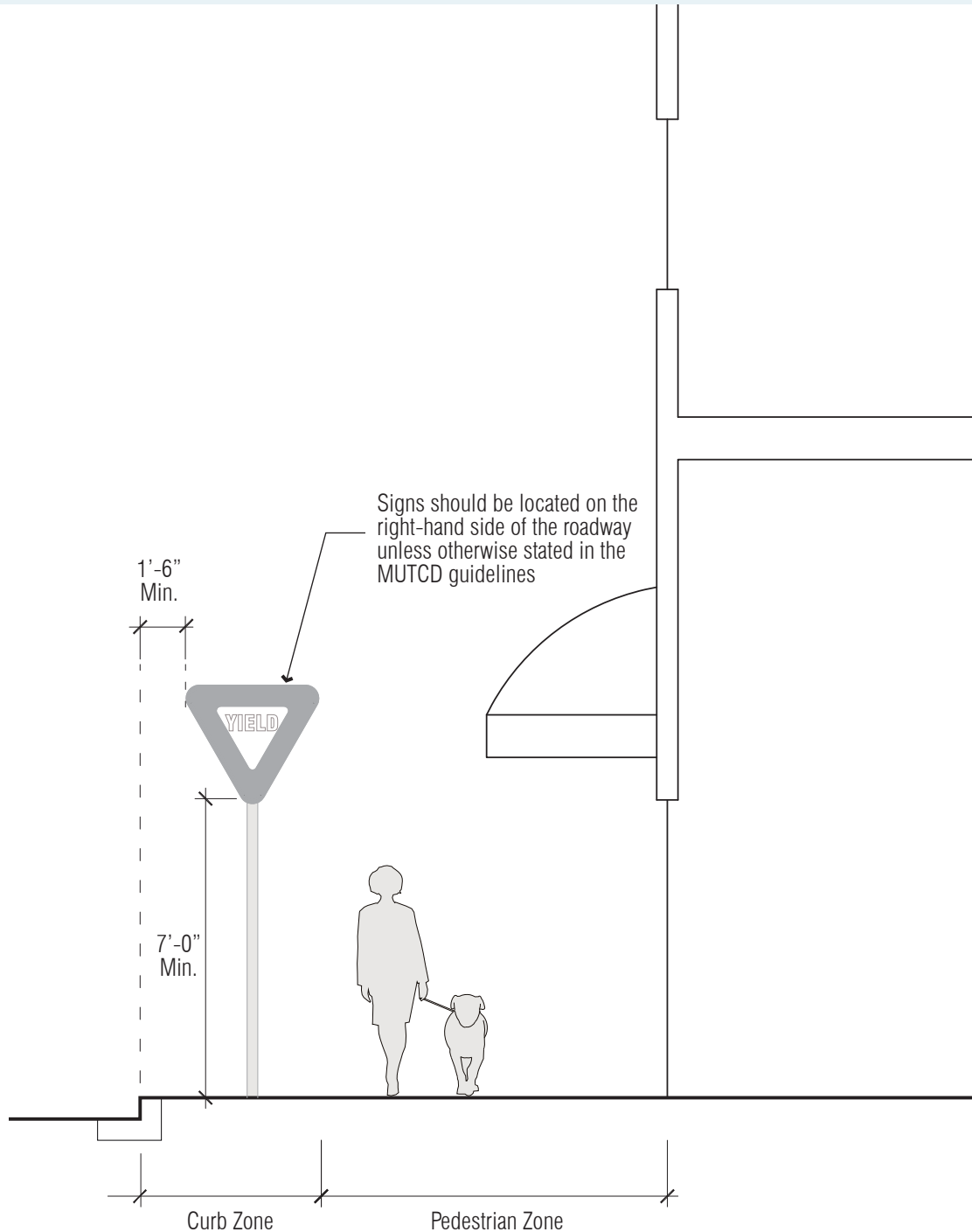
Near side placement may be preferred in selected instances, such as if major destinations are better aligned with a near side stop or if a low ridership route intersects a high ridership route. Nearside placement would also minimize walking distance for transferring riders.



Notes:

1. Far side bus stops are recommended over near side bus stops for complete streets implementation. Context consideration should be given to trip generators and Pedestrian Zones when determining far side versus near side bus stops.
2. Source: Alameda-Contra Costa Transit District, 2004, "Fig. 8: Far Side Bus Stop Template," *Transit Friendly Streets: Making Streets Work for Transit*, page 5-30.
3. The above design guideline is a recommendation for complete streets implementation and does not supersede a jurisdiction's existing standards.
4. Design should consider bus stop use of articulated buses and a high incidence of multiple buses arriving simultaneously. Some bus stops may need to be longer than 60 feet.

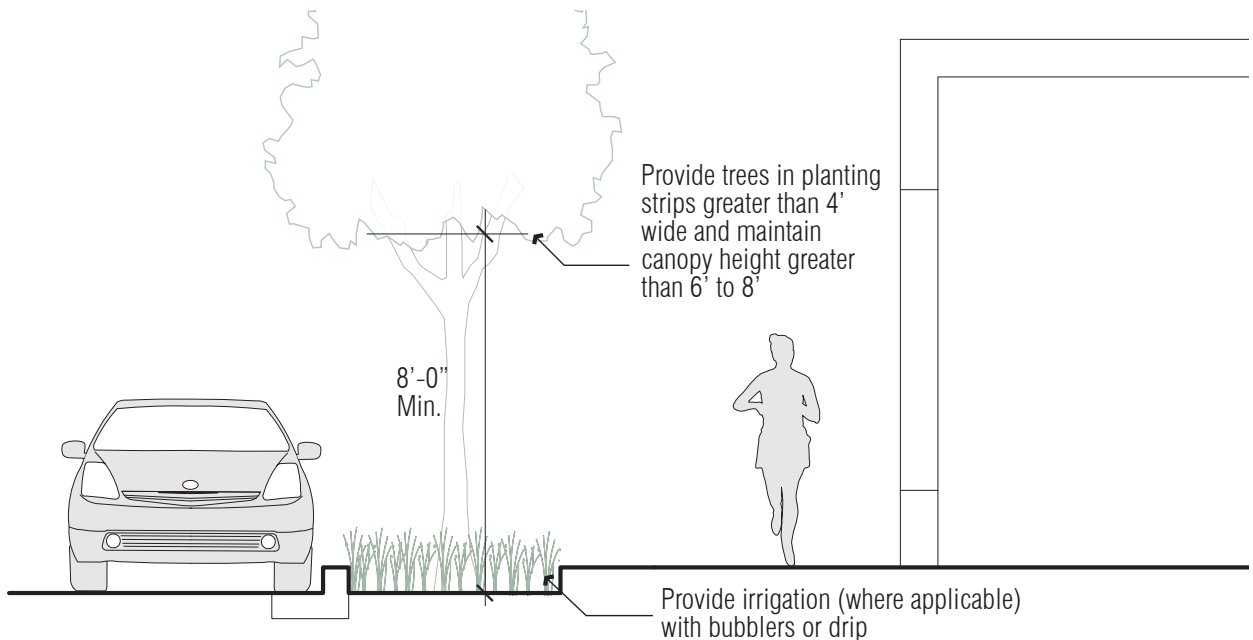
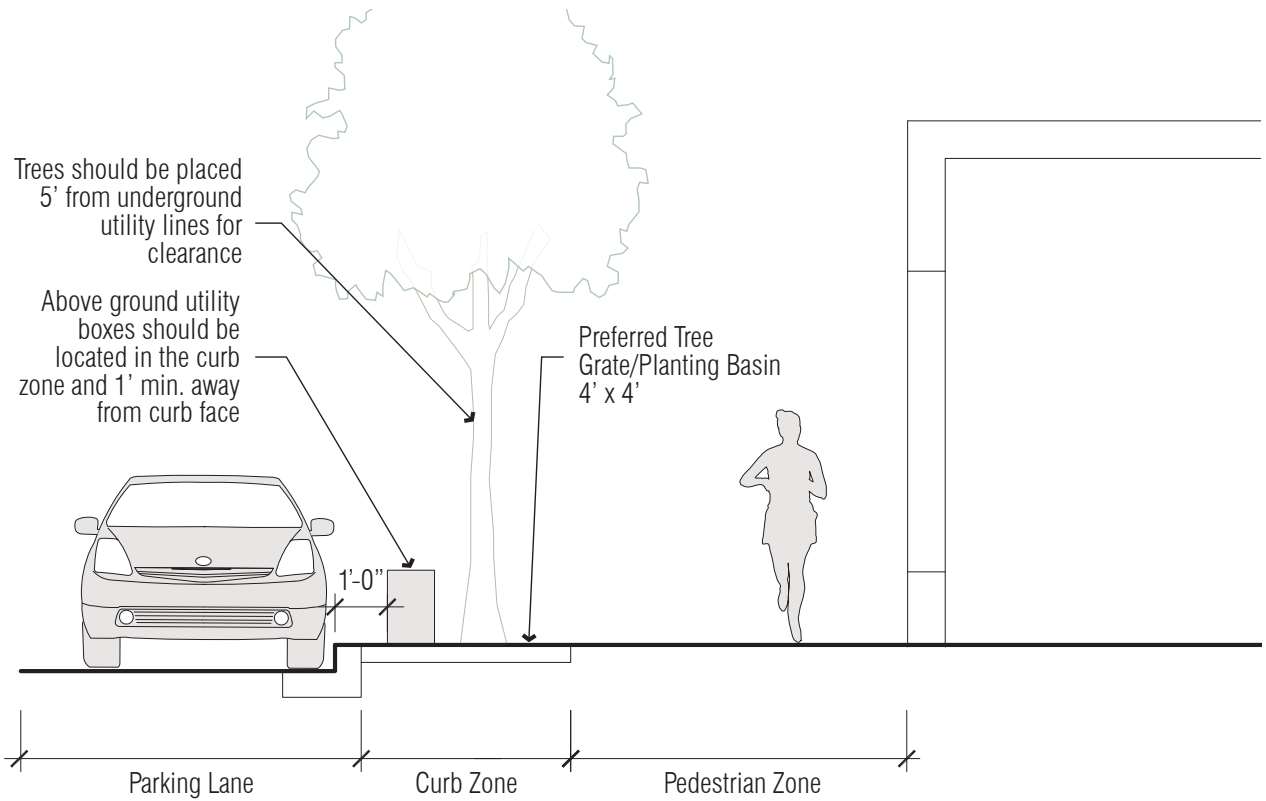
DESIGN GUIDELINE Signage



Notes:

1. Signage, wayfinding, traffic, or other should be kept clear of the Pedestrian Zone.
2. Signs may be placed on both sides of the road if special emphasis is required.
3. Sources: Manual on Uniform Traffic Control Devices (MUTCD), 2009 Edition Chapter 6F, Temporary Traffic Control Zone Devices, "Fig. 6F-1: Height and Lateral Location of Signs - Typical Installations," <http://mutcd.fhwa.dot.gov/htm/2009/part6/part6f.htm>, accessed July 22, 2016; MUTCD, 2009 Edition Chapter 2A, Lateral Offset, <http://mutcd.fhwa.dot.gov/htm/2009>, accessed August 2, 2016.
4. The above design guideline is a recommendation for complete streets implementation and does not supersede a jurisdiction's existing standards.
5. Objects in the buffer area between the vehicle lane and the Pedestrian Zone need to be 18 to 22 inches from the face of the curb (measure from the object on the curb side) and maintain ADA access from the back of the object to the back of the Pedestrian Zone.

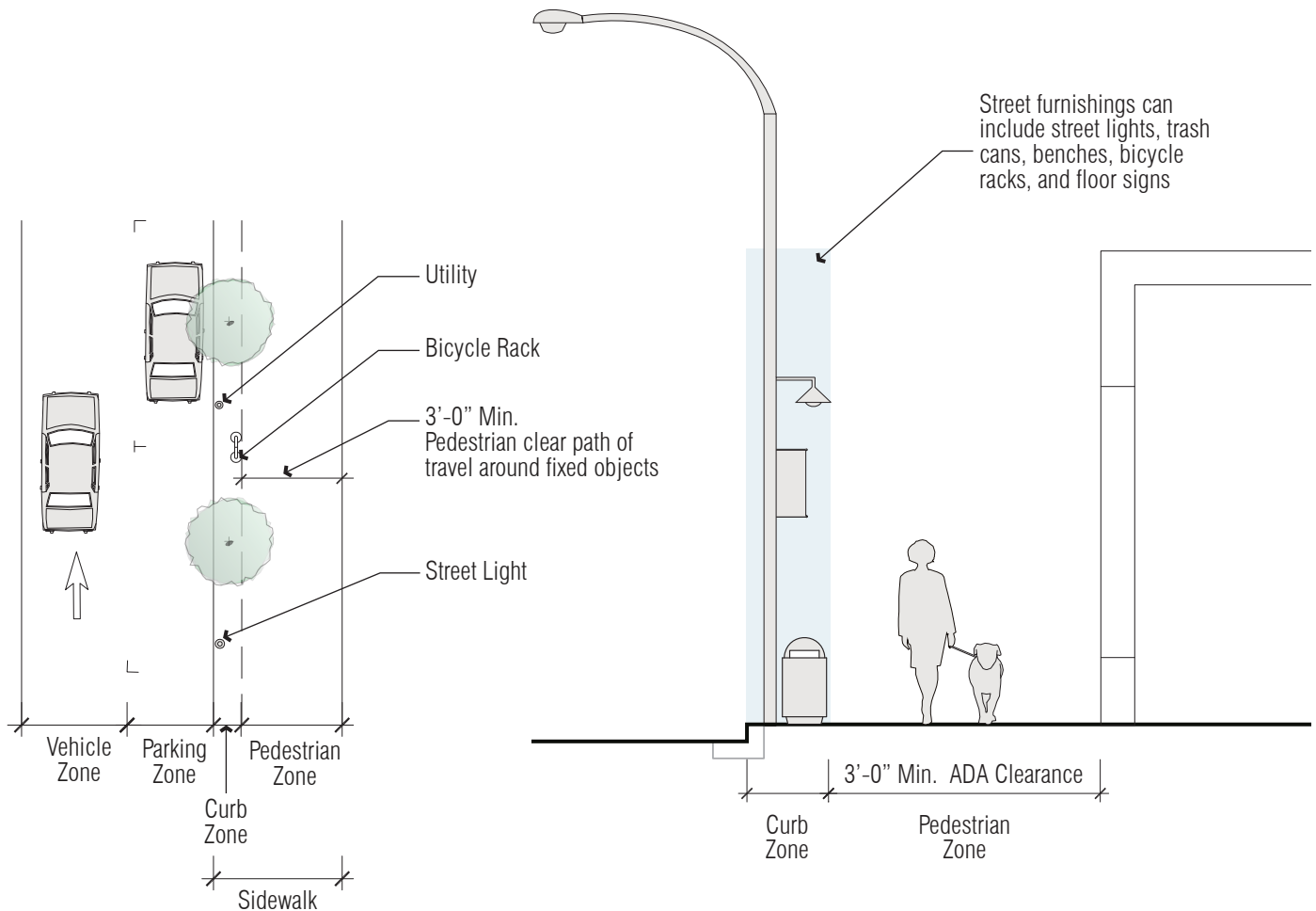
DESIGN GUIDELINE
Landscaping and Utilities



Notes:

1. Source: City and County of San Francisco, 2011, Chapter 6.1: Urban Forest, *Better Streets Plan*, page 165.
2. The above design guideline is a recommendation for complete streets implementation and does not supersede a jurisdiction's existing standards.
3. Use of native plant species is recommended. Trees should be selected considering their form, mature size, color, and texture. Accent trees, flowering species, with overarching canopies and medium density foliage are appropriate on wider streets such as boulevards. Trees with upright and columnar form are appropriate for narrow streets and medians.

DESIGN GUIDELINE Street Furnishings



Notes:

1. All items, including trash cans, benches, and other street furnishings, should be placed at least 18" from curb face.
2. Street furnishings should be placed every 200' along commercial streets and should maintain a minimum 4' clear accessible route.
3. Source: City and County of San Francisco, 2011, Chapter 6: Streetscape Elements, *Better Streets Plan*, page 218; Americans with Disabilities Act, 1990.
4. The above design guideline is a recommendation for complete streets implementation and does not supersede a jurisdiction's existing standards.
5. Street furnishings should be confined to Curb Zone to maximum extent possible to minimize encroachment into pedestrian clear path of travel.

DESIGN GUIDELINE
Street Lighting

Light fixtures should be selected based on street and sidewalk widths. They may be placed parallel or in a staggered pattern depending upon the illumination required for the street.



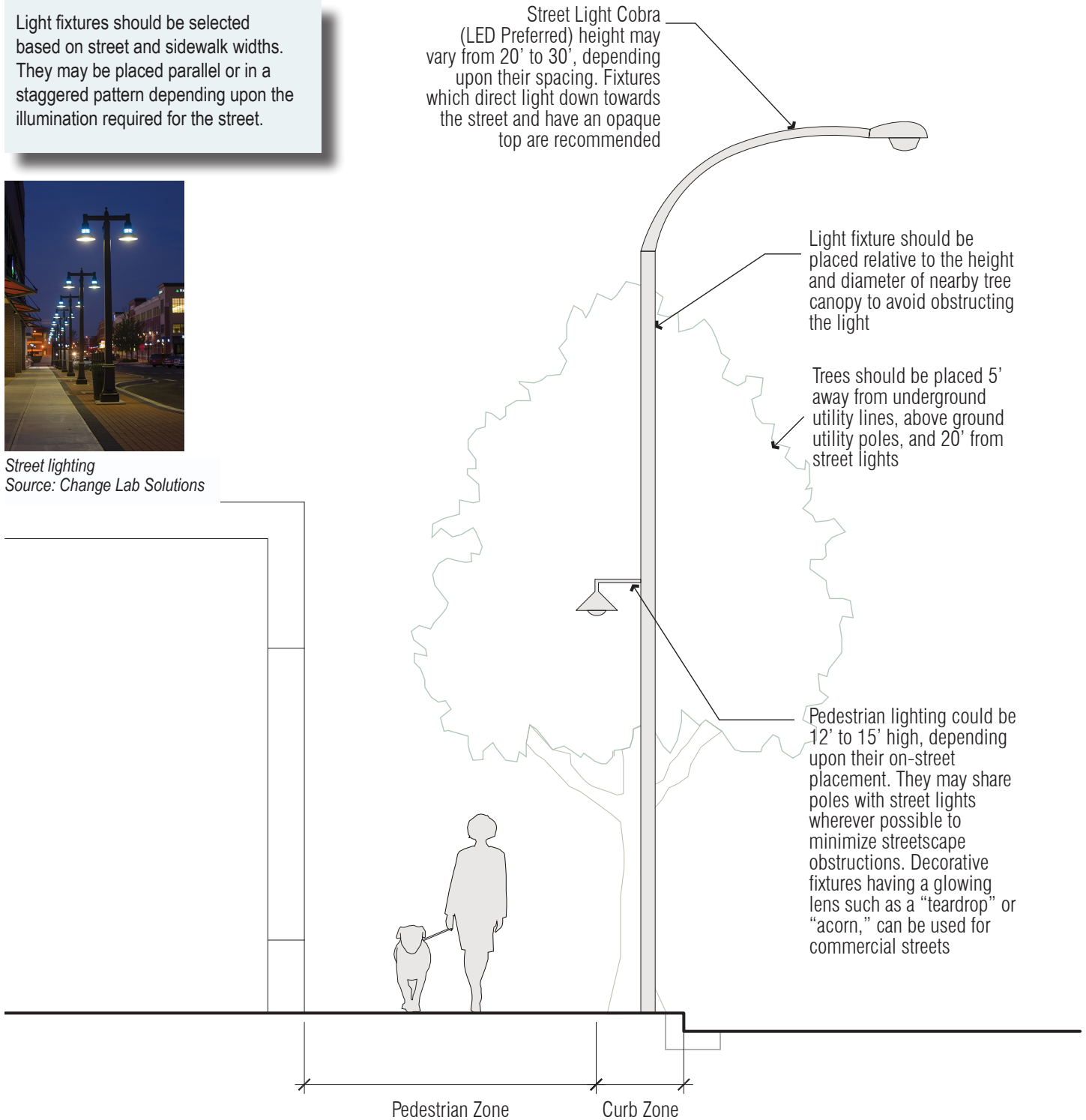
Street lighting
Source: Change Lab Solutions

Street Light Cobra (LED Preferred) height may vary from 20' to 30', depending upon their spacing. Fixtures which direct light down towards the street and have an opaque top are recommended

Light fixture should be placed relative to the height and diameter of nearby tree canopy to avoid obstructing the light

Trees should be placed 5' away from underground utility lines, above ground utility poles, and 20' from street lights

Pedestrian lighting could be 12' to 15' high, depending upon their on-street placement. They may share poles with street lights wherever possible to minimize streetscape obstructions. Decorative fixtures having a glowing lens such as a "teardrop" or "acorn," can be used for commercial streets

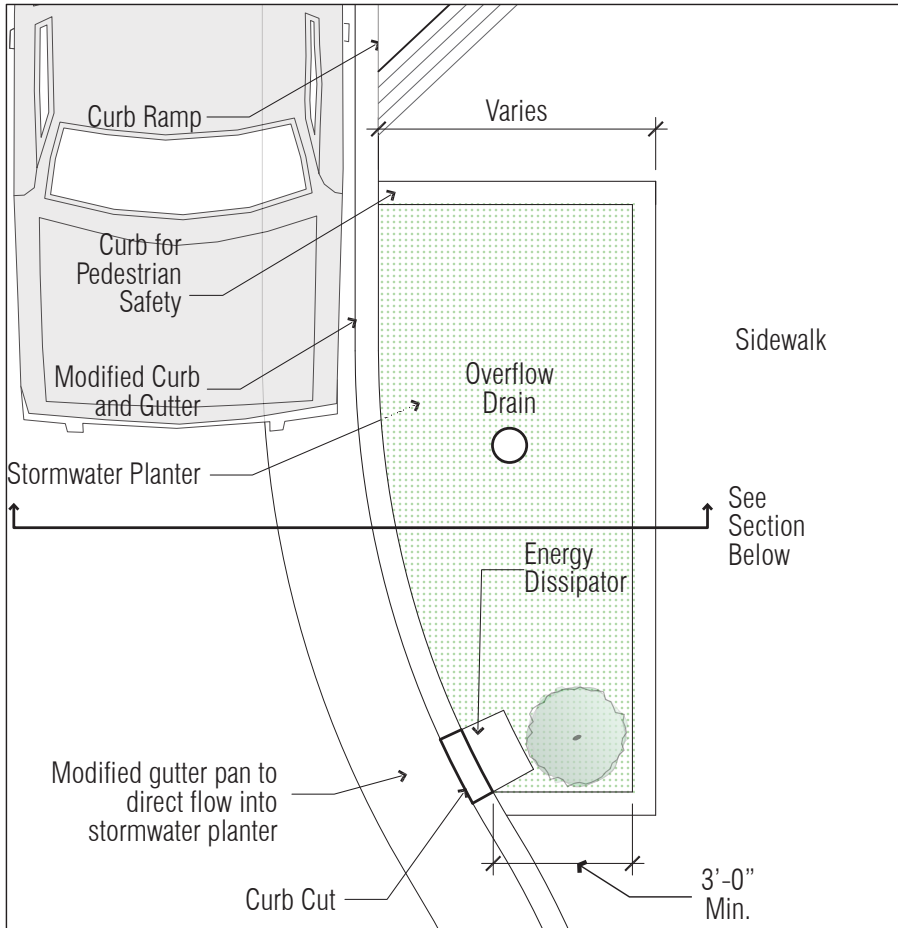


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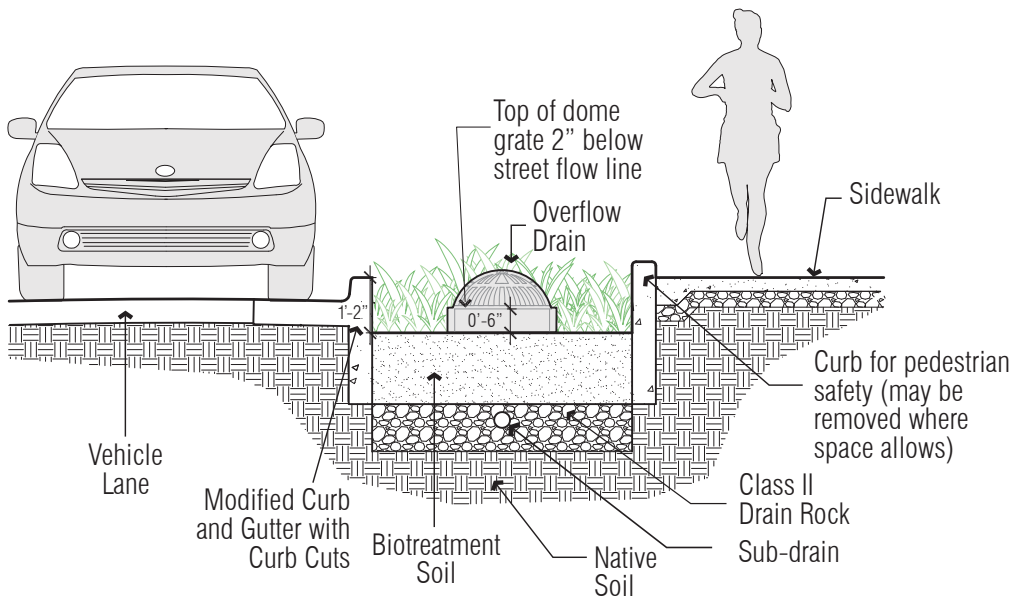
1. Consider incorporating street lighting standards to provide visibility and safety for pedestrians.
2. Source: City and County of San Francisco, 2011, Chapter 6.3: Lighting, *Better Streets Plan*, pages 206 to 208.
3. The above design guideline is a recommendation for complete streets implementation and does not supersede a jurisdiction's existing standards.

DESIGN GUIDELINE

Green Infrastructure & Stormwater: At Bulb-out



Stormwater planter at bulb-out
Source: US Environmental Protection Agency

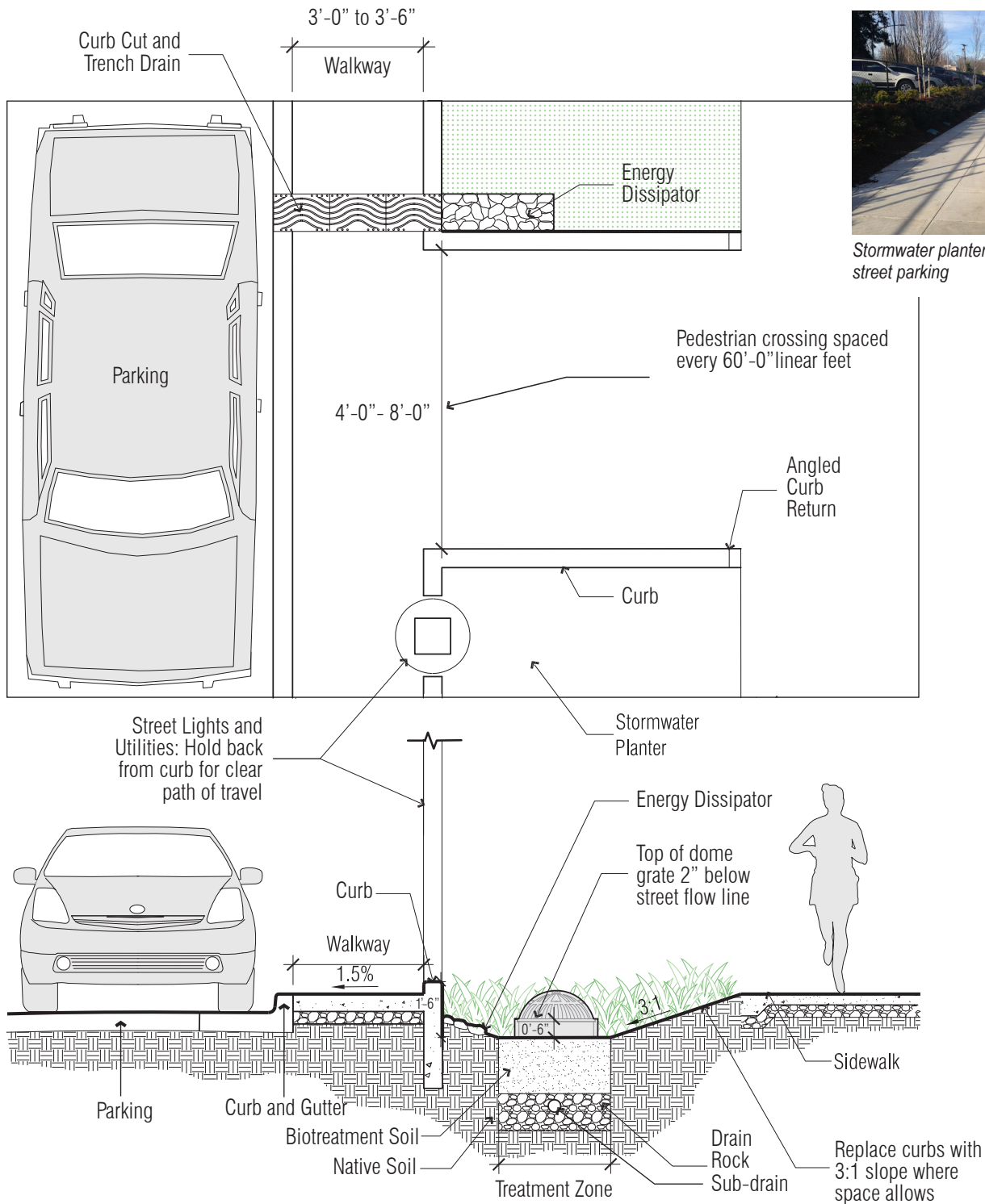


Notes:

1. Consider incorporating landscaping standards, including green infrastructure/stormwater requirements, for vegetation in the Curb Zone.
2. See Clean Water Program C.3 Stormwater Technical Guidance for more information on stormwater planters.
3. The above design guideline is a recommendation for complete streets implementation and does not supersede a jurisdiction's existing standards.
4. Square feet of the biotreatment area should be a minimum of 4% of total impervious drainage area.

DESIGN GUIDELINE

Green Infrastructure and Stormwater: At Parking



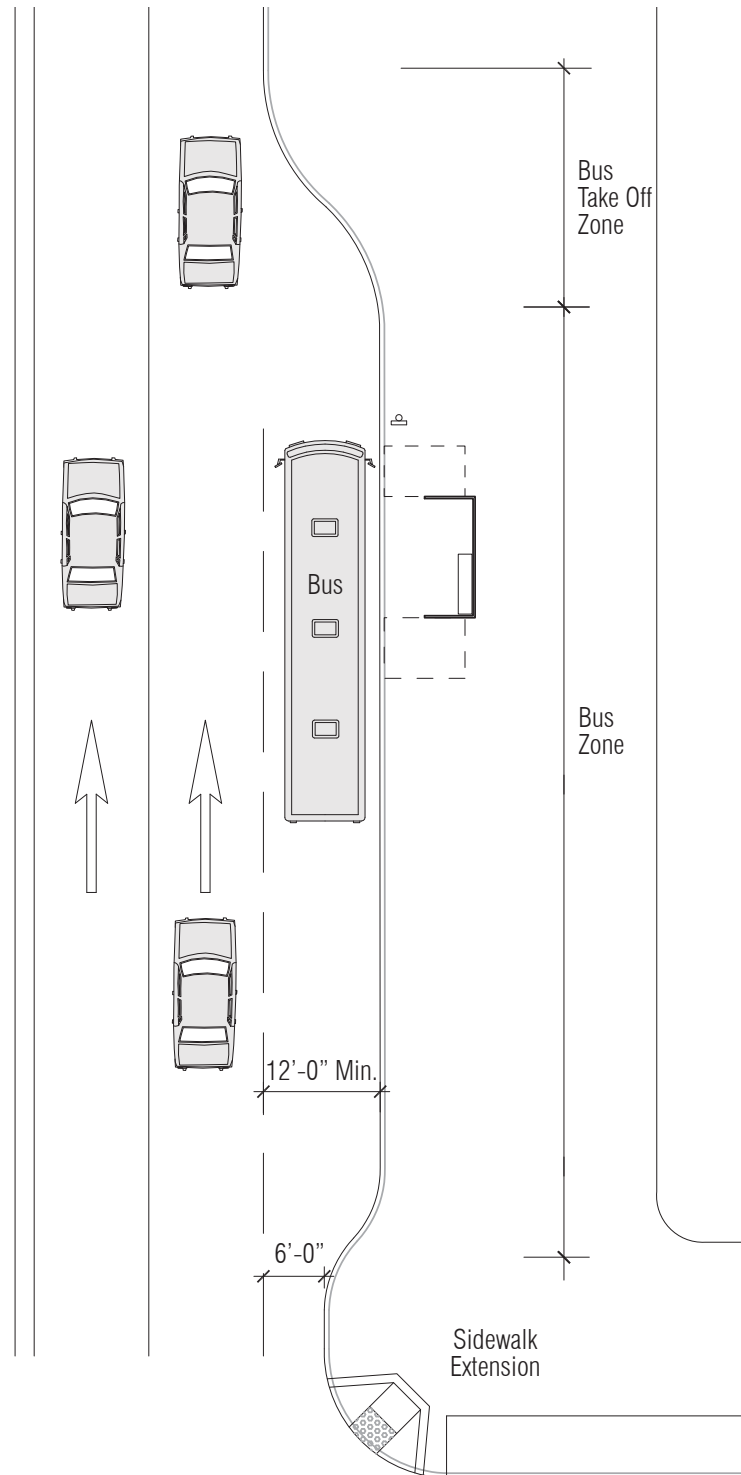
Stormwater planter between sidewalk and street parking

- Notes:
1. Consider incorporating landscaping standards, including green infrastructure/stormwater requirements, for vegetation in the Curb Zone.
 2. See Clean Water Program C.3 Stormwater Technical Guidance for more information on stormwater planters.
 3. The above design guideline is a recommendation for complete streets implementation and does not supersede a jurisdiction's existing standards.
 4. Square feet of the biotreatment area should be a minimum of 4% of total impervious drainage area.

DESIGN GUIDELINE

Bus Facilities: Bus Pull-out

Bus pull-outs are generally not preferred as they reduce pedestrian space and force buses to pull back into traffic. Bus pull-outs may be warranted if high-speed traffic presents rear-end collision risks.



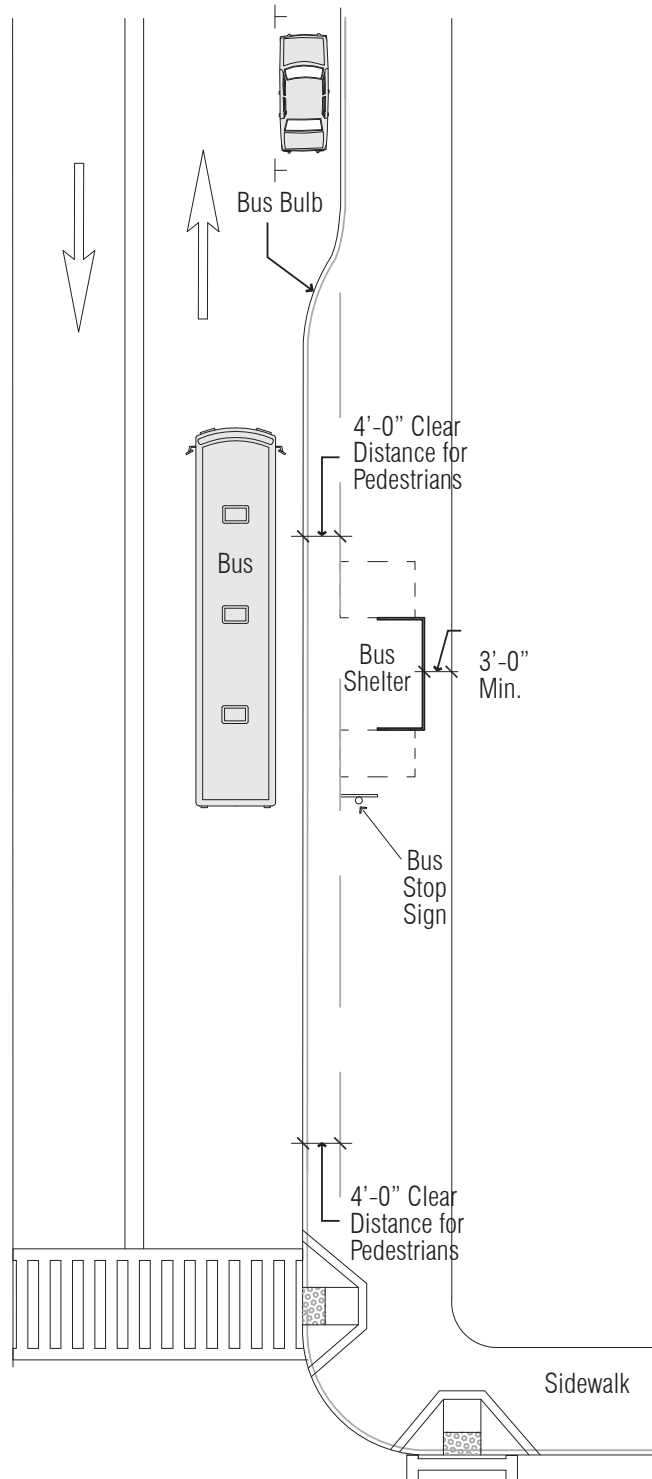
Notes:

1. Bus pull outs should be implemented on streets with a wider vehicle zone that allow for wider outside travel lanes.
2. Source: Federal Transit Administration, 1996, *Transit Cooperative Research Program (TRCP Report 19): Guidelines for the Location and Design of Bus Stops*, page 31; Alameda-Contra Costa Transit District, *Designing With Transit: Making Transit Integral to East Bay Communities*, http://www.actransit.org/wp-content/uploads/designing_with_transit2.pdf, accessed September 23, 2016.
3. The above design guideline is a recommendation for complete streets implementation and does not supersede a jurisdiction's existing standards.

DESIGN GUIDELINE

Bus Facilities: Bus Bulb

Bus bulbs eliminate delays to buses from pulling out of and back into traffic. Bus bulbs also create pedestrian waiting space and can enable shelters to be moved out of the Sidewalk Zone. Bus bulbs may also create on-street parking spaces as transition/taper zones are not needed.



Notes:

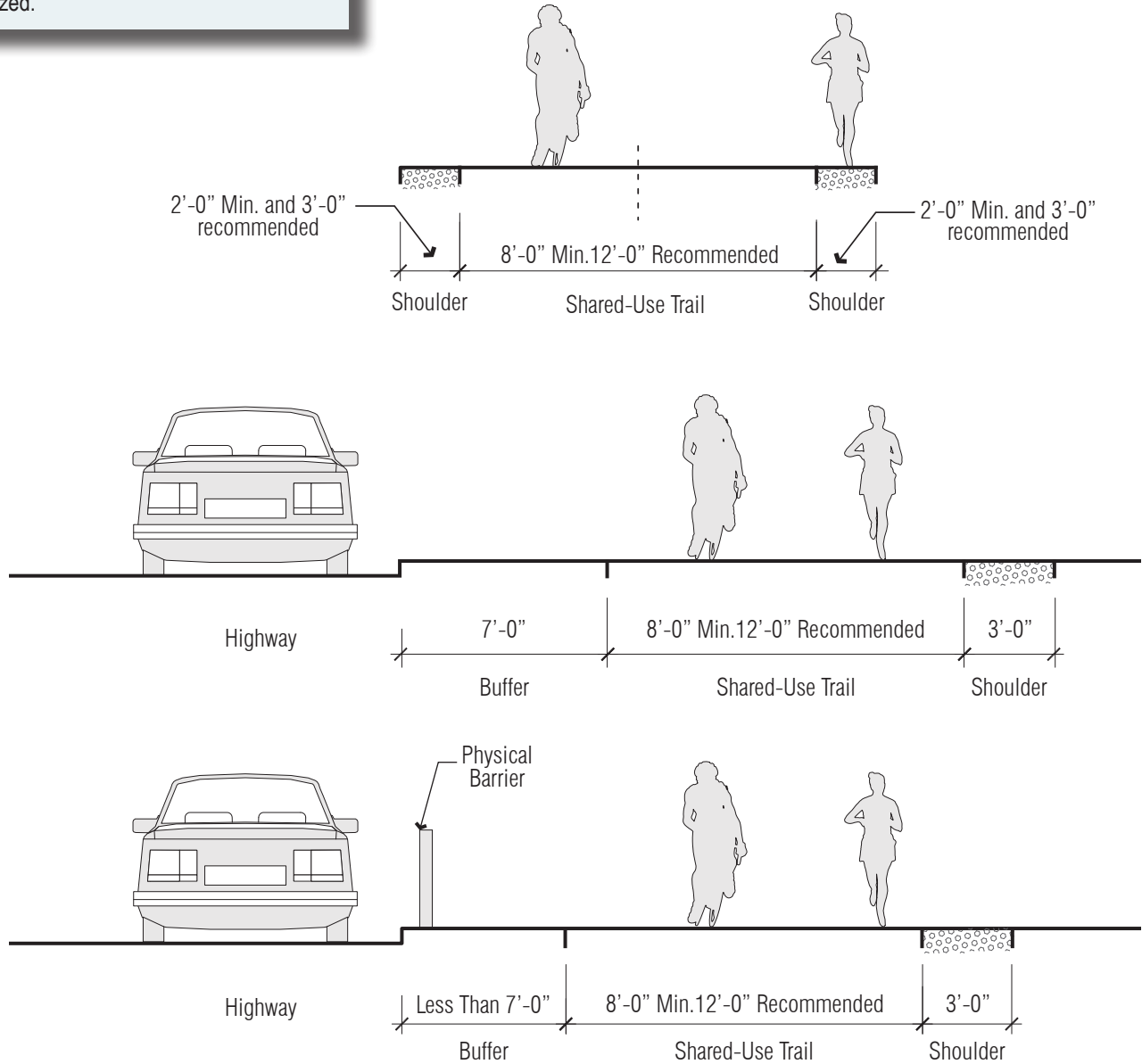
1. Sources: Federal Transit Administration, *Transit Cooperative Research Program (TRCP Report 19): Guidelines for the Location and Design of Bus Stops*, http://nacto.org/docs/usdg/trcp_report_19.pdf, page 35; National Association of City Transportation Officials, *Urban Street Design Guide*, <http://nacto.org/publication/urban-street-design-guide/street-design-elements/curb-extensions/bus-bulbs>, accessed July 22, 2016; Alameda-Contra Costa Transit District, *Designing With Transit: Making Transit Integral to East Bay Communities*, http://www.actransit.org/wp-content/uploads/designing_with_transit2.pdf, accessed September 23, 2016.
2. The above design guideline is a recommendation for complete streets implementation and does not supersede a jurisdiction's existing standards.



BICYCLE ZONE

DESIGN GUIDELINE
Class I Bikeway

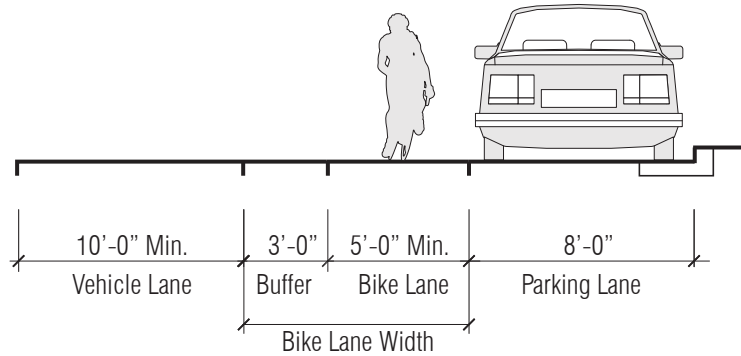
Class I Bikeways provide a completely separated right-of-way for the exclusive use of bicycles and pedestrians with crossflow minimized.



Notes:

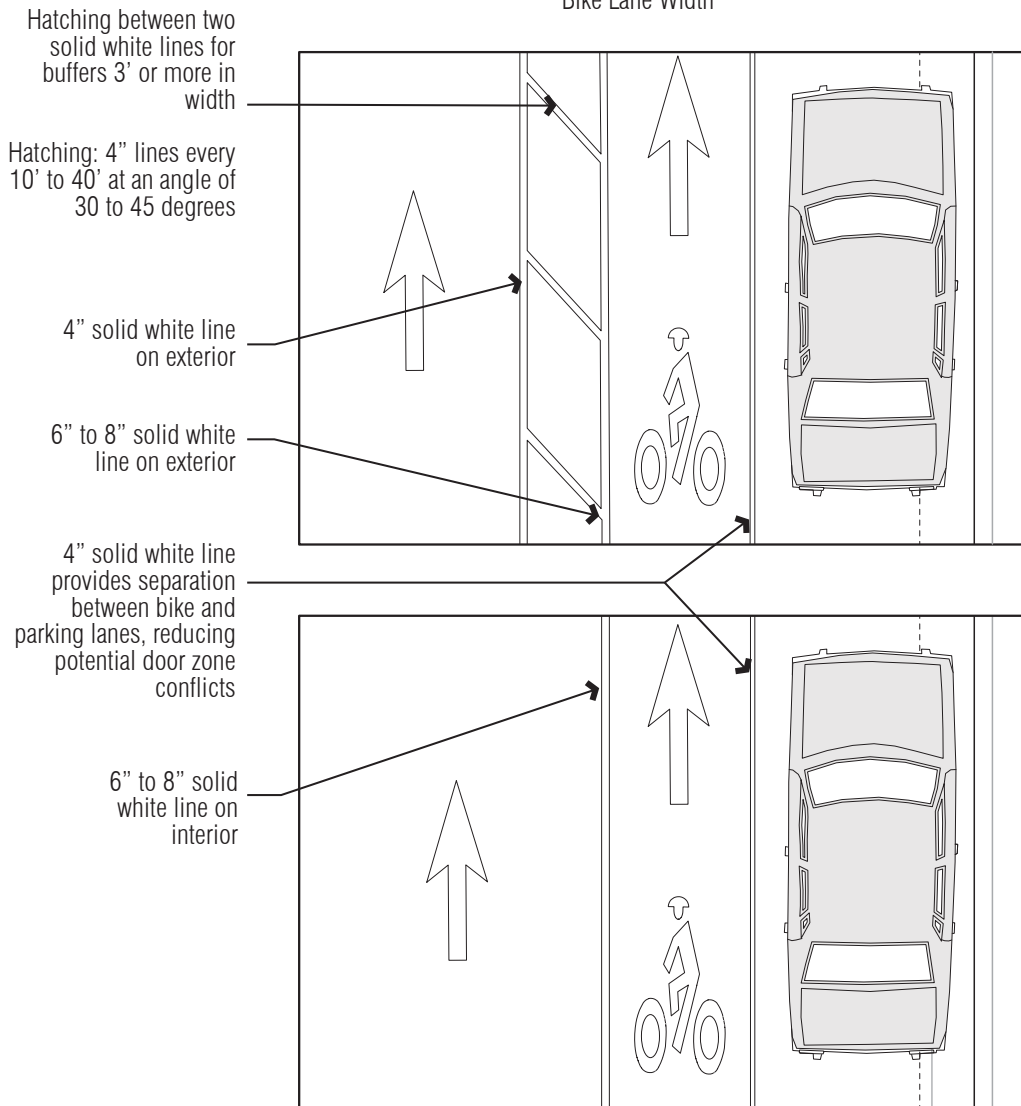
1. Class I Bikeways are to be considered where opportunity coincides with planning.
2. A wider shoulder can attract more pedestrian traffic and potentially reduce conflicts with bicyclists on the bike path.
3. Sources: San Francisco Bay Trail, June 2016, *San Francisco Bay Trail Design Guidelines and Toolkit*, page 35; Fehr and Peers, 2014.
4. The above design guideline is a recommendation for complete streets implementation and does not supersede a jurisdiction's existing standards.

DESIGN GUIDELINE
Class II Bike Lanes



Class II Bike Lanes provide a striped lane for one-way bike travel on a street or highway.

Buffer spaces provide separation between cars and cyclists to increase comfort. Buffers can be used to narrow travel lanes, reducing speeds and injury severity. Buffer zones also minimize the impacts of double parking, loading, and vehicles pulling in and out of parking spaces on adjacent travel lanes. Buffer spaces can also accommodate overhanging larger vehicles.



Bike lane with striped buffer



Bike lane with planter buffer

Notes:

1. It is recommended to provide a bicycle facility such as a Class II Bike Lane on all arterial and collector streets, although a Bicycle Zone is not required.
2. It is acceptable to provide a Class II Bike Lane with signage for streets with a narrower overall street width.
3. It is recommended to provide a wider Bicycle Zone to include a buffer between the Bicycle and Vehicle Zones or between the Bicycle and Parking Zones.
4. Source: National Association of City Transportation Officials, 2012, *Urban Bikeway Design Guide*, Second Edition, pages 11 to 19.
5. The above design guideline is a recommendation for complete streets implementation and does not supersede a jurisdiction's existing standards.

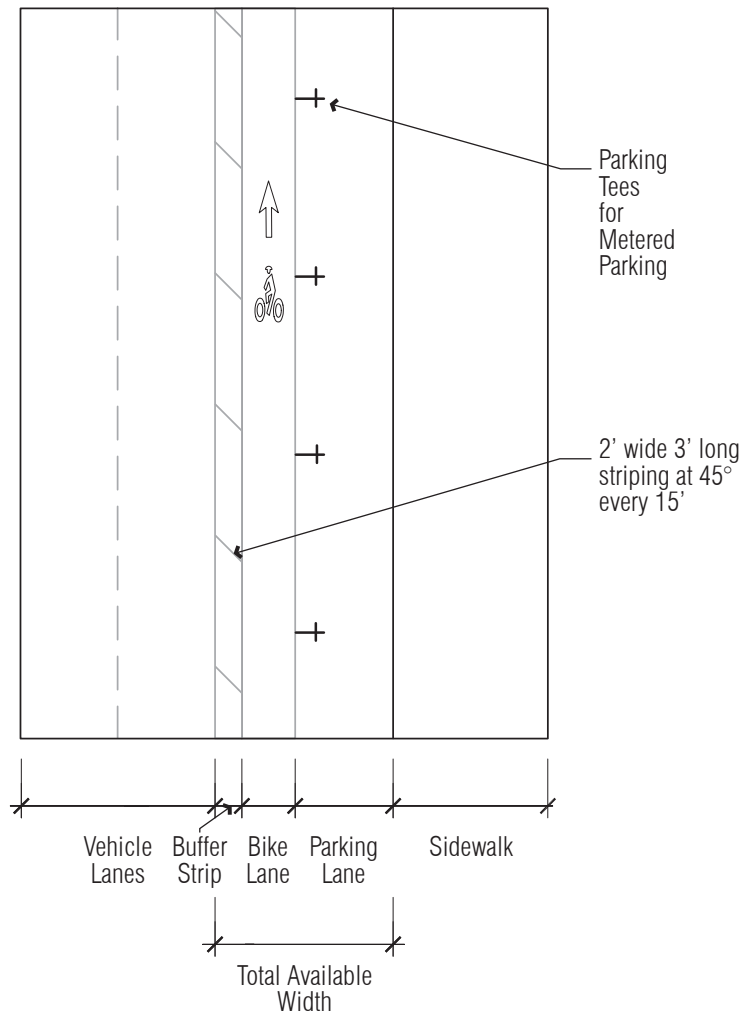
DESIGN GUIDELINE

Class II Bike Lanes: Total Available Width

RECOMMENDED PARKING LANE, BIKE LANE, AND BUFFER WIDTHS FOR VARIOUS LANE WIDTHS [1]

TOTAL AVAILABLE WIDTH (feet)	PARKING LANE WIDTH (feet)	BIKE LANE WIDTH (feet)	BUFFER WIDTH (feet)	METERED PARKING TEES FROM CURB FACE DISTANCE (feet)
12 [2]	7	5	0	7
13 [2]	8	5	0	8
14	9	5	0	7
15	10	5	0	8
16	9	5	2	7
17	10	5	2	8
18	10	6	2	8
19	10	6	3	8
20	11	6	3	9

If there is 19' or 20' of available width, buffers on both sides of the bike lane can be added.



Notes:

1. Total available width indicates the combined width of the bike lane, parking lane, and optional buffer measured from the curb face to the outside bike lane stripe.
2. 12' and 13' total available widths apply to parking lanes with metered parking only. All other total available widths apply to parking lanes for both metered and unmetered parking.
3. If illegal parking within bike lanes is an issue, a 5' bike lane may be recommended.
4. When the bike lane is adjacent to a curb and gutter, it is recommended to maintain a minimum of 2.5' clear surface beyond the gutter.
5. When adjacent to a guardrail or other physical barrier, provide an additional 2' of lane width clearance.
6. Many jurisdictions prefer a 6' minimum bike lane to provide extra space for bicyclists to keep them safely outside the door zone and to ensure bicyclists are not riding in the gutter. The door zone refers to the area where bicyclists are vulnerable to being hit by an opening car door in the parking lane.
7. Source: City of Oakland Bureau of Engineering and Construction, December 2015, "Bike Lane and Buffer Widths," Bicycle Facilities Program.
8. The above design guideline is a recommendation for complete streets implementation and does not supersede a jurisdiction's existing standards.

DESIGN GUIDELINE

Bike Lanes: Modal Priorities and Posted Speed Limits

RECOMMENDED BIKE LANE WIDTHS (feet) FOR VARIOUS ARTERIAL/COLLECTOR MODAL PRIORITIES AND POSTED SPEED LIMITS				
POSTED SPEED LIMIT:	25 mph	30 to 35 mph	40 to 45 mph	> 50 mph
BICYCLE PRIORITY STREETS				
Class II Bike Lane	6 ft.	8 ft.	10 ft.	12 ft.
Class II Buffered Bike Lane ^[1]	9 ft.	11 ft.	13 ft.	15 ft.
Class IV Separated Bikeway with Raised Curb on Both Sides ^{[2][3]}	8 ft.	8 ft.	8 ft.	8 ft.
Class IV Separated Bikeway with Raised Curb on Only One Side	6 ft.	6 ft.	6 ft.	6 ft.
ALL OTHER MODAL PRIORITIES				
Class II Bike Lane	5 ft.	6 ft.	8 ft.	10 ft.
Class II Buffered Bike Lane ^[1]	8 ft.	9 ft.	11 ft.	13 ft.
Class IV Separated Bikeway with Raised Curb on Both Sides ^{[2][3]}	7 ft.	7 ft.	7 ft.	7 ft.
Class IV Separated Bikeway with Raised Curb on Only One Side	5 to 6 ft.	5 to 6 ft.	5 to 6 ft.	5 to 6 ft.

Notes:

1. Width includes the buffer width since the allocation of width between the bike lane versus the buffer strip can vary.
2. Indicated width does not include the width of the separation buffer strip since this can vary considerably depending on the design. The separation buffer width typically varies from as little as 3' with only flexible stanchions (tubular markers) to as much as 12' with on-street parking.
3. There is no change in width of Class IV facilities based on speed limit since cyclists are not riding adjacent to the traffic and still have to interact with motorists at intersections.
4. If on-street parking is permitted, an additional 8' is necessary for the (parallel) parking lane.
5. All widths are for one-way bikeways.
6. The above design guideline is a recommendation for complete streets implementation and does not supersede a jurisdiction's existing standards.

DESIGN GUIDELINE

Class II Bike Lanes: Signage

Pavement Markings

Bike lane striping should allow bicyclists to **follow a straight path** outside of the motor vehicle tread path.

- A 6 to 8 inch-wide, solid white line should be used at the right edge of the outside travel lane to designate the portion of the roadway for bicyclists.
- An optional solid white line can also be used at the outside of the bike lane between the bike and parking lanes.
- At an intersection where right turns are permitted, the bike lane line should terminate 100 to 200 feet prior to the intersection or be substituted by a dashed line marked up to the intersection.

Bike lane pavement markings should be used to further define bike lane space for bicyclists and motorists.

- These should be placed at the start of all bike lanes, on the far side of each intersection, and at other desired locations.
- The bike lane pavement marking should include a directional arrow and one of the accompanying word or bicycle symbols (Figures 1 and 2).
- Another option for pavement marking includes colored bike lanes. Colored bike lanes can be used in high-conflict areas to alert motorists to the presence of bicyclists and bike lanes.
- Markings can be painted or treated with thermoplastic. Thermoplastic paving is a preferred option because of its increased durability, reflectivity, and lack of toxic solvents.

Signage

- The bike lane signs (CA MUTCD R81) as shown in Figure 3 should be placed at the beginning of each designated bike lane, on the far side of arterial intersections, at major changes in direction, and at ½ mile intervals.
- The BEGIN (CA MUTCD R81A) and END (CA MUTCD R81B) signs may be used below the required R81-sign to mark the beginning or end of a bike lane (Figure 4). If bike lane pavement markings are used it is not necessary to include the bike lane sign at each pavement marking.
- Signs may also be used to state BICYCLE WRONG WAY (CA MUTCD R5-1b – See Figure 5) on the back of bike lane signs to reinforce appropriate traffic flow for bicyclists.

Notes:

1. Sources: Caltrans Highway Design Manual (HDM), California Manual on Uniform Traffic Control Devices (CA MUTCD), and American Association of State Highway and Transportation Officials (AASHTO) Guide for the Development of Bicycle Facilities.



Figure 1 Bike lane pavement marking with accompanying word symbol



Figure 2 Additional option for bike lane pavement marking



Colored bike lane



Signage indicating shared use of the road



Figure 3 CA MUTCD R81 required signage for Class II bike lane



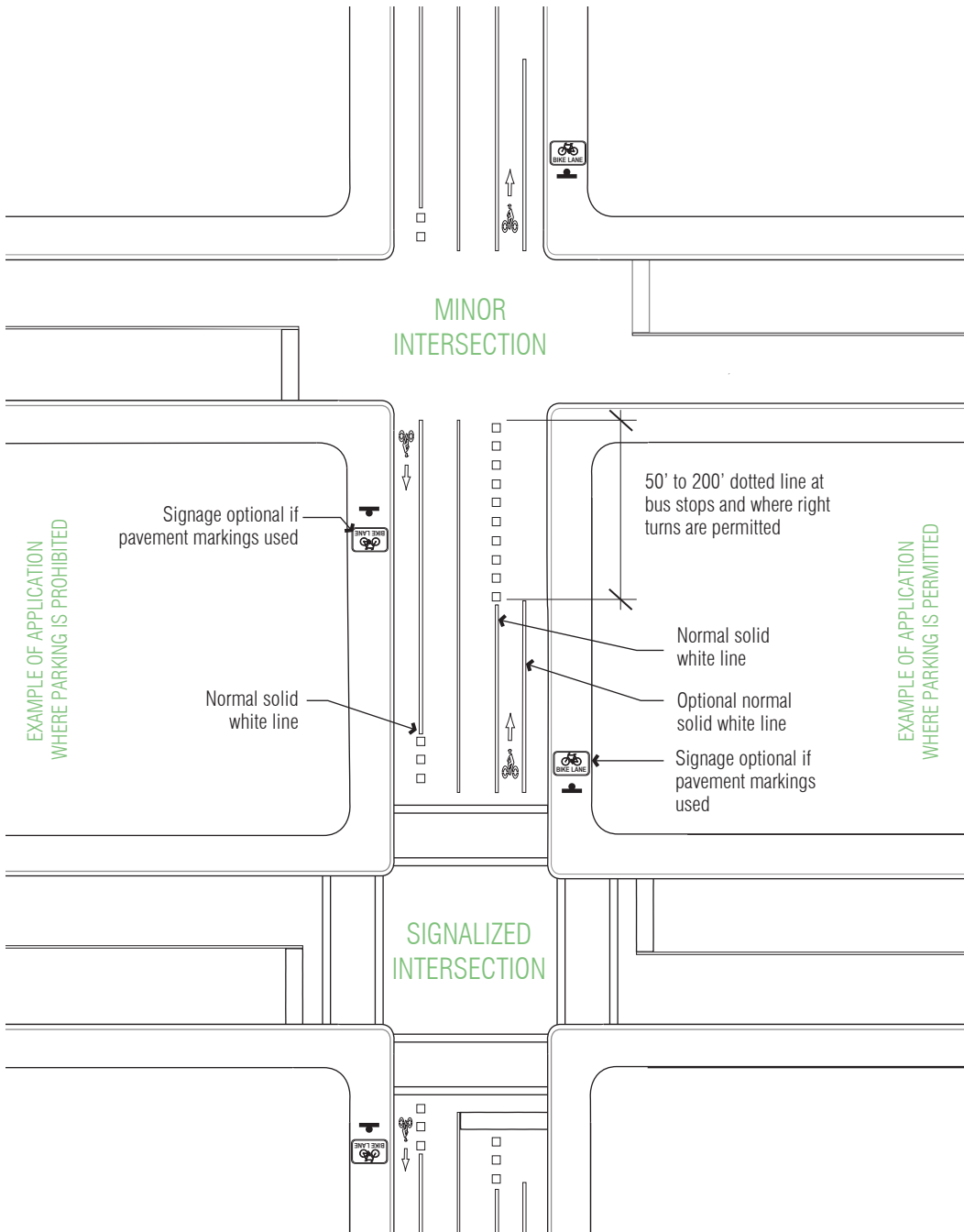
Figure 4 Optional signage for the start and end of bike lanes



Figure 5 Optional Wrong Way signage

DESIGN GUIDELINE

Class II Bike Lanes: Striping and Pavement Markings



Dotted bike lane marking through street intersection for added bicyclist safety

Notes:

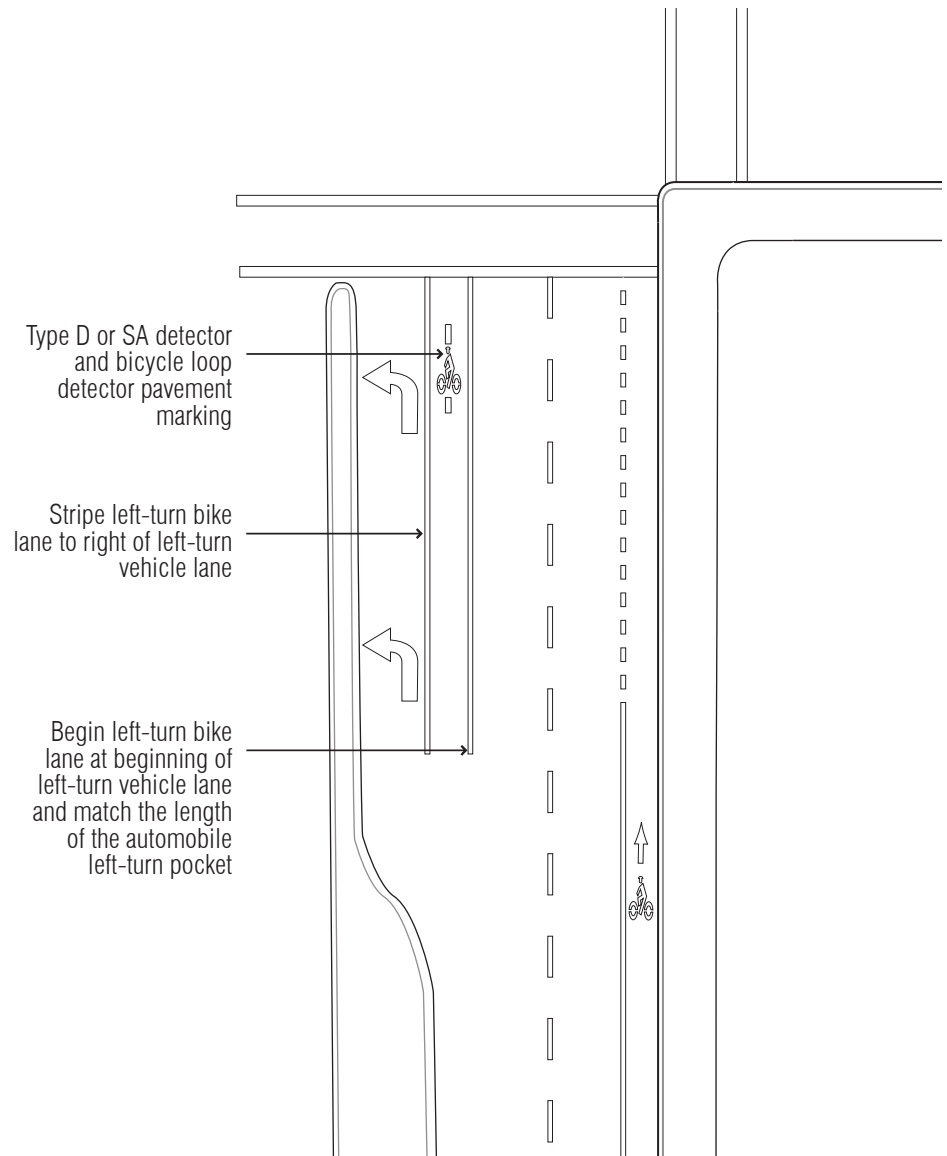
1. Sources: Federal Highway Administration (FHWA), 2006, FHWA University Course on Bicycle and Pedestrian Transportation, "Figure 15-10. Illustration. Typical pavement markings for bike lane on two-way street," <http://www.fhwa.dot.gov/publications/research/safety/pedbike/05085/chapt15.cfm>, accessed August 17, 2016; American Association of State Highway and Transportation Officials (AASHTO), 1999, *Guide for the Development of Bicycle Facilities*.
2. The above design guideline is a recommendation for complete streets implementation and does not supersede a jurisdiction's existing standards.

DESIGN GUIDELINE

Class II Bike Lanes: Left Turn Treatments

Length of left-turn pocket should match the length of the automobile left-turn pocket so that the cyclist may enter the left-turn lane at the very beginning of the left-turn pocket and be more protected from motorized traffic.

In certain locations, for example where the adjacent through lane is high-speed or where the left-turn lane exceeds 200' in length, consider a 3' wide buffer (with or without flexible delineators) for the last 100 feet of the turn lane. The buffer would be located between the through lane and the bike left-turn pocket.

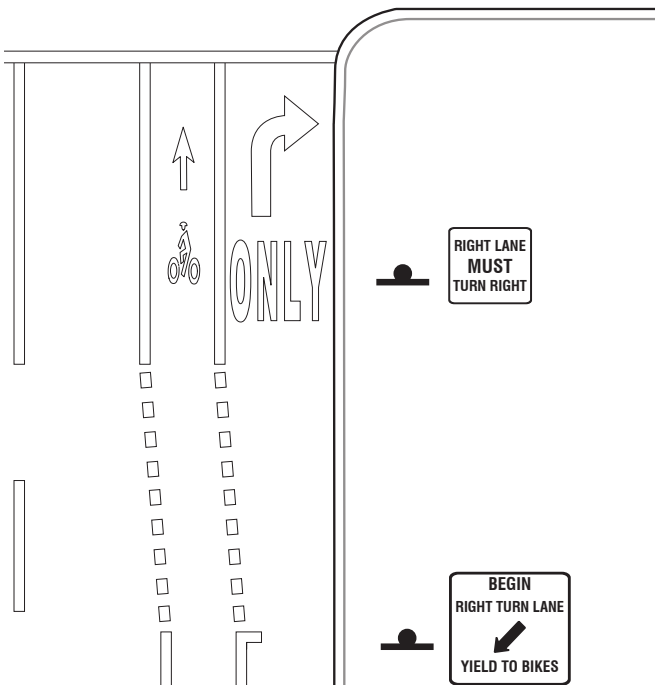


Notes:

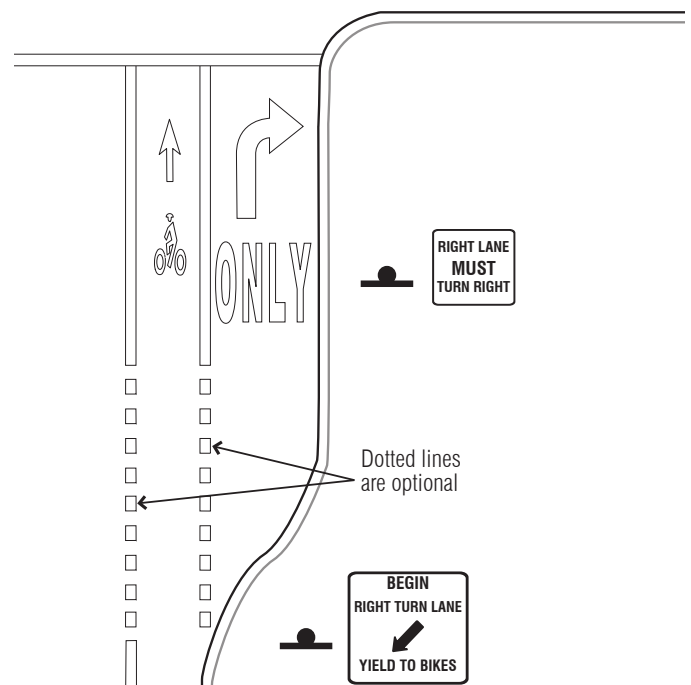
1. Sources: Federal Highway Administration (FHA), 2006, *FHA University Course on Bicycle and Pedestrian Transportation*, "Figure 15-11. Illustrations. Possible configurations for bike lane and right-turn lane," <http://www.fhwa.dot.gov/publications/research/safety/pedbike/05085/chapt15.cfm>, accessed August 17, 2016; American Association of State Highway and Transportation Officials (AASHTO), 1999, *Guide for the Development of Bicycle Facilities*.
2. The above design guideline is a recommendation for complete streets implementation and does not supersede a jurisdiction's existing standards.

DESIGN GUIDELINE

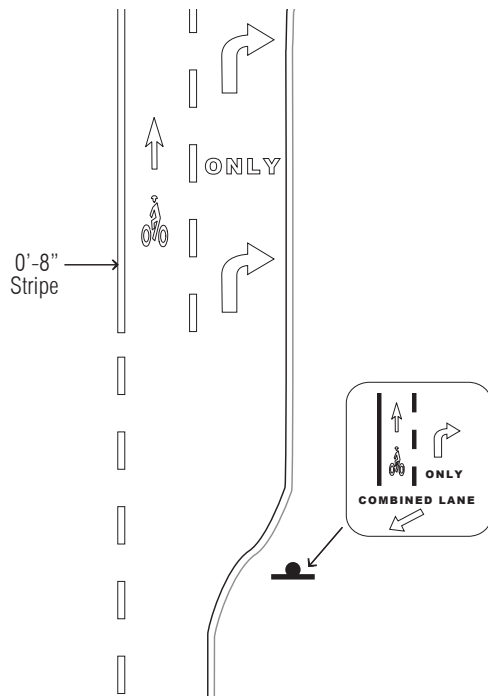
Class II Bike Lanes: Right Turn Treatments



PARKING LANE BECOMING RIGHT-TURN LANE



BIKE LANE POCKET AT RIGHT-TURN ONLY LANE



SHARED RIGHT-TURN/BICYCLE THROUGH LANE



Bicycle-through-lane adjacent to right-turn lane



Bicycle right-turn lane adjacent to right-turn lane for vehicles



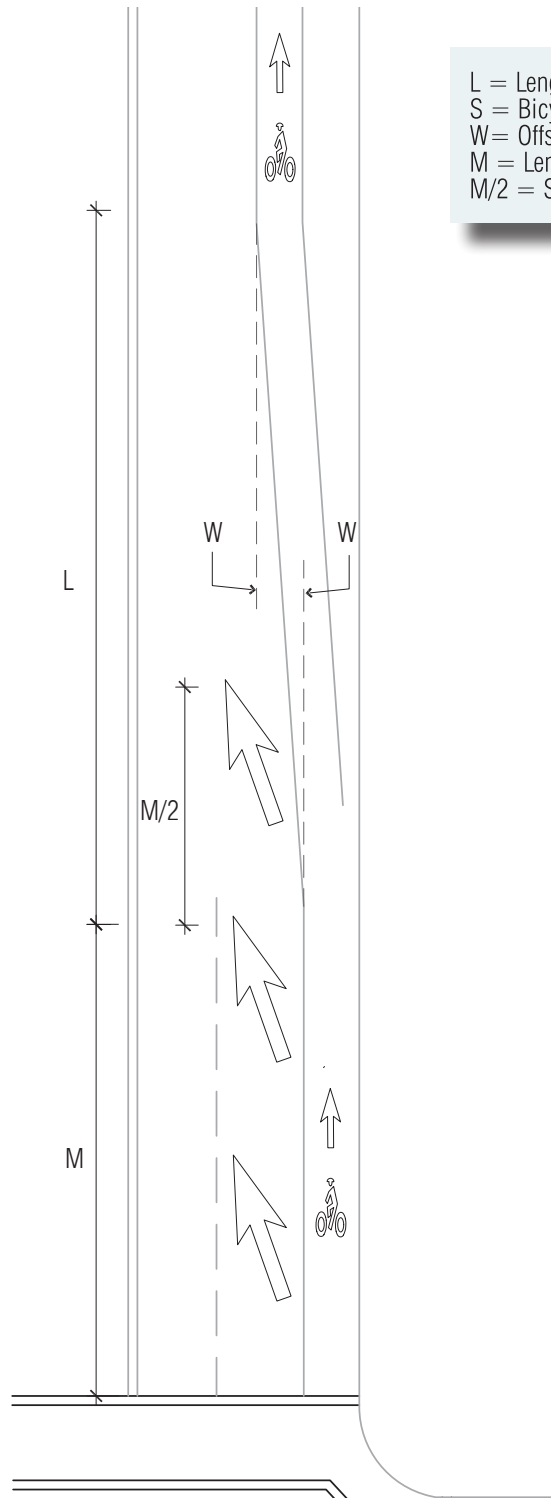
Shared right-turn lane with "sharrow" marking for Class III Bike Routes

Notes:

1. Sources: Federal Highway Administration (FHA), 2006, *FHA University Course on Bicycle and Pedestrian Transportation*, "Figure 15-11. Illustrations. Possible configurations for bike land and right-turn lane," <http://www.fhwa.dot.gov/publications/research/safety/pedbike/05085/chapt15.cfm>, accessed August 17, 2016; American Association of State Highway and Transportation Officials (AASHTO), 1999, *Guide for the Development of Bicycle Facilities*.
2. The above design guideline is a recommendation for complete streets implementation and does not supersede a jurisdiction's existing standards.

DESIGN GUIDELINE

Class II Bikeways: Lane Reduction Transition Markings

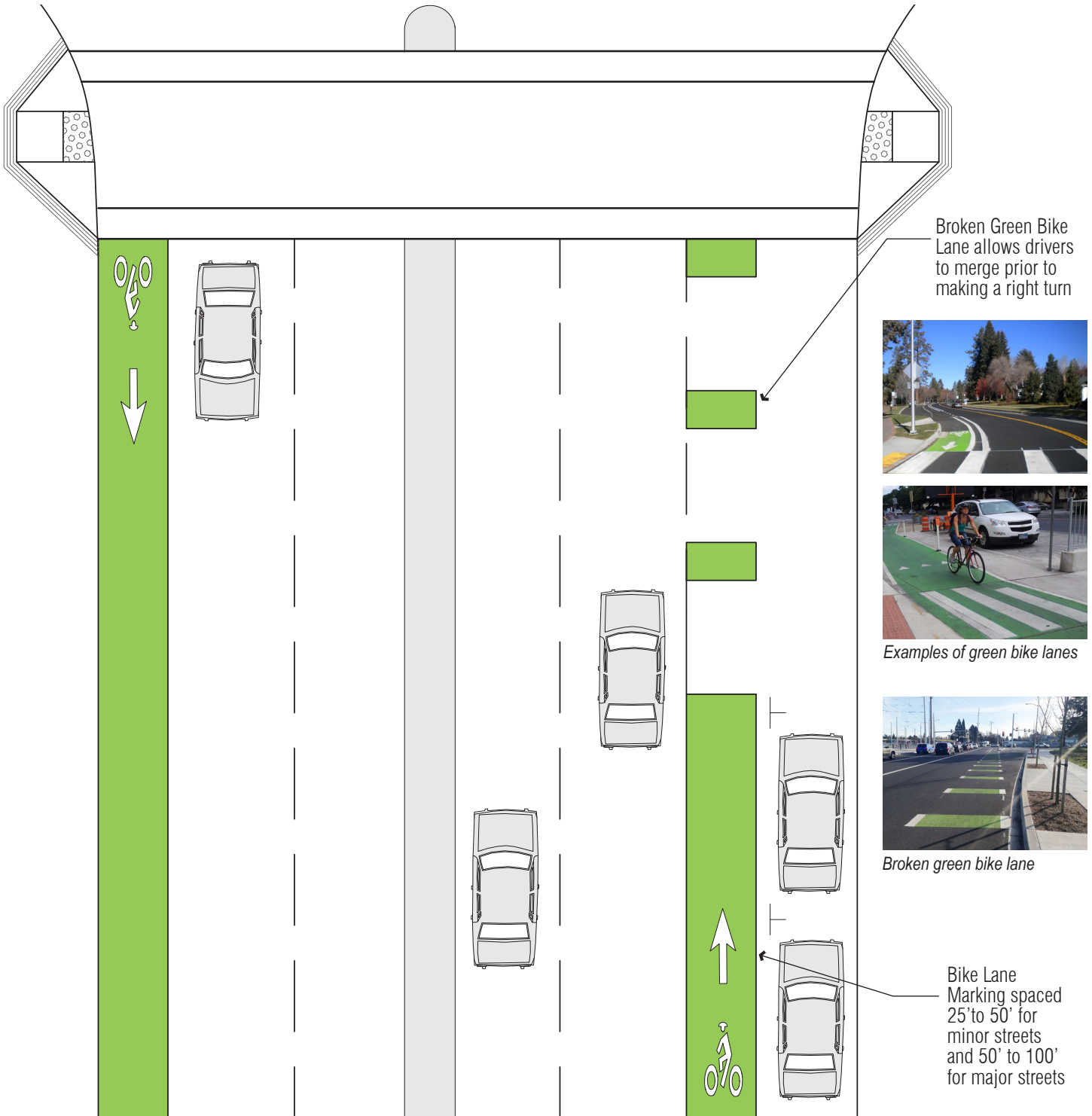


L = Length in feet or $W \cdot S$
 S = Bicycle approach speed in miles per hour
 W = Offset in feet
 M = Length of skip strip in feet: $M = (2L)/3$ & $M \geq 55'$
 M/2 = Spacing of arrows in feet

Notes:

1. Source: City of Oakland Bureau of Engineering and Construction, December 2015, "Lane Reduction Transition Markings with Bike Lane," Bicycle Facilities Program.
2. The above design guideline is a recommendation for complete streets implementation and does not supersede a jurisdiction's existing standards.

DESIGN GUIDELINE
Green Bike Lane



Notes:

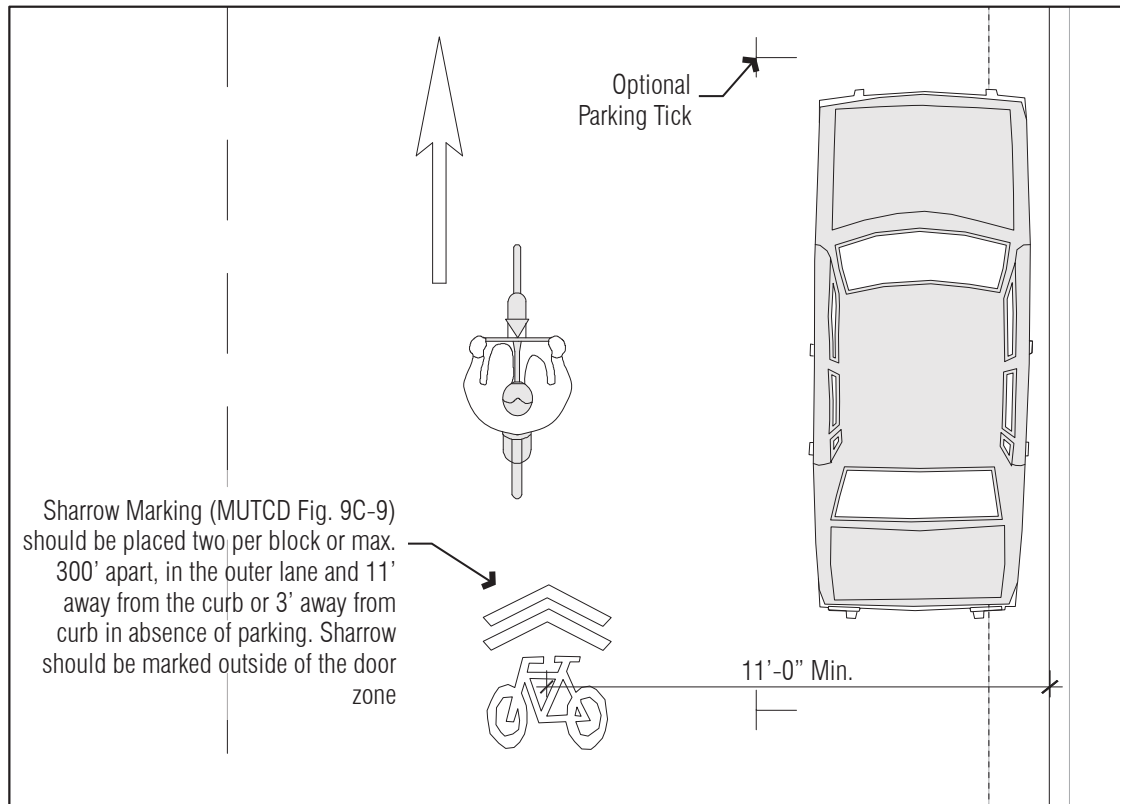
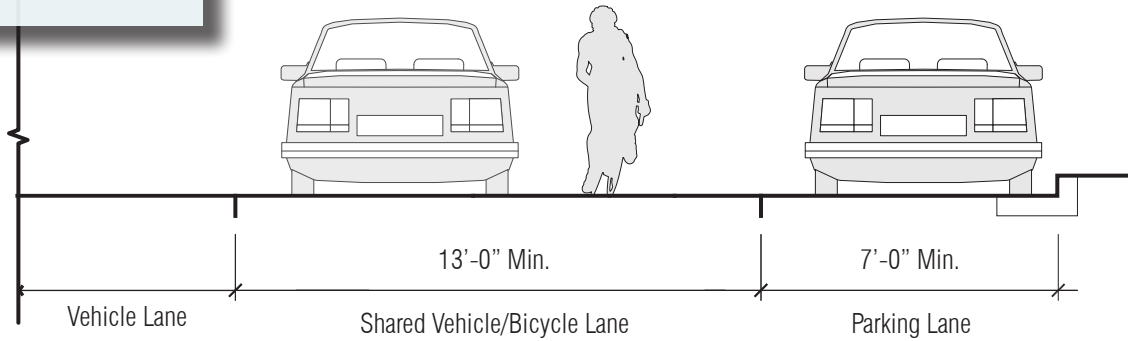
1. It is recommended to provide green lanes in an urban land use typology.
2. Source: Bialick, Aaron, StreetsBlogSF, May, 11, 2012, "SFMTA Draft Design Standards to Streamline Innovative Bike Treatments," <http://sf.streetsblog.org/2012/05/11/sfmta-drafting-design-standards-to-streamline-innovative-bike-treatments>, accessed July 22, 2016.
3. The above design guideline is a recommendation for complete streets implementation and does not supersede a jurisdiction's existing standards.

DESIGN GUIDELINE Class III Bike Route

Class III Bike Routes provide for shared use with motor vehicle traffic. Shared lane stencils or “sharrows” assist cyclists with lane positioning, provide wayfinding, and alert motorists of the presence of bicycles.



Examples of sharrow markings on the roadway



Notes:

1. It is recommended to provide a shared use bicycle facility such as a Class III Bike Route on local streets with lower traffic volumes and speeds.
2. Sources: City of Redmond, 2012, *Bicycle Facilities Design Manual*, page 24; National Association of City Transportation Officials, 2012, *Urban Bikeway Design Guide*, Second Edition, pages 179 to 181.
3. The above design guideline is a recommendation for complete streets implementation and does not supersede a jurisdiction's existing standards.

DESIGN GUIDELINE Class III Enhanced: Bike Boulevard

Bicycle boulevards are local (often residential) streets where bicycle traffic is given right-of-way wherever feasible, primarily by removing unwarranted STOP signs, which improves the travel time for bicyclists

ENHANCED TREATMENTS FOR BICYCLE BOULEVARDS



Special bikeway signs and BIKE BLVD pavement markings



Directional signs to common destinations, including distance and travel time for cyclists



Gateway treatments at main entrance points to the bicycle boulevard

CRITERIA FOR SELECTING LOCATION OF A BICYCLE BOULEVARD

Residential street

Existing low volumes (under 3,000 average daily trips)

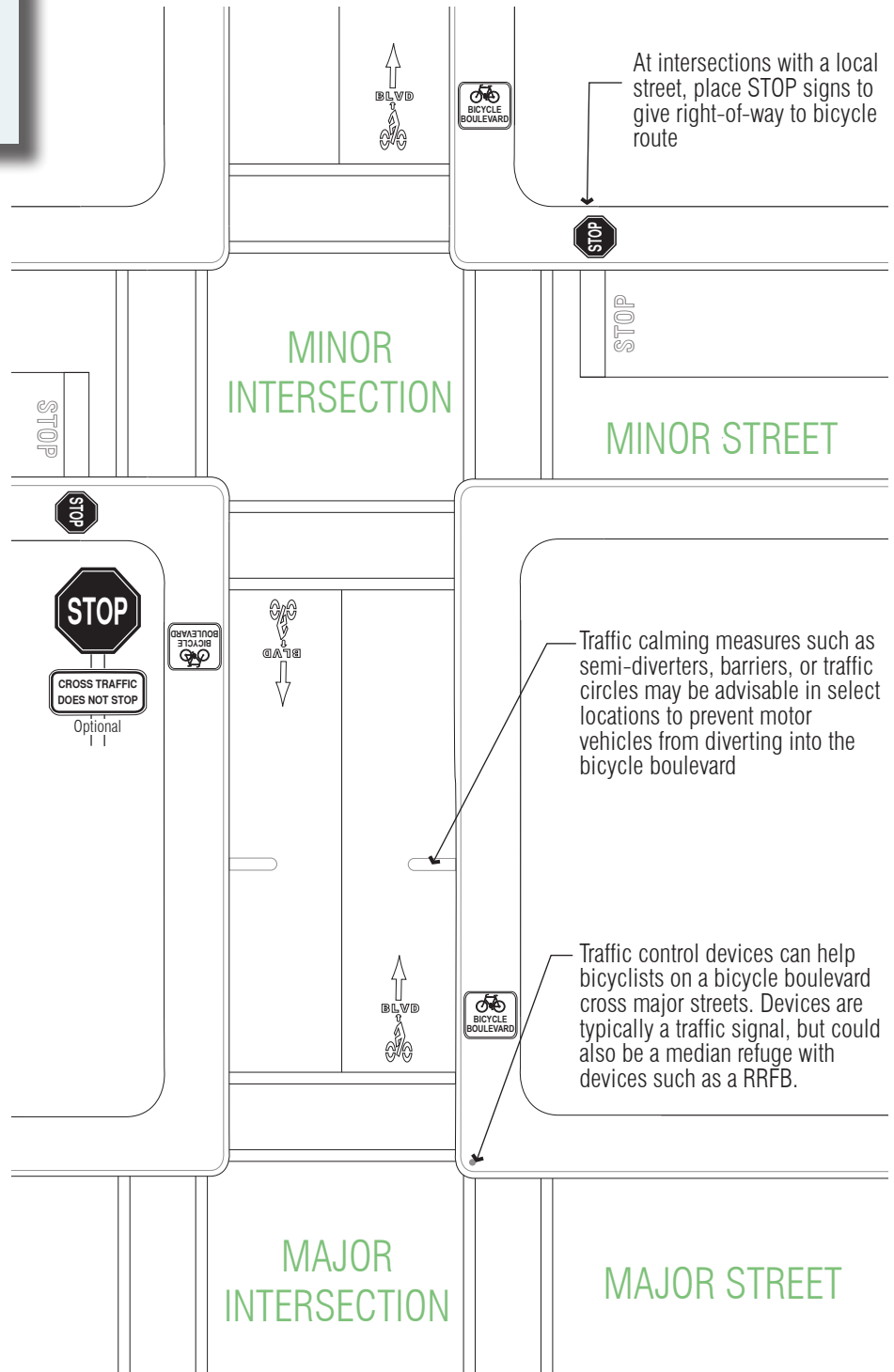
No or very little commercial land uses

Roadway parallel to a major arterial or a high-traffic collector street (within approximately 0.25 mile)

Roadway is not a transit or truck route

Roadway is reasonably continuous with few jogs and turns

Bicycle Boulevard can ideally extend for at least two miles

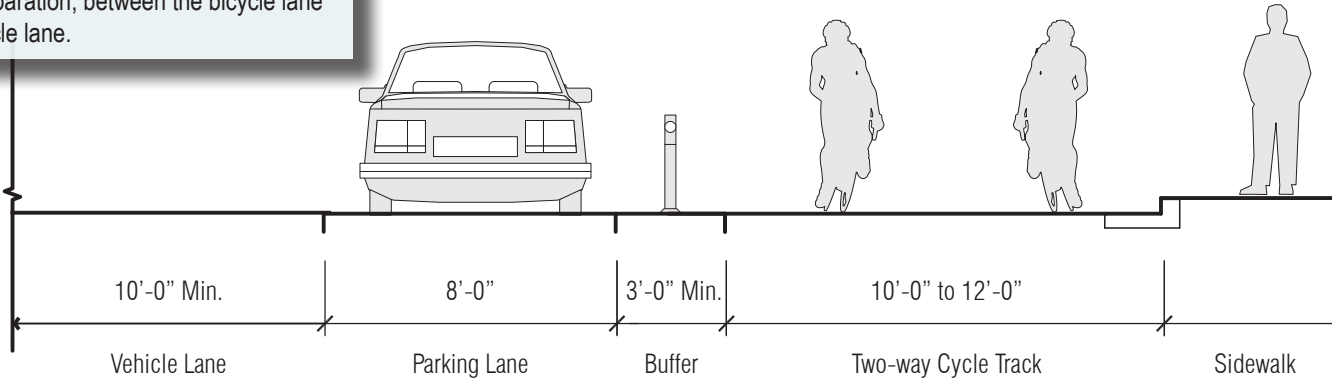


- Notes:
1. It is recommended to provide a shared use bicycle facility such as a Class III Enhanced Bicycle Boulevard on local streets with lower traffic volumes and speeds.
 2. The above design guideline is a recommendation for complete streets implementation and does not supersede a jurisdiction's existing standards.

DESIGN GUIDELINE

Class IV Protected Bike Lane: Cycle Track

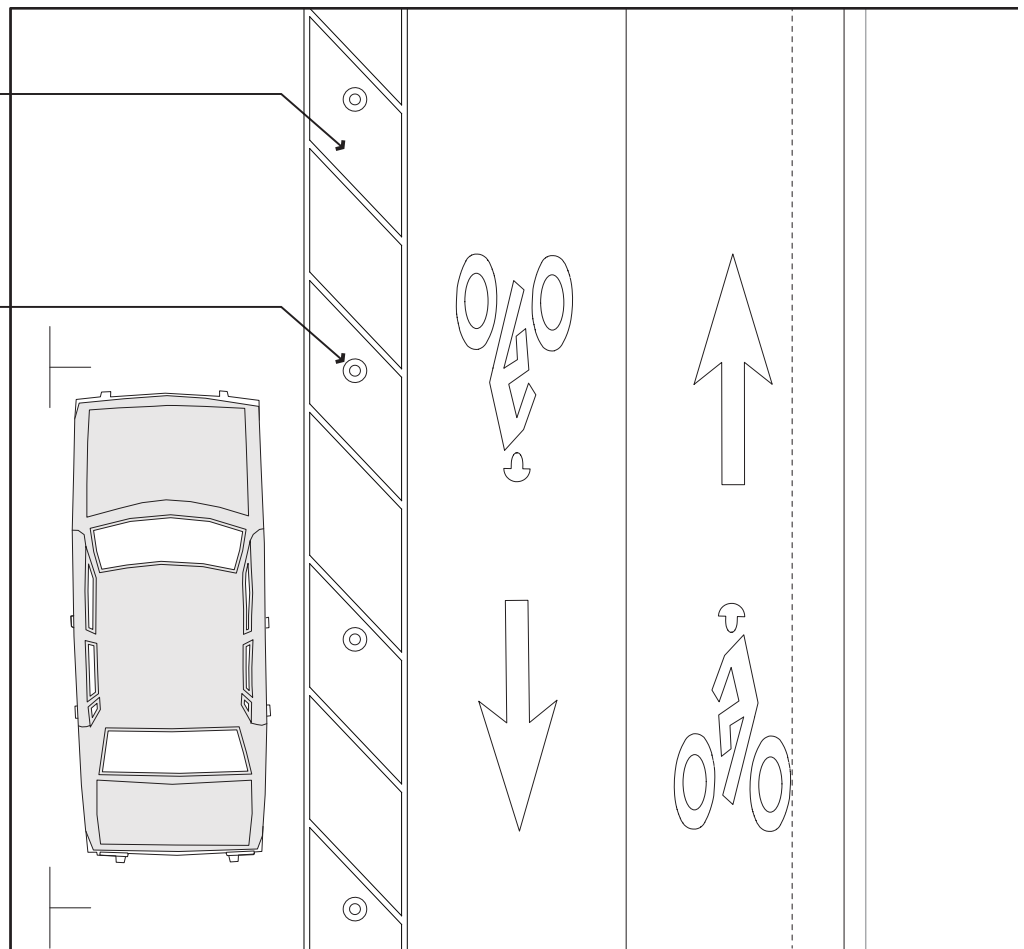
Class IV Protected Bike Lanes provide exclusive use of bicycles, including separation in the form of physical barriers or grade separation, between the bicycle lane and vehicle lane.



Hatching between two solid white lines for buffers 3' or more in width (for buffers with only pavement markings)

Hatching: 4" lines every 10' to 40' at an angle of 30 to 45 degrees

Tubular markers in buffer space are one option for a physical barrier. Other options include planters, bollards, or a raised curb.



Cycle track pavement markings



Protected cycle track

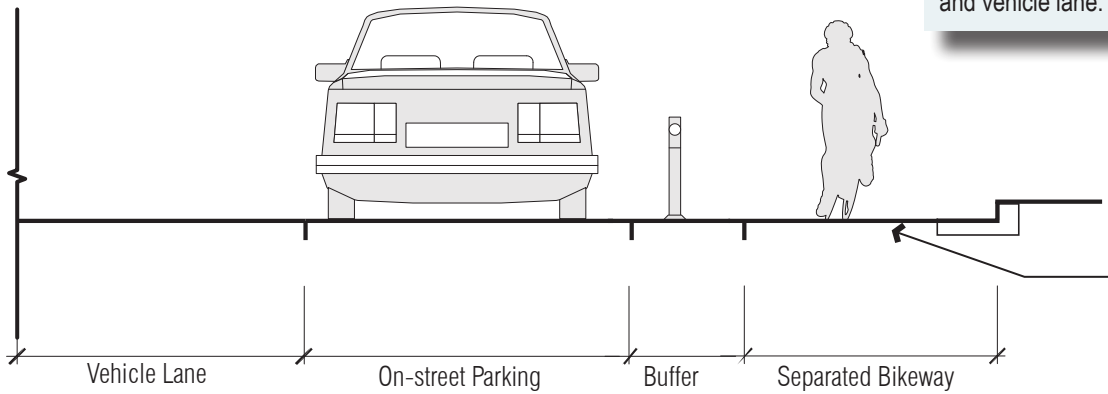
Notes:

1. It is recommended to provide a wider Bicycle Zone to include a buffer between the Bicycle and Vehicle Zones or between the Bicycle and Parking Zones (Class IV Protected Bike Lane).
2. Sources: California Department of Transportation, December 2015, "Class IV Bikeway Guidance: Separated Bikeways/Cycle Tracks," Design Information Bulletin Number 89, pages 2 to 6; National Association of City Transportation Officials, 2012 Second Edition, *Urban Bikeway Design Guide*, pages 61 to 63.
3. The above design guideline is a recommendation for complete streets implementation and does not supersede a jurisdiction's existing standards.

DESIGN GUIDELINE

Class IV Protected Bike Lane: On-Street with Parking

Class IV Protected Bike Lanes provide exclusive use of bicycles, including separation in the form of physical barriers or grade separation, between the bicycle lane and vehicle lane.

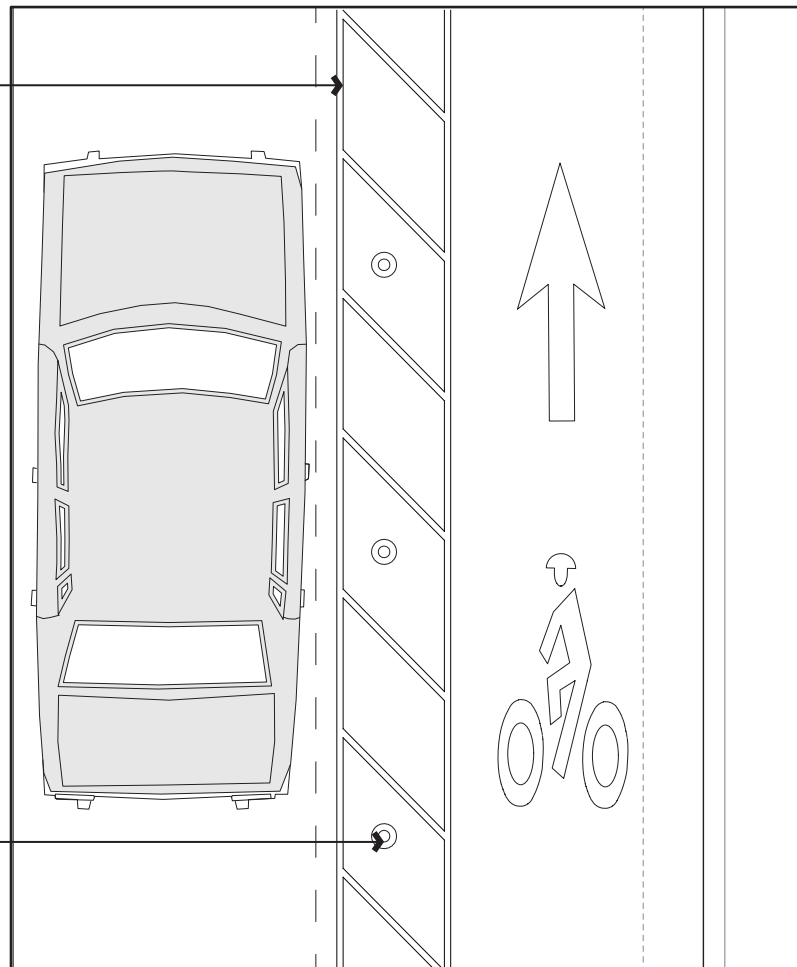


7' minimum for areas with high bicyclist volume or at an uphill section to allow bicyclists enough room for passing other bicyclists

Hatching between two solid white lines for buffers 3' or more in width (for buffers with only pavement markings)

Hatching: 4" lines every 10' to 40' at an angle of 30 to 45 degrees

Tubular markers in buffer space are one option for a physical barrier. Other options include planters, bollards, or a raised curb.



Bike lanes protected by on-street parking



No Parking Signage
Source: Seattle DOT

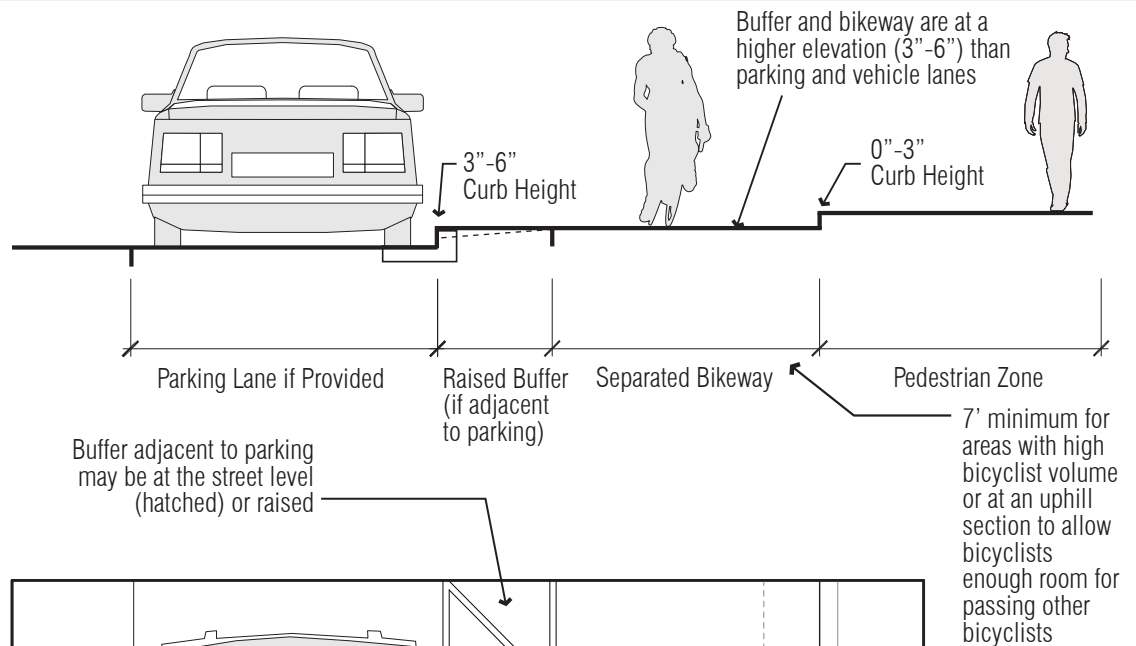
Notes:

1. It is recommended to provide a wider Bicycle Zone to include a buffer between the Bicycle and Vehicle Zones or between the Bicycle and Parking Zones (Class IV Protected Bike Lane).
2. Source: National Association of City Transportation Officials, 2012 Second Edition, *Urban Bikeway Design Guide*, pages 45 to 47.
3. The above design guideline is a recommendation for complete streets implementation and does not supersede a jurisdiction's existing standards.
4. Refer to Illustrative Section for zone widths.

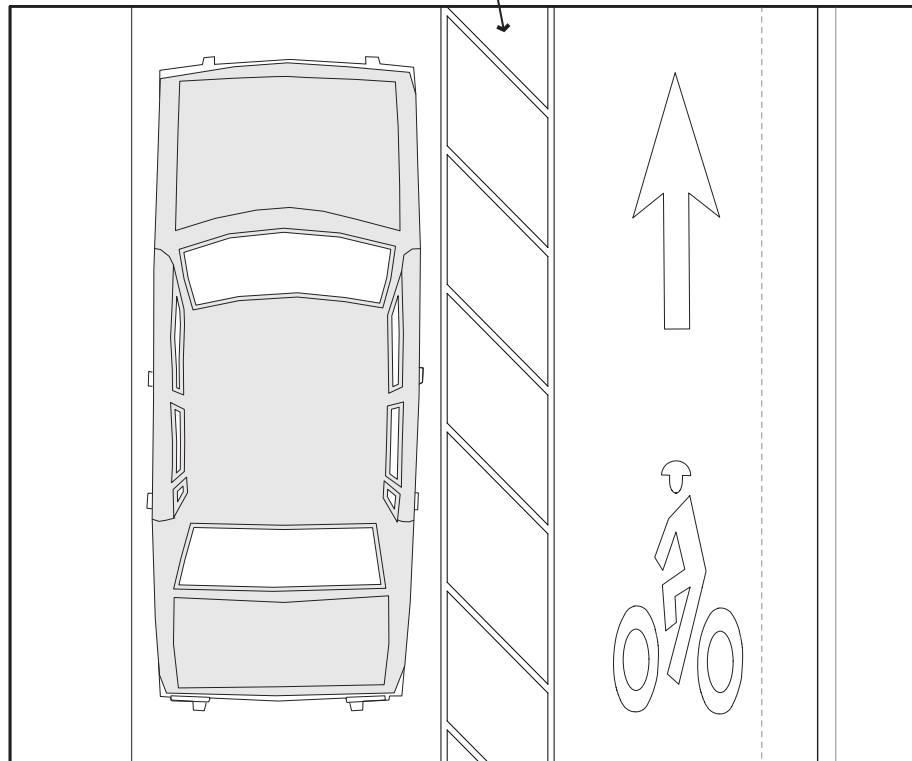
DESIGN GUIDELINE

Class IV Protected Bike Lane: Raised

Class IV Protected Bike Lanes provide exclusive use of bicycles, including separation in the form of physical barriers or grade separation, between the bicycle lane and vehicle lane.



Class IV Protected Bike Lane pavement marking



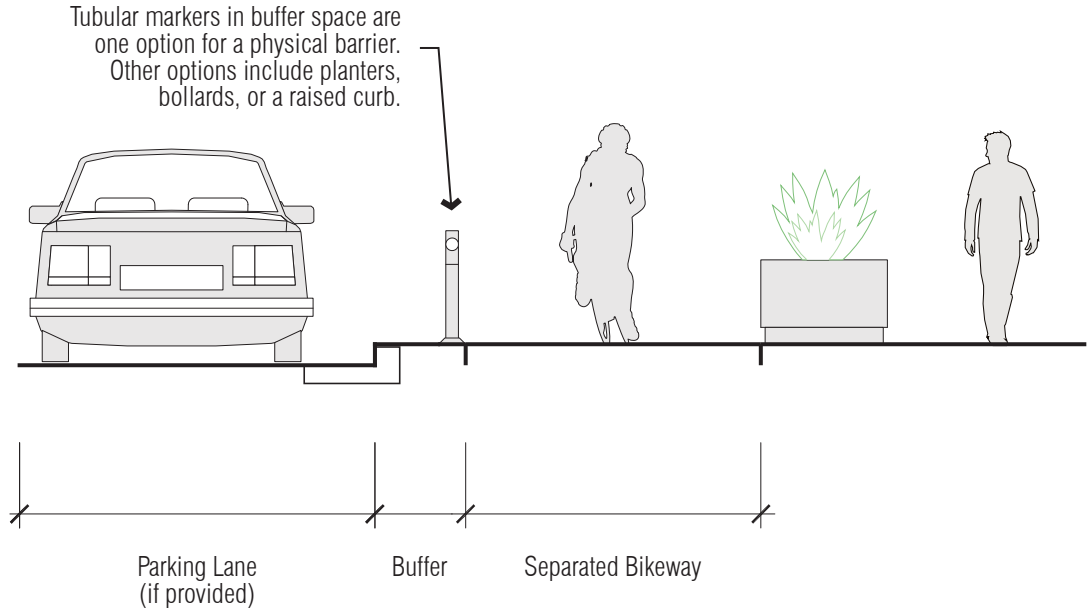
Notes:

1. The raised cycle track may be at the same level as the sidewalk (typically 6") or it may be at an intermediate level (3").
2. If configured at a height flush with the sidewalk, then the cycle track should be separated and distinguished from the Pedestrian Zone through the use of pavement markings; different surface materials, textures or colors; landscaping; and/or furnishings in order to discourage pedestrian incursion into the Bicycle Zone.
3. All drainage should slope to the street. Drainage inlets should be in the adjacent travel or parking lane.
4. Mountable curb may be used if a need is foreseen for cyclists to transition from roadway to cycle track. If used, the mountable curb should have 4:1 slope with no seams or lips that might cause cyclists to fall when traversing the curb. This curb is not considered a rideable surface when determining cycle track width.
5. Sources: California Department of Transportation, December 2015, "Class IV Bikeway Guidance: Separate Bikeways/Cycle Tracks," Design Information Bulletin Number 89, pages 2 to 6; National Association of City Transportation Officials, 2012 Second Edition, *Urban Bikeway Design Guide*, pages 53 to 60; Federal Highway Administration, *Separated Bike Lane Planning And Design Guide*, May 2015.
6. The above design guideline is a recommendation for complete streets implementation and does not supersede a jurisdiction's existing standards.
7. Refer to Illustrative Section for zone widths.

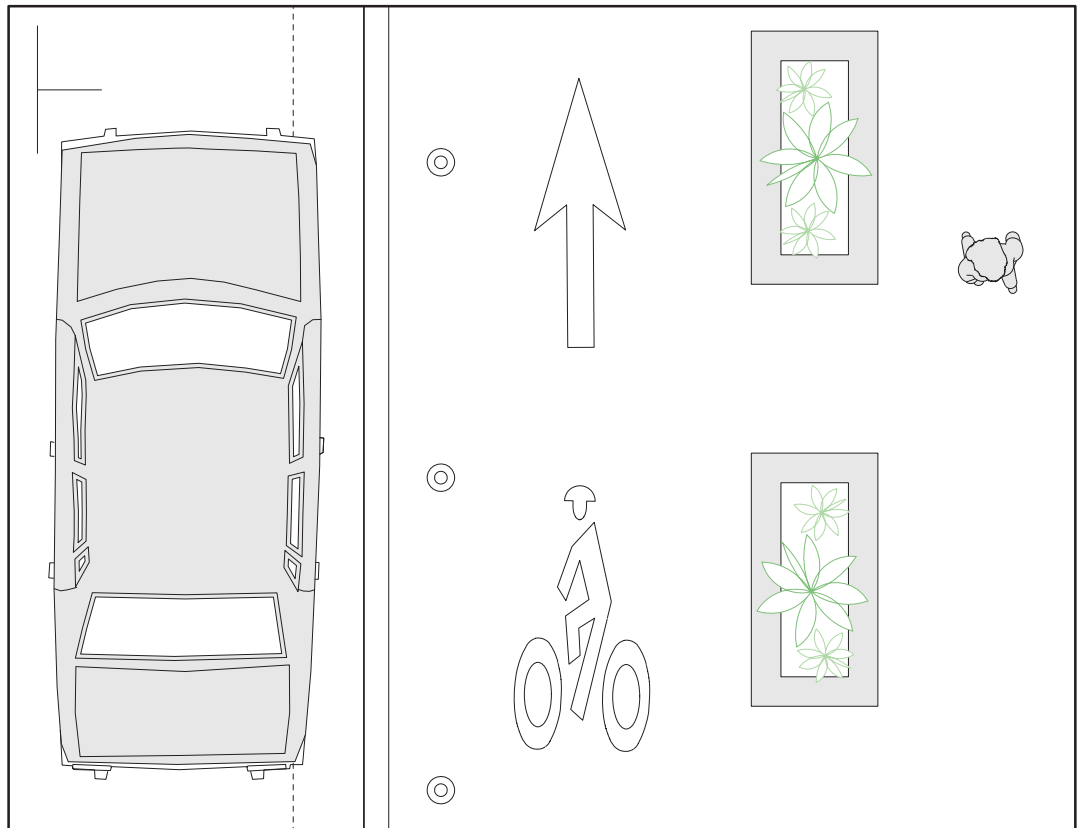
DESIGN GUIDELINE

Class IV Protected Bike Lane: Off-Street

Class IV Protected Bike Lanes provide exclusive use of bicycles, including separation in the form of physical barriers or grade separation, between the bicycle lane and vehicle lane.



Class IV Protected Bike Lane adjacent to on-street parking



Notes:

1. It is recommended to provide a wider Bicycle Zone to include a buffer between the Bicycle and Vehicle Zones or between the Bicycle and Parking Zones (Class IV Protected Bike Lane).
2. National Association of City Transportation Officials, 2012 Second Edition, *Urban Bikeway Design Guide*, pages 45 to 47.
3. The above design guideline is a recommendation for complete streets implementation and does not supersede a jurisdiction's existing standards.
4. Refer to Street Type Illustrative Sections in Chapter 2 for zone widths.

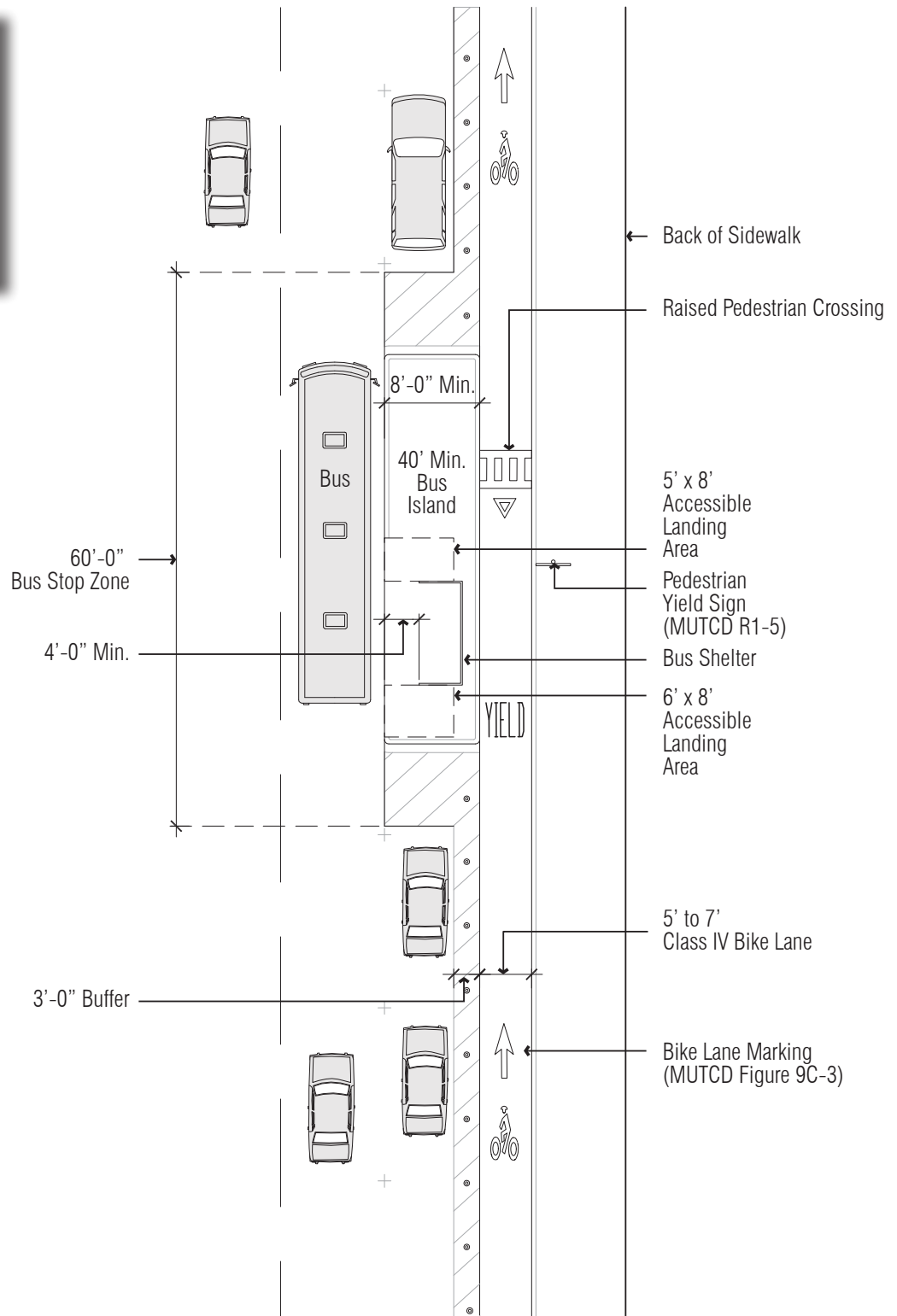
DESIGN GUIDELINE

Class IV Protected Bike Lane: With Island Bus Platform

In-lane bus stops minimize bus delays caused from weaving with bikes and from waiting for a gap to pull back into traffic. Bus loading islands also increase comfort and reduce sideswipe collision risks for cyclists by eliminating the need to pass stopped buses.



Bus platform with bike lane adjacent to sidewalk
Source: NACTO.org



Notes:

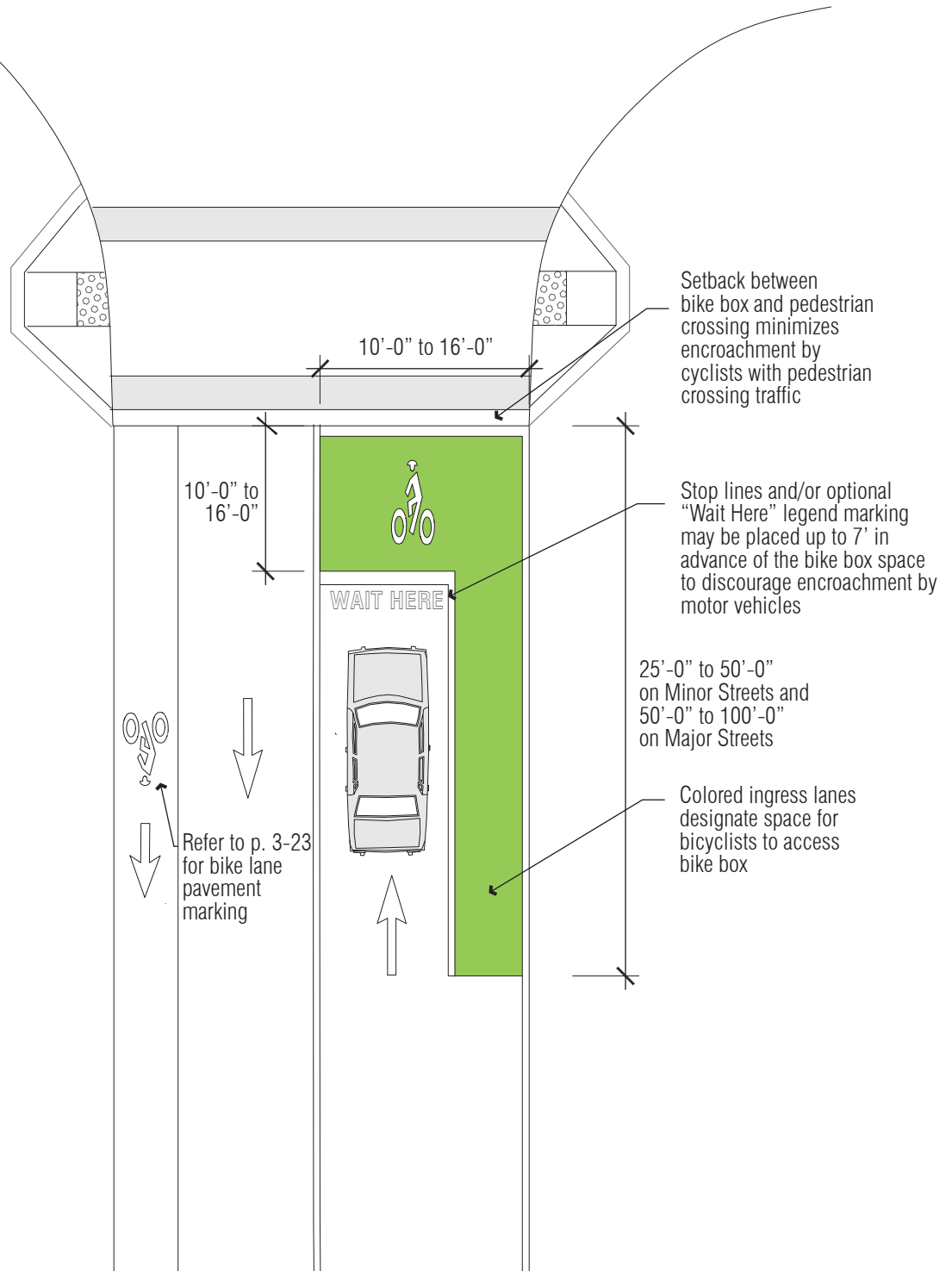
1. It is recommended to provide a wider Bicycle Zone to include a buffer between the Bicycle and Vehicle Zones or between the Bicycle and Parking Zones (Class IV Protected Bike Lane).
2. Source: National Association of City Transportation Officials, 2012 Second Edition, *Urban Bikeway Design Guide*, pages 45 to 47.
3. The above design guideline is a recommendation for complete streets implementation and does not supersede a jurisdiction's existing standards.
4. Raised pedestrian crossing eliminates need for curb cuts and forces cyclists to slow before crossing where pedestrians have right of way.

DESIGN GUIDELINE
Bike Box

Bike boxes provide space for cyclists to queue where there are visible, reducing right-hook collision risks. Bike boxes also can reduce delays to right-turning vehicles by encouraging bikes to wait in a location that does not block turning movements.



Bike box pavement markings

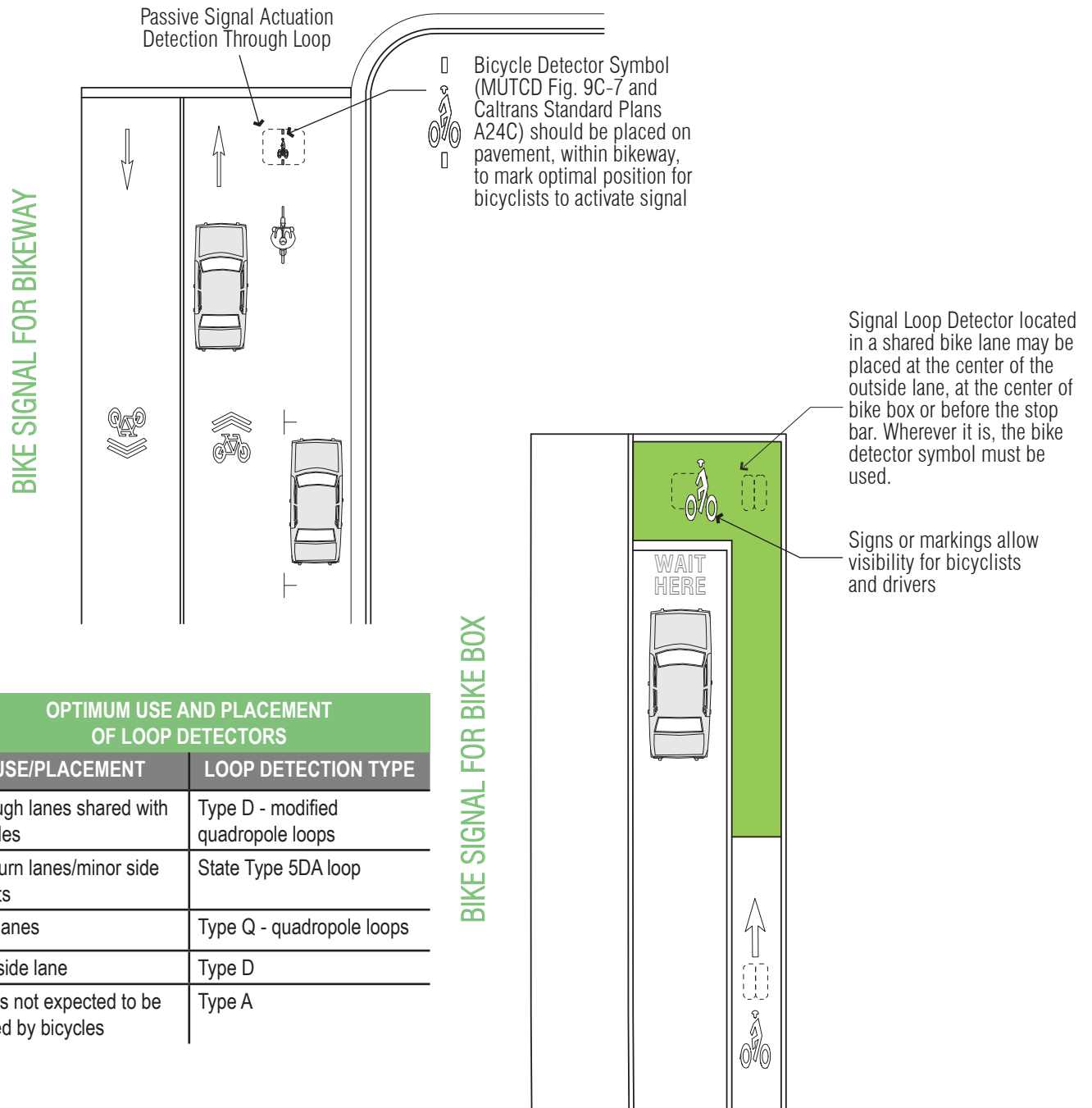


Notes:

1. Bike boxes should have colored pavement and be formed by transverse lines to provide space for queuing bicyclists at signalized intersection.
2. Deeper bike boxes minimize encroachment by vehicles.
3. It is recommended to provide bike boxes in an urban land use typology.
4. Source: National Association of City Transportation Officials, 2012 Second Edition, *Urban Bikeway Design Guide*, pages 71 to 73.
5. The above design guideline is a recommendation for complete streets implementation and does not supersede a jurisdiction's existing standards.

DESIGN GUIDELINE

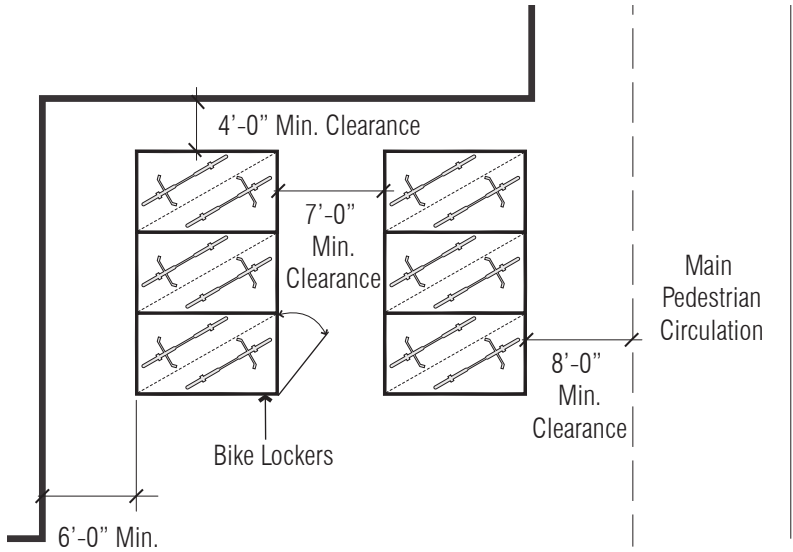
Bike Detection at Actuated Traffic Signals



OPTIMUM USE AND PLACEMENT OF LOOP DETECTORS	
USE/PLACEMENT	LOOP DETECTION TYPE
Through lanes shared with bicycles	Type D - modified quadropole loops
Left-turn lanes/minor side streets	State Type 5DA loop
Bike lanes	Type Q - quadropole loops
Curbside lane	Type D
Roads not expected to be shared by bicycles	Type A

- Notes:
1. Per CVC 21450.5, all new and retrofitted traffic signals must detect bicycles on all approaches and movements or be placed on permanent recall or fixed time operation.
 2. Detection at actuated traffic signals provides bicyclists the ability to trigger a traffic signal, rather than activating a pedestrian push button or illegally crossing a red light.
 3. Bicycle detection can be provided with bicycle-sensitive loop detectors or video detection that prompt traffic signals to change. A bicycle detector symbol must be painted on the roadway to show bicyclists where they should be located to trigger the detection.
 4. Source: National Association of City Transportation Officials, 2012 Second Edition, *Urban Bikeway Design Guide*, pages 163 to 171; CA MUTCD and 4D.105 (CA) and Figure 4D-111 (CA); Santa Clara Valley Transportation Authority Bicycle Technical Guidelines, 2012.
 5. The above design guideline is a recommendation for complete streets implementation and does not supersede a jurisdiction's existing standards.

DESIGN GUIDELINE
Bike Racks and Lockers



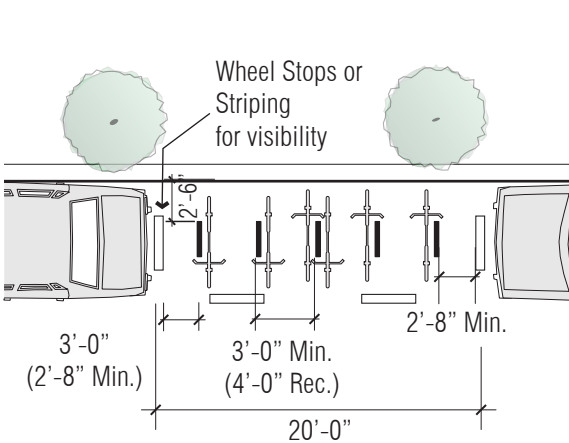
BIKE LOCKERS



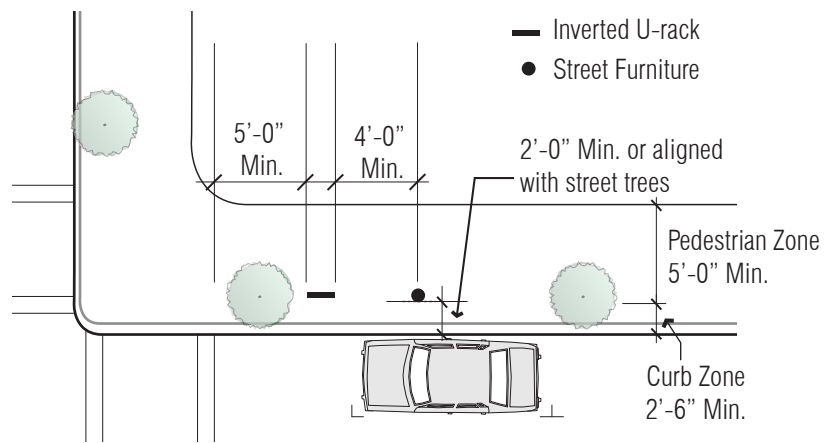
Bike lockers



Examples of bike corrals



BIKE CORRAL



BIKE RACK SPACING RECOMMENDATIONS

Notes:

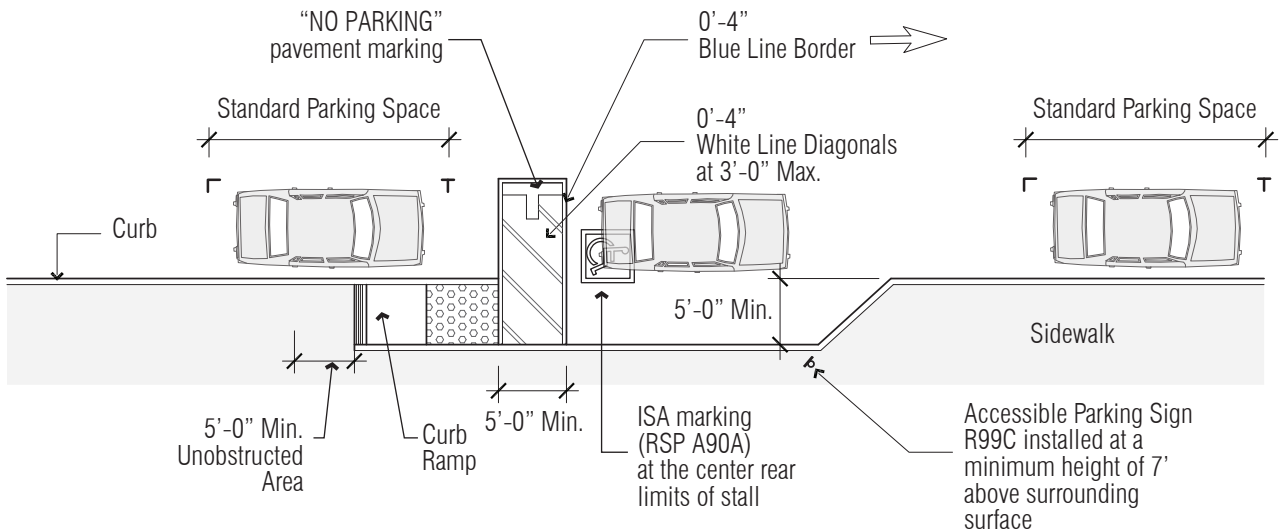
1. The above design guideline is a recommendation for complete streets implementation and does not supersede a jurisdiction's existing standards.



PARKING ZONE

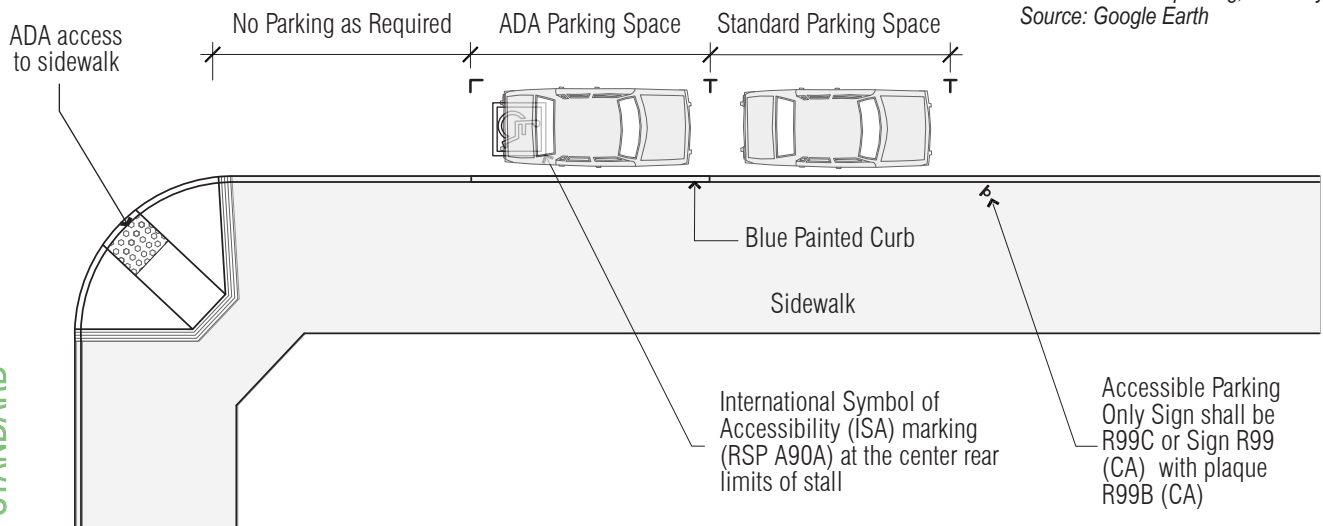
DESIGN GUIDELINE
On-Street Parallel Parking

RECOMMENDED



Parallel on-street parking, Berkeley, CA
Source: Google Earth

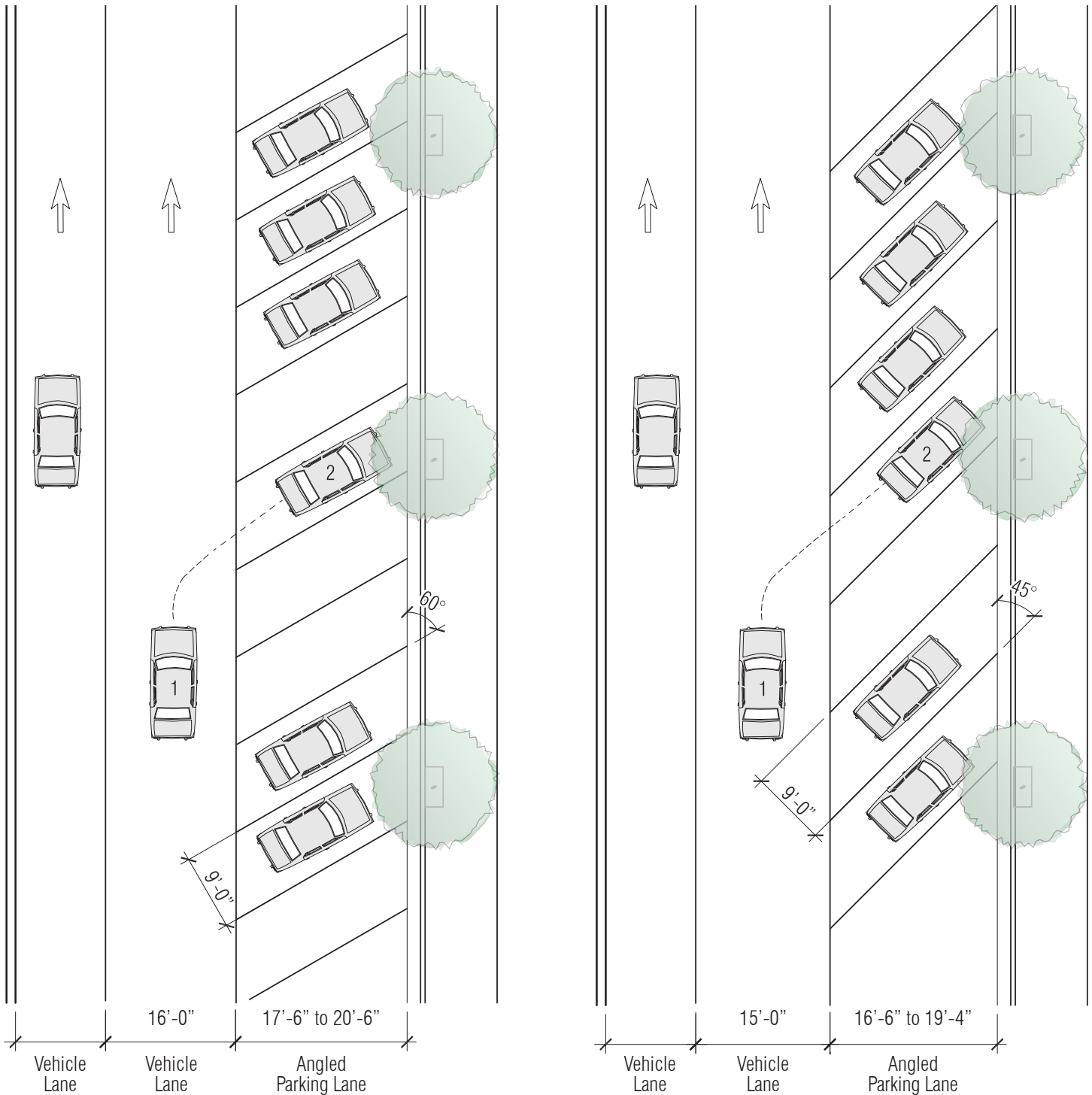
STANDARD



Notes:

1. Accommodate on-street parallel or diagonal parking to allow pedestrians convenient access to the adjacent Pedestrian Zone.
2. Preferred approach, but with limited sidewalk width and drainage constraints. Standard approach is acceptable near corners.
3. Source: State of California Department of Transportation, Accessible Parking On-Street, "Revised Standard Plan RSP A90B," http://www.dot.ca.gov/hq/esc/oe/project_plans/Errata/Errata-2006/2006_StdPln_Errata_No_10/rspa90b.pdf, accessed July 22, 2016.
4. The above design guideline is a recommendation for complete streets implementation and does not supersede a jurisdiction's existing standards.

DESIGN GUIDELINE
On-Street Angled Parking



Notes:

1. Accommodate on-street parallel or diagonal parking to allow pedestrians convenient access to the adjacent Pedestrian Zone.
2. Sources: Federal Highway Administration (FHA), 2006, *FHA University Course on Bicycle and Pedestrian Transportation*, "Figure 15-7. Illustration. Changing from diagonal to parallel parking on a two-way street," <http://www.fhwa.dot.gov/publications/research/safety/pedbike/05085/chapt15.cfm>, accessed August 3, 2016; Gibbens, Michael P., *The CalDAG- California Disabled Accessibility Guidebook*, 2008, "General Requirements Parking," page 151.
3. The above design guideline is a recommendation for complete streets implementation and does not supersede a jurisdiction's existing standards.
4. Refer to Illustrative Section for vehicle lane widths.

VEHICLE ZONE



DESIGN GUIDELINE

Travel Lane Widths: By Modal Priority and Posted Speed Limit

RECOMMENDED TRAVEL LANE WIDTHS (feet) FOR ARTERIAL AND COLLECTOR STREETS Auto, Transit, or Truck Modal Priorities ^[1]			
POSTED SPEED LIMIT	25 mph	30 to 35 mph	> 40 mph
With Bike Lanes (Class II or Class IV Separated Bikeways)			
Curb Lane ^[2,3]	10 (auto priority) 12 (transit or truck priority)	10 to 11 (auto priority) 12 (transit or truck priority)	12 ^[6]
Other Travel Lanes (if more than one lane per direction)	10	10 to 11 (auto priority) 11 (transit or truck priority)	11
Without Bike Lanes (includes Class III Bikeway)			
Curb Lane ^[3, 4]	10 (auto priority) 12 (transit or truck priority)	15 ^[5]	12 ^[7]
Other Travel Lanes (if more than one lane per direction)	10	10 to 11 (auto priority) 11 (transit or truck priority)	11

RECOMMENDED TRAVEL LANE WIDTHS (feet) FOR ARTERIAL AND COLLECTOR STREETS Bicycle or Pedestrian Modal Priorities			
POSTED SPEED LIMIT	25 mph	30 to 35 mph	> 40 mph
With Bike Lanes (Class II or Class IV Separated Bikeways)			
All Travel Lanes	10	10	N/A ^[9]
Without Bike Lanes (includes Class III Bikeway)			
Curb Lane	10	10 to 15 ^[8]	N/A ^[9]
Other Travel Lanes (if more than one lane per direction)	10	10 to 11	N/A ^[9]

Notes:

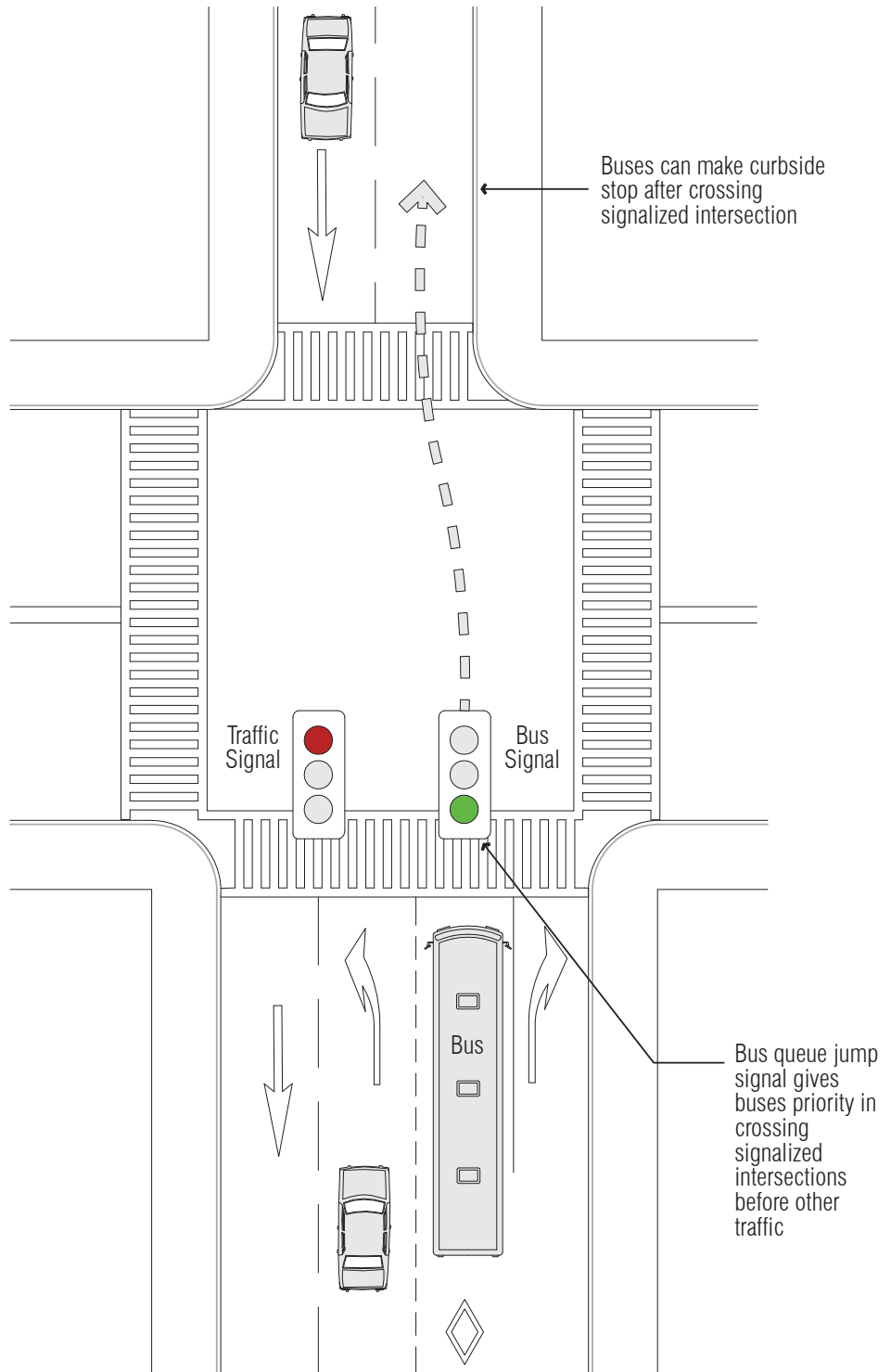
- For transit and truck priority streets, the curb lane should be wider to account for larger vehicles, including mirrors.
- The suggested lane widths apply when the curb lane is a bus-only lane or queue jump.
- The suggested lane widths do not apply to Bus Rapid Transit (BRT), which may operate in either the inside or outside travel lane. Design parameters for BRT should account for faster bus speeds and greater passenger activity (boardings and alightings).
- Where the curb lane is a bus-only lane and the posted speed limit is 30 mph or less, the curb lane can be designated a shared bus/bike lane.
- If there is no Bicycle Zone and posted speed limits are 30 mph or greater, a wide curb lane may accommodate the passing of bicyclists within the lane.
- On streets with posted speed limits of 40 mph or greater, it is recommended to provide a buffer between the curb lane and bike lane. The 12' width assumes that there is also a minimum 2' buffer adjacent to the bike lane or that the bike facility is a Class IV Bikeway. See also table on page 3-19 on Bike Lane widths.
- Where posted speed limits are 40 mph or greater, a shared auto/bike lane is not recommended. Instead, any on-street bike accommodations should be either a Class II or Class IV Bike Lane.
- If there is no bicycle zone and posted speed limits are 30 to 35 mph, a wider curb lane may be used to accommodate the passing of bicyclists within the lane.
- Posted speed limits of 40 mph or greater are not recommended for pedestrian or bicycle priority streets.
- The lane widths indicated do not include the width of the gutter pan; the width of the curb lane is measured from the seam of the gutter pan and the paved roadway. Gutter pan widths typically vary from 12" to 24".
- If on-street parking is permitted, typically 7' to 8' is provided for a parallel parking lane. The width of the parking lane can include the width of the gutter pan (i.e., the parking lane width is measured from the curb face).
- Sources: American Association of State Highway and Transportation Officials (AASHTO), Chapter 4.3, *Green Book*; National Association of City Transportation Officials, *Urban Street Design Guide*; Caltrans, *Highway Design Manual*.

DESIGN GUIDELINE

Bus Facilities: Dedicated Bus-Only Lanes and Signal Priority



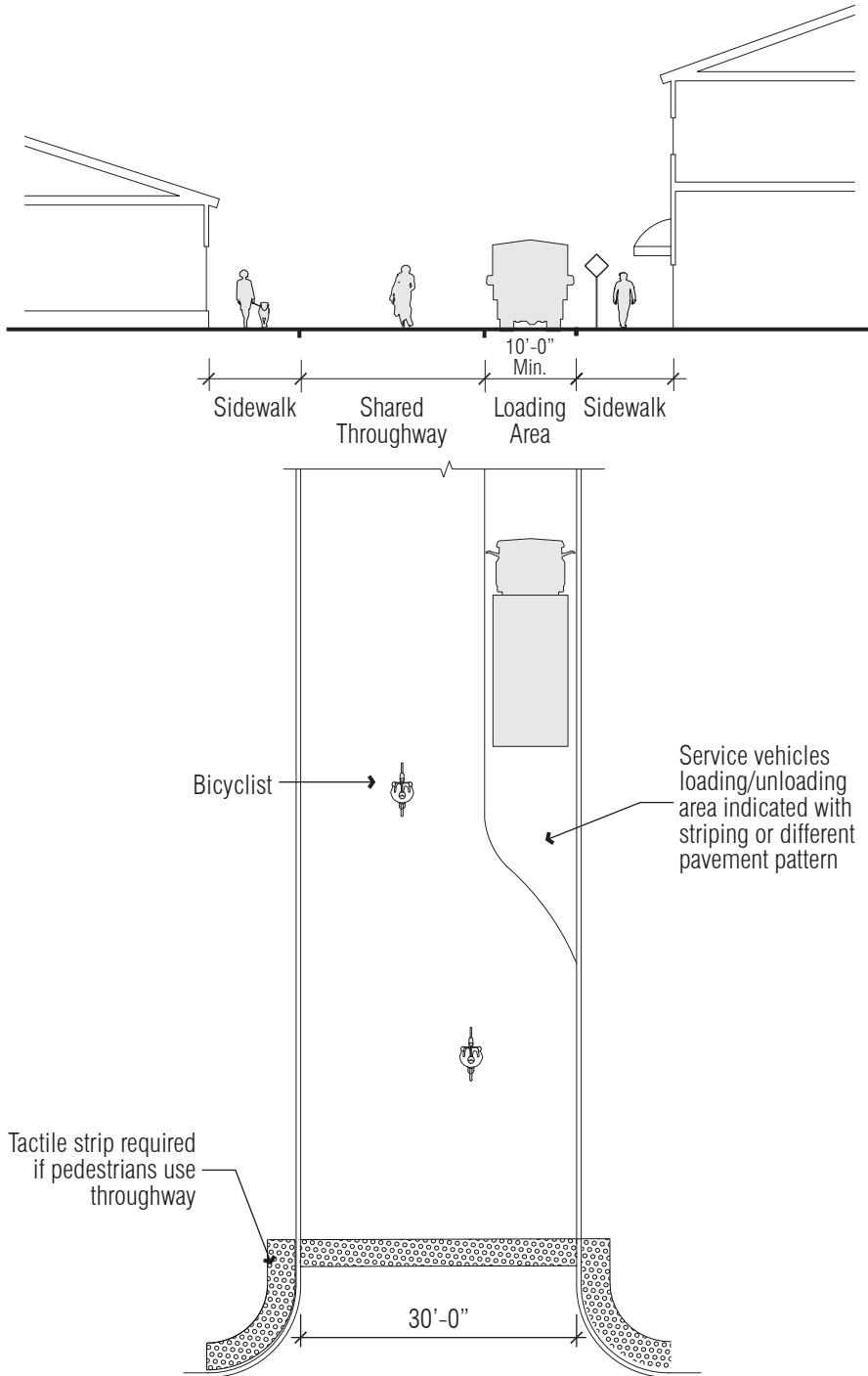
Dedicated bus lane



Notes:

1. Sources: National Association of City Transportation Officials, http://nacto.org/docs/usdg/effective_bus_only_lanes_kiesling.pdf, accessed August 3, 2016; Manual on Uniform Traffic Control Devices (MUTCD), 2009 Edition, "Part 3 Figure 3D-3. Markings for Contiguous Preferential Lanes," http://mutcd.fhwa.dot.gov/hm/2009/part3/fig3d_03_longdesc.htm, accessed August 3, 2016.
2. The above design guideline is a recommendation for complete streets implementation and does not supersede a jurisdiction's existing standards.

DESIGN GUIDELINE
Shared Streets



Shared throughway at Bell Street in Seattle, WA showing unloading/loading area for service vehicles



Shared throughway at Bell Street in Seattle, WA



Example of at-grade crossing at shared street intersection, in Seattle, WA

Notes:

1. Consider implementing shared streets with slow vehicle and bicycle traffic.
2. Service Parking areas allow service vehicles and should be indicated with different paving or striping.
3. Source: National Association of City Transportation Officials (NACTO), 2012 Second Edition, *Urban Street Design Guide*, pages 28 to 29; NACTO, "Commercial Shared Street," *Urban Street Design Guide*, <http://nacto.org/publication/urban-street-design-guide/streets/commercial-shared-street>, accessed August 3, 2016.
4. The above design guideline is a recommendation for complete streets implementation and does not supersede a jurisdiction's existing standards.

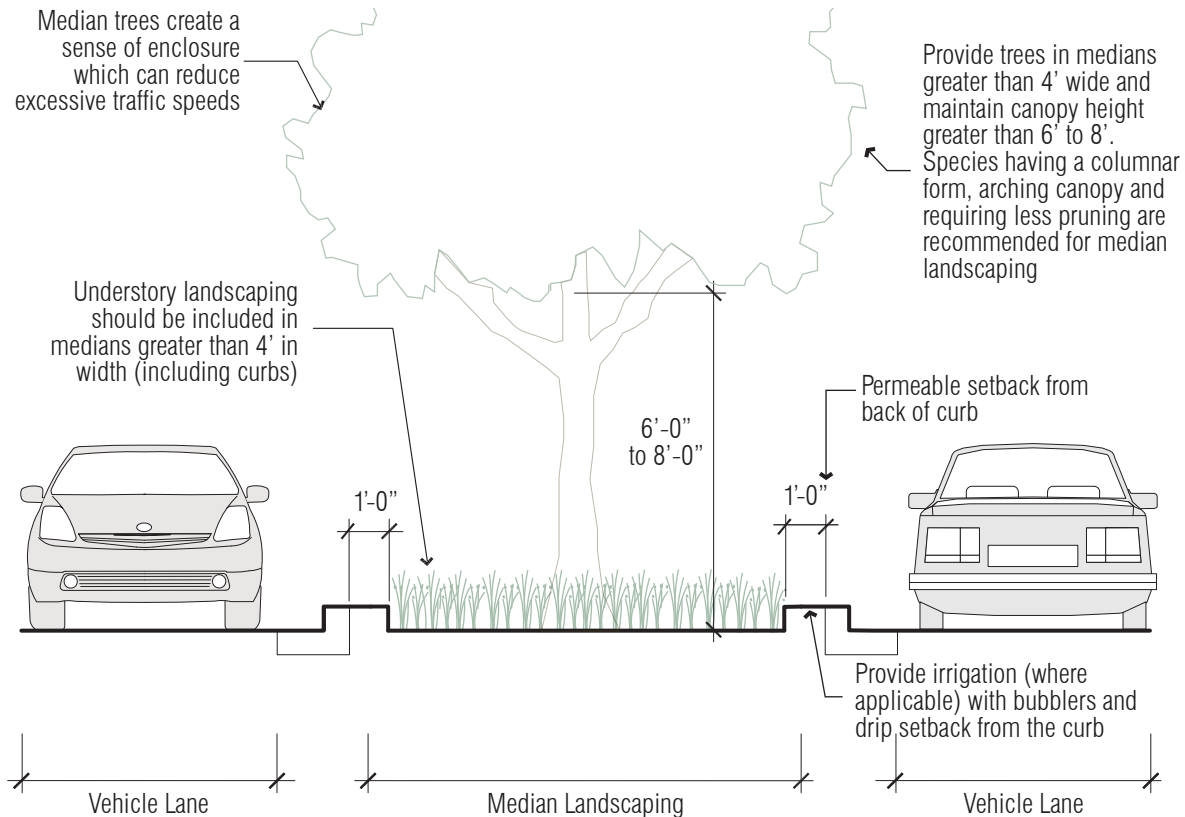


MEDIAN ZONE

DESIGN GUIDELINE

Median Landscaping

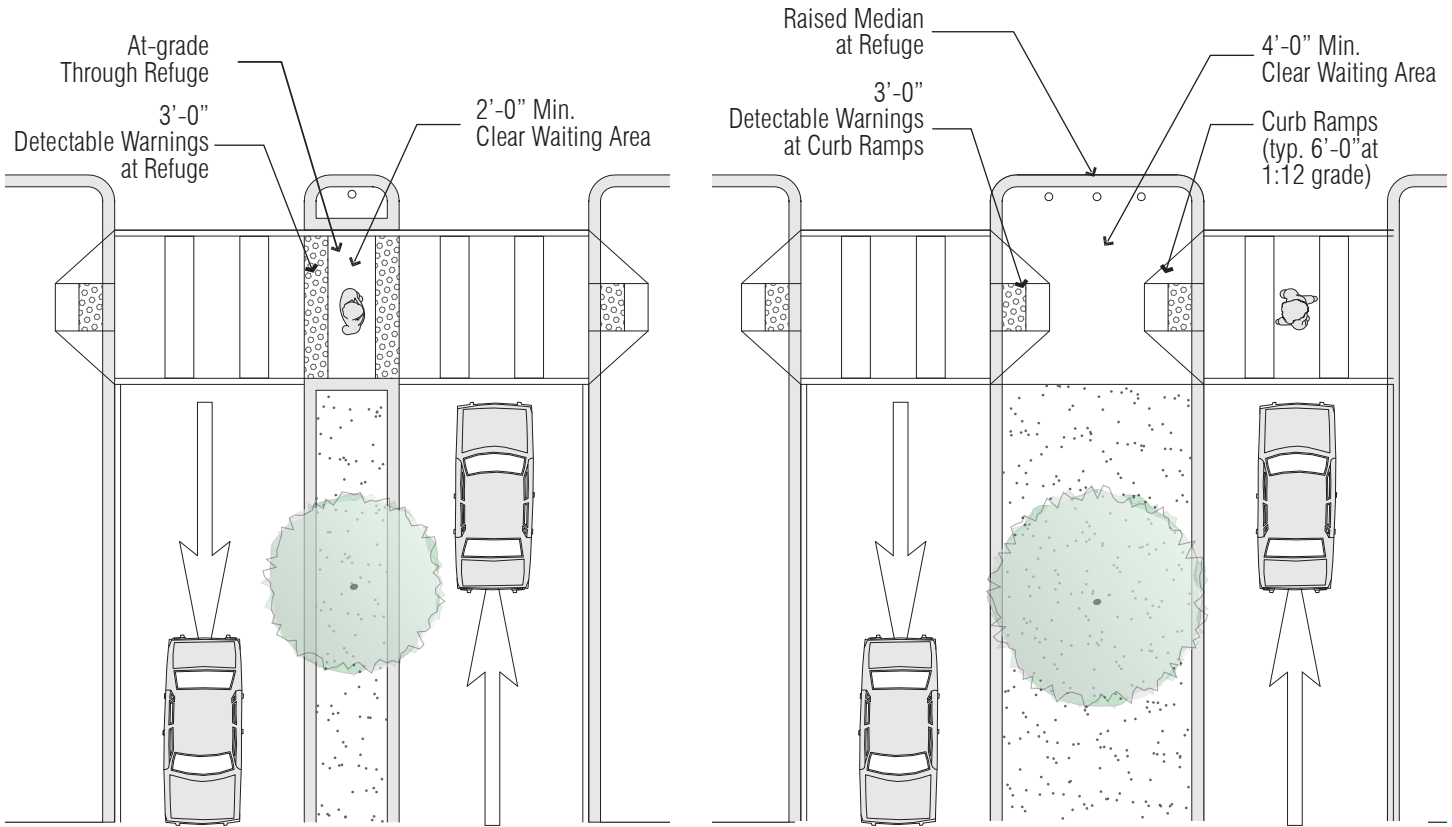
Per Water Efficiency Landscape Ordinance, no irrigation spray shall be used within 2 feet of impermeable surface.



Notes:

1. Trees should not be planted within 25' of an intersection.
2. Trees should be pruned to maintain 14' clearance from the lowest branch, within 50' of an intersection.
3. Spacing of trees may vary from 15' on center to 35' on center, depending on the expected size of the tree at maturity. Small trees (< 20' crown diameter) at 15' on center, medium size tree (20' to 35' crown diameter) at 25' on center, and tall trees (> 35' crown diameter) at 35' on center.
4. Consider incorporating landscaping standards, including green infrastructure/stormwater requirements, for vegetation in the median zone.
5. Source: City and County of San Francisco, 2011, Chapter 6.1: Urban Forest, *Better Streets Plan*, pages 165 to 167.
6. The above design guideline is a recommendation for complete streets implementation and does not supersede a jurisdiction's existing standards.

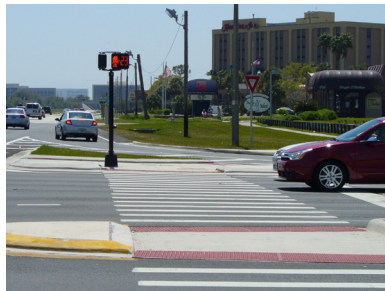
DESIGN GUIDELINE
Pedestrian Refuge Island



PEDESTRIAN REFUGE ISLAND
6'-0" TO 16'-0" WIDE

PEDESTRIAN REFUGE ISLAND
MORE THAN 16'-0" WIDE

Pedestrian refuge island with detectable warnings at intersection



Raised median at refuge with clear waiting area for pedestrians crossing the street

Notes:

1. Source: City and County of San Francisco, SF Better Streets, "Medians and Islands," <http://www.sfbetterstreets.org/find-project-types/pedestrian-safety-and-traffic-calming/traffic-calming-overview/medians-and-islands>, accessed August 3, 2016.
2. The above design guideline is a recommendation for complete streets implementation and does not supersede a jurisdiction's existing standards.
3. Median nose provides protection for pedestrians and forces motorists to take turns at slower speed.
4. Pedestrian refuge island width of 6 feet or greater is recommended to provide enough width for parents pushing strollers and cyclists walking bikes.

A photograph of a street intersection. In the foreground, there is a crosswalk with white stripes on a dark asphalt road. A green rectangular overlay box is positioned in the middle of the image, containing the text "CROSSING ZONE" in white, bold, sans-serif capital letters. In the background, a green bus is driving across the intersection, followed by several white cars. To the left, there is a Chevron gas station. In the distance, a large billboard for Universal Orlando's Islands of Adventure is visible, featuring the text "SWING HIGHER" and "UNIVERSAL ORLANDO". The sky is clear and blue.

CROSSING ZONE

DESIGN GUIDELINE Crosswalks

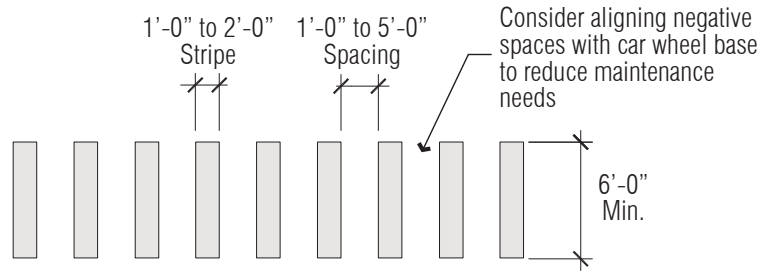
Higher visibility crosswalks improve yielding compliance because the crosswalk is better aligned with a motorist's eye height.



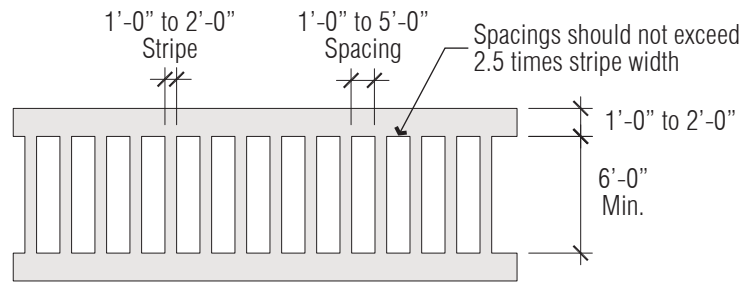
Continental marked crosswalk



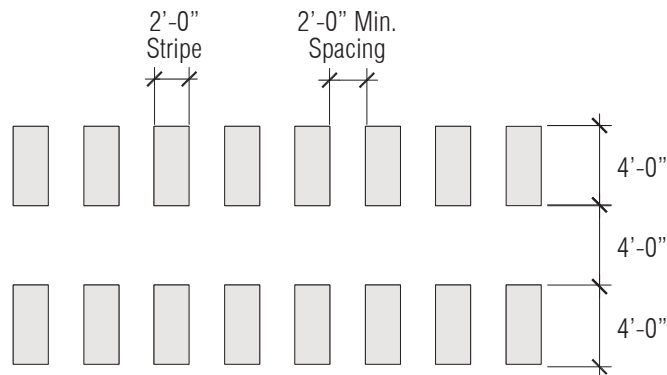
Marked crosswalk using different pavement materials



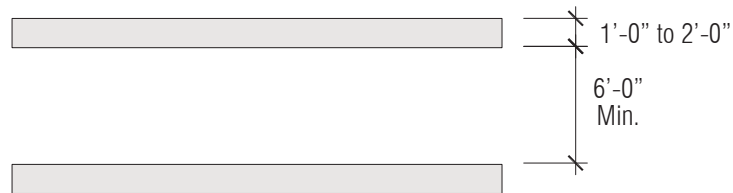
CONTINENTAL MARKED CROSSWALK



LADDER MARKED CROSSWALK



TRIPLE-FOUR MARKED CROSSWALK

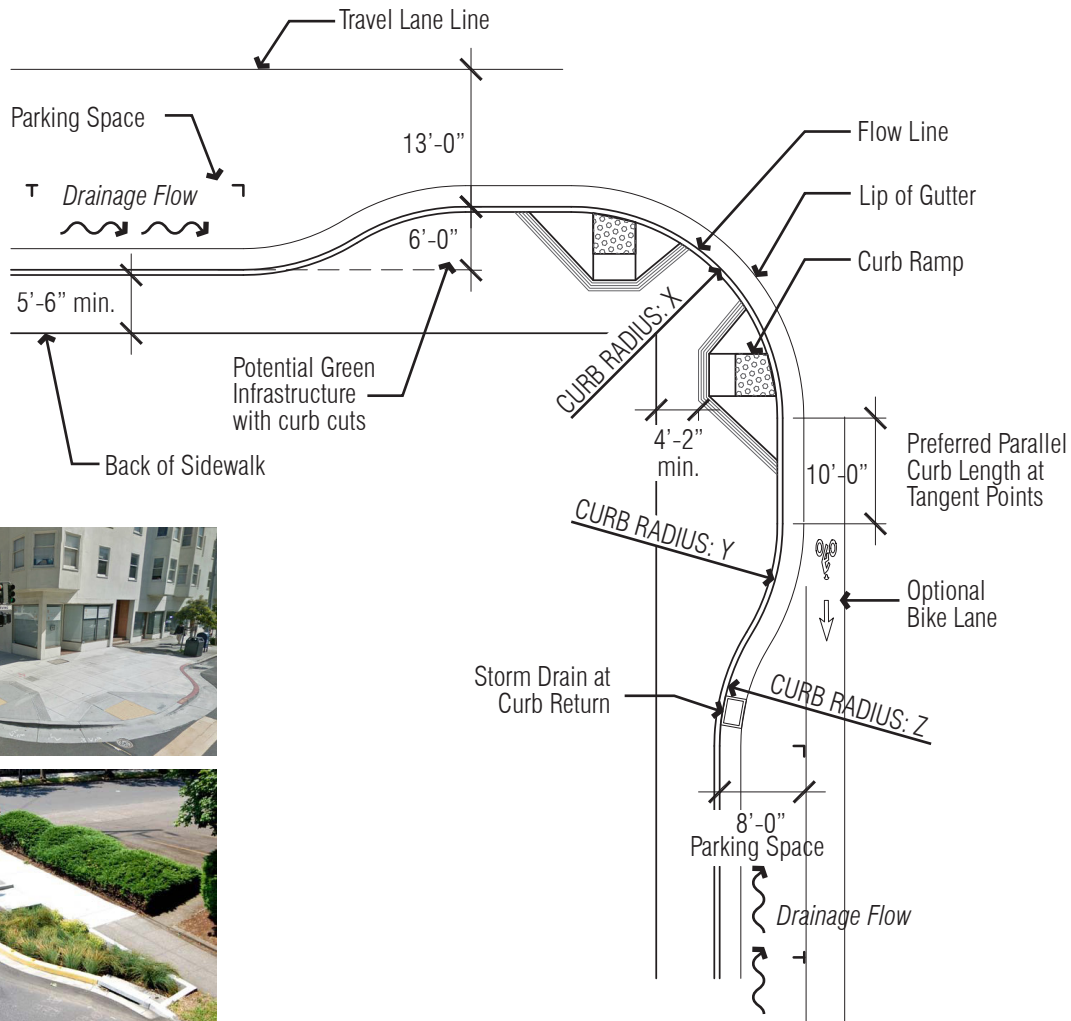


STANDARD MARKED CROSSWALK

Notes:

1. Source: State of California Department of Transportation, 2012, Pavement Markings Crosswalks, Revised Standard Plan RSP A24F, <http://www.fhwa.dot.gov/publications/research/safety/04100/04100.pdf>, accessed July 29, 2016.
2. The unstriped portion of a Triple-Four Marked Crosswalk should provide a space that is not a slipping risk when wet. Consider retroreflectivity, slipping or surface roughness, and application/material selection for durability.
3. The above design guideline is a recommendation for complete streets implementation and does not supersede a jurisdiction's existing standards.

DESIGN GUIDELINE Corner Treatment



Examples of bulb-outs

ARTERIAL AND COLLECTOR STREETS

MODAL PRIORITY	CURB RADIUS (feet)		
	X	Y	Z
AUTO	20	5	10
BICYCLE	12	5	10
PEDESTRIAN	10	10	10
TRANSIT	30	10	10
TRUCKS	30	10	10

LOCAL STREET

LAND USE TYPOLOGY	CURB RADIUS (feet)		
	X	Y	Z
URBAN	10	5	10
SUBURBAN	5	5	5
RURAL AND OPEN SPACE	12	5	5
INDUSTRIAL	20	5	10

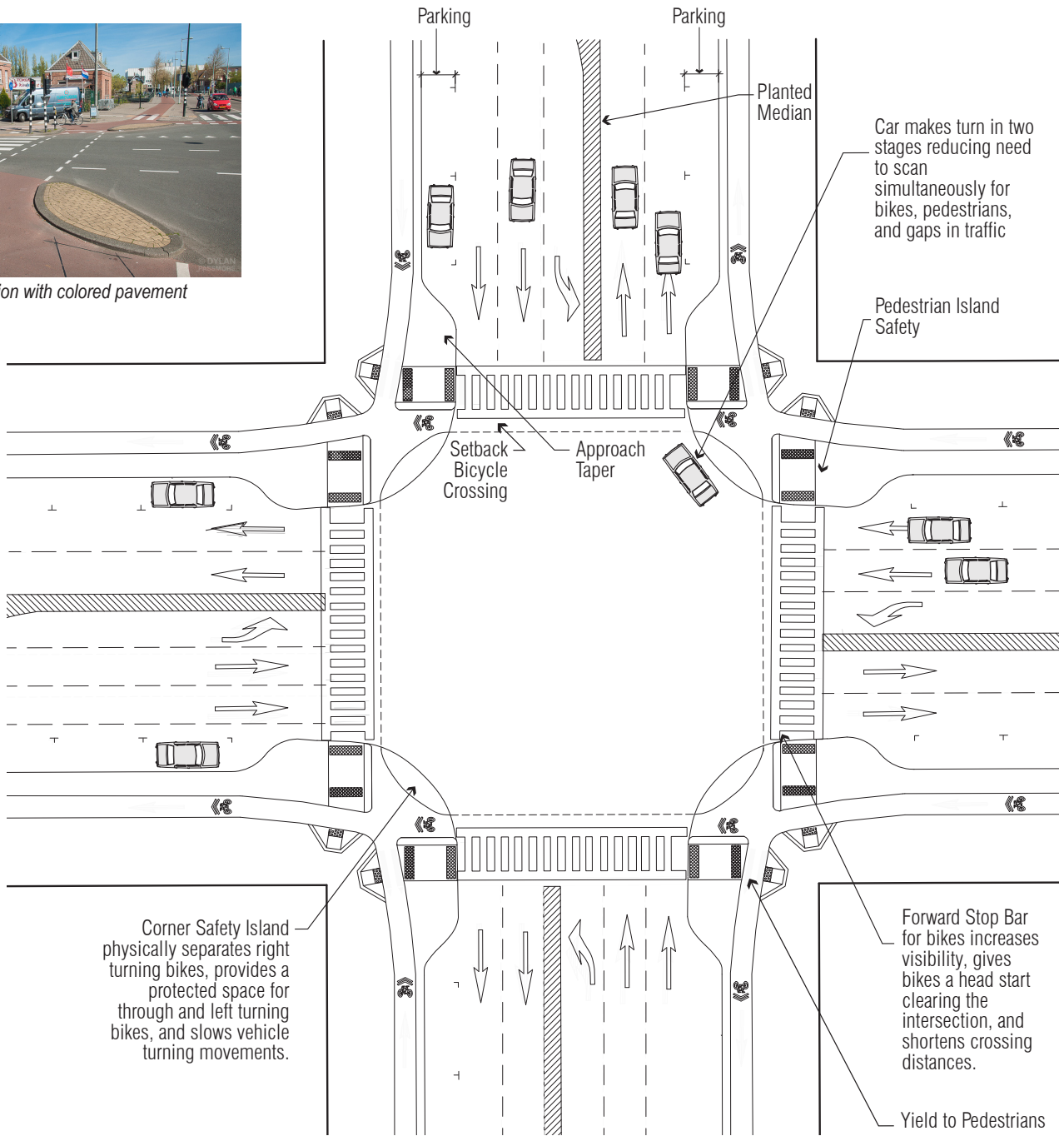
Notes:

1. The above design guideline is a recommendation for complete streets implementation and does not supersede a jurisdiction's existing standards.
2. Green infrastructure should be located to receive water. Curb radius should consider fire truck turning; radius must either allow trucks to stay off the sidewalk or the portion of the sidewalk where they encroach must be clear of obstructions.

DESIGN GUIDELINE
Protected Intersection



Protected intersection with colored pavement



Corner Safety Island physically separates right turning bikes, provides a protected space for through and left turning bikes, and slows vehicle turning movements.

Forward Stop Bar for bikes increases visibility, gives bikes a head start clearing the intersection, and shortens crossing distances.

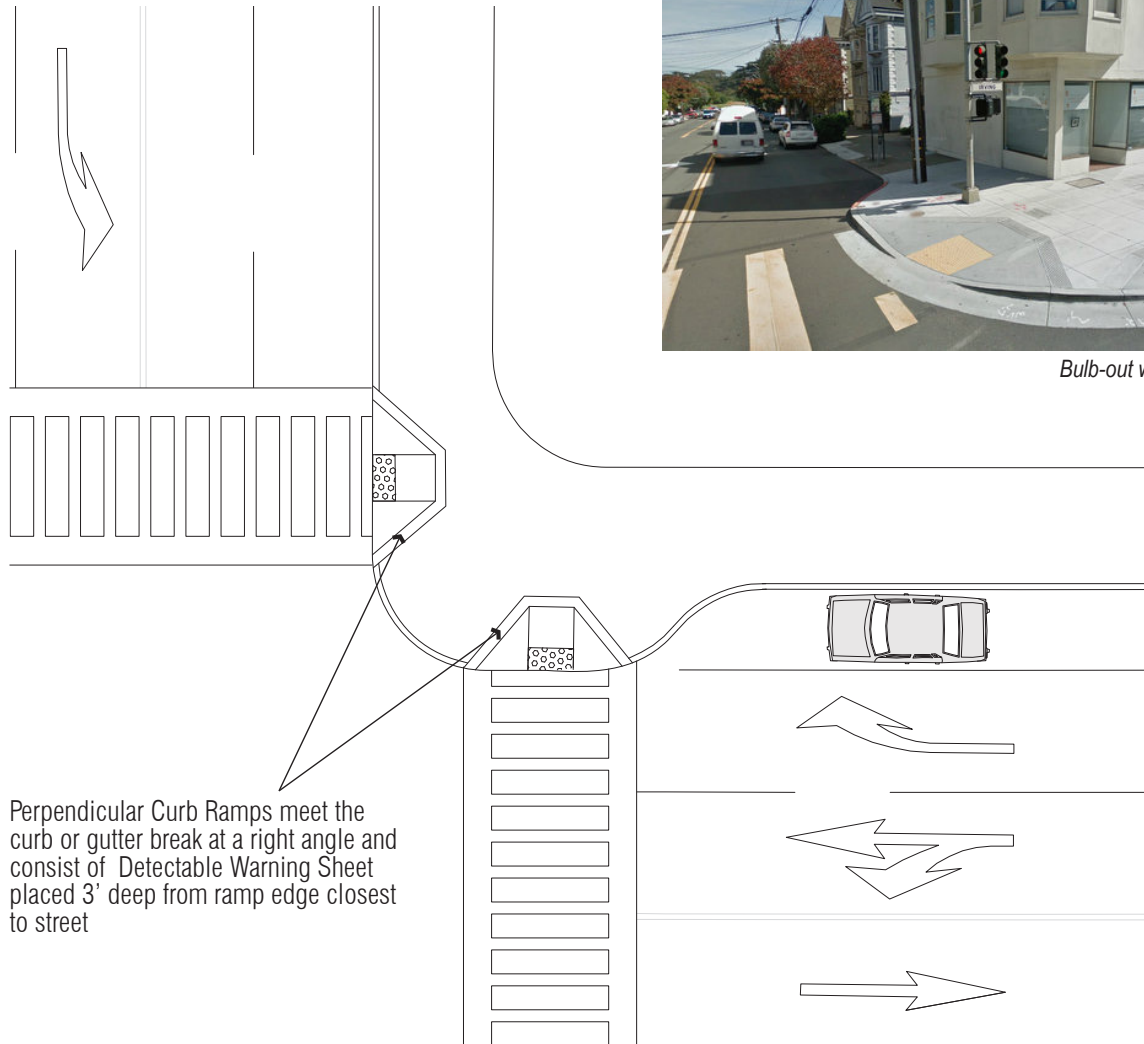
Yield to Pedestrians

Notes:

1. Source: California Department of Transportation, December 2015, "Class IV Bikeway Guidance: Separated Bikeways/Cycle Tracks," Design Information Bulletin Number 89, page 7.
2. The above design guideline is a recommendation for complete streets implementation and does not supersede a jurisdiction's existing standards.

DESIGN GUIDELINE

Crosswalk Dual Ramps

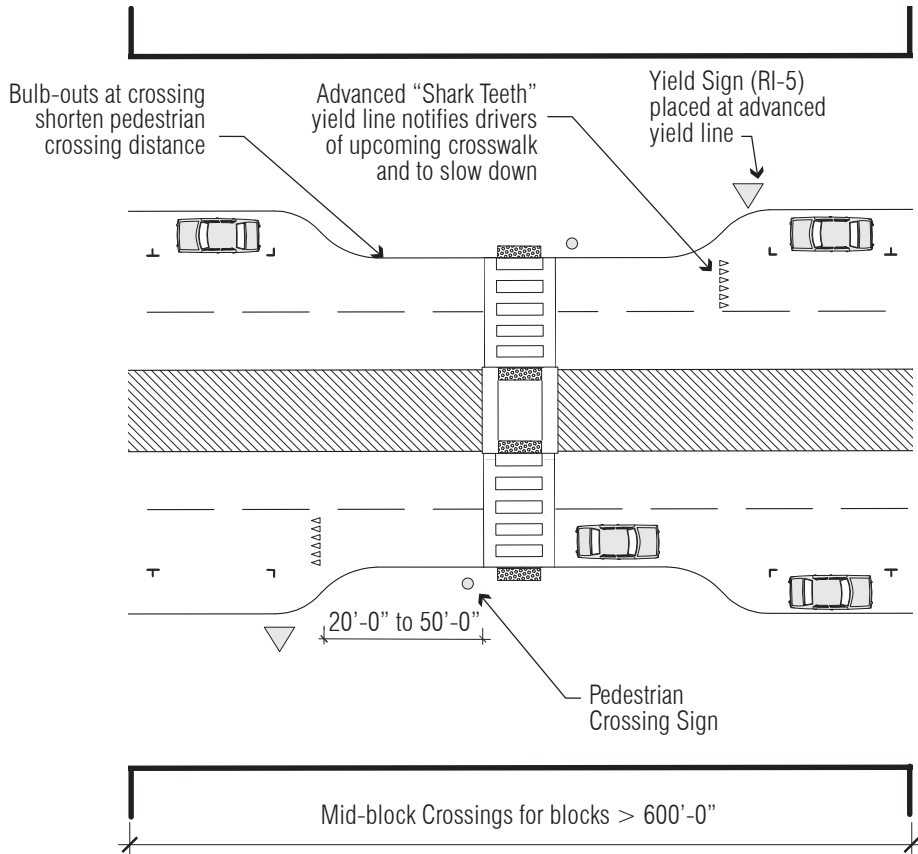


Bulb-out with crosswalk dual ramps
Source: SF Streets Blog

Notes:

1. Truncated domes in the detectable warning surface should be aligned in a square or radial pattern and comply with R304 of ADA guidelines. Surface tile is cast-in-place and has a thickness of 0.25", with standard sizes of 24"x36", 24"x48", 24"x60", 36"x48", and 36"x60". A typical 24"x36" tile has dome spacing of 1.67".
2. Detectable warning surfaces should contrast in color with the adjacent street or walkway surface to help pedestrians with mobility or vision impairments to locate the curb ramp from the other side of the street. The surface color could be either light-on-dark or vice versa, and may provide for full ramp surface except for the flared sides of the ramp.
3. Perpendicular ramps can be provided where sidewalk width is at least 12' wide and has minimum 4'-2" clear space on top of the ramp to allow adequate space for pedestrians to walk. If distance from the curb to sidewalk is limited, corner-type or diagonal curb ramp may be provided with a minimum of 4'-2" clear space at the end of the ramp located within the marked crosswalk, to ensure safety of pedestrians from vehicular traffic.
4. Source: City and County of San Francisco, *Better Streets Plan*, 2011, Chapter 5: Street Designs, pages 165 to 167; United States Access Board, <https://www.access-board.gov/guidelines-and-standards/streets-sidewalks/public-rights-of-way/proposed-rights-of-way-guidelines/chapter-r3-technical-requirements>, Accessed September 26, 2016; Americans with Disabilities Act Guidelines, <http://www.detectable-warning.com/guidelines.shtml>, Accessed September 26, 2016; California Department of Transportation, http://www.dot.ca.gov/hq/esc/oe/project_plans/highway_plans/2010-RSP-and-NSP/rspa88a.pdf, Accessed September 26, 2016.
5. The above design guideline is a recommendation for complete streets implementation and does not supersede a jurisdiction's existing standards.

DESIGN GUIDELINE
Mid-block Crossing



Advanced "shark teeth" yield line

OTHER TRAFFIC CONTROL DEVICES¹

	<p>Rectangular rapid flashing beacon (RRFB)</p>
	<p>In-roadway warning lights</p> <p>Source: FHWA DOT</p>
	<p>Pedestrian hybrid beacon (PHB)</p>

STANDARD WARNING SIGNS

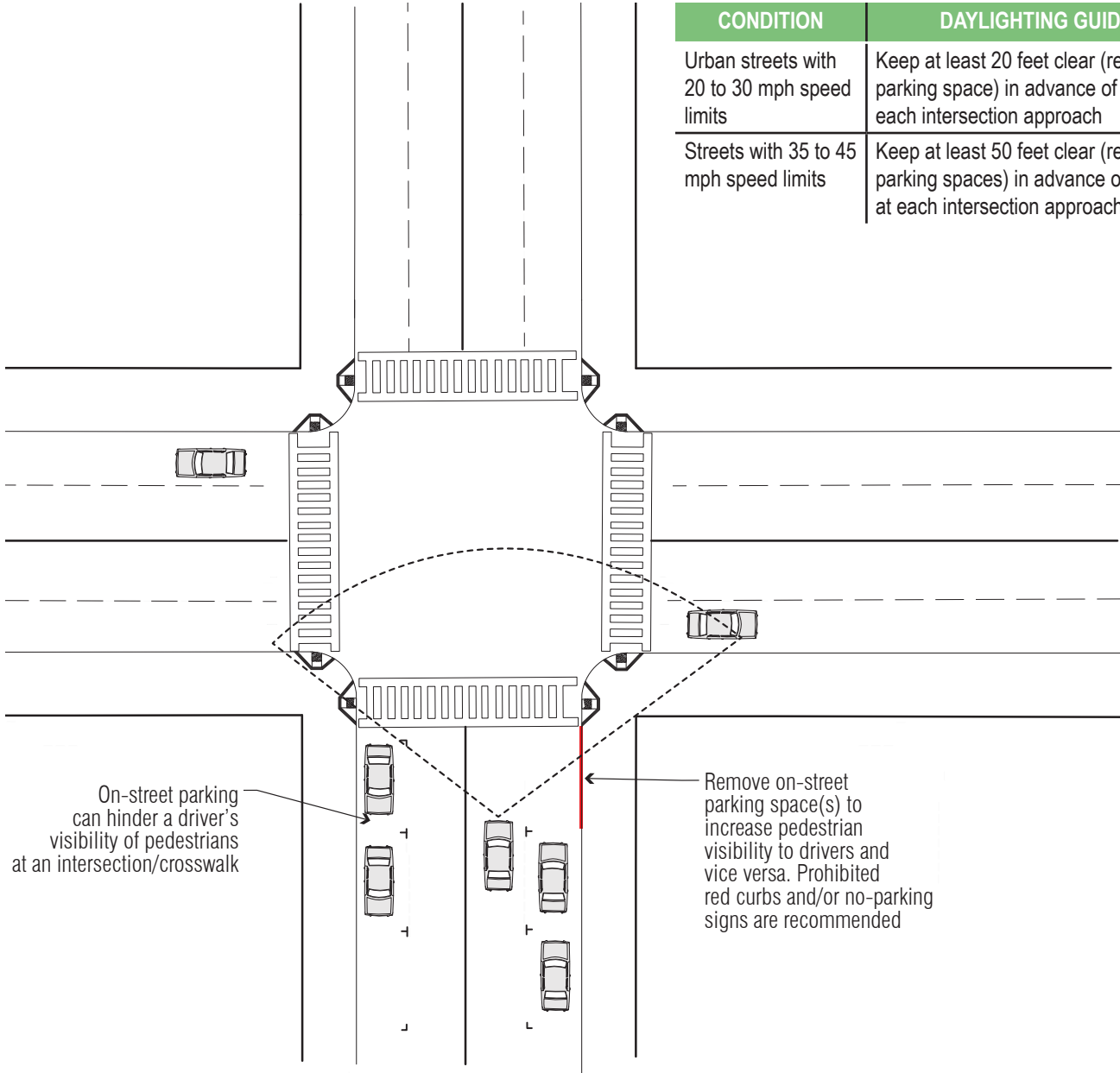
		<p>Source: Trafficsign.us</p>
<p>Place Pedestrian Crossing sign at mid-block crossing</p>	<p>Place Advance Pedestrian Crossing sign 100 feet in advance of intersection</p>	<p>Place R1-5 or R1-5a at YIELD line</p>

Notes:

1. Traffic control devices are mutually exclusive. Do not use traffic control devices with yield or stop signs.
2. On-street parking should be prohibited in area between yield lines and crosswalk.
3. Sources: CA MUTCD Section 4F Pedestrian Hybrid Beacons, Section 4N In-roadway lights; Federal Highway Administration (FHWA), Pedestrian Hybrid Beacon Guide - Recommendations and Case Study, http://safety.fhwa.dot.gov/ped_bike/tools_solve/fhwasa14014, accessed September 28, 2016; American Association of State Highway and Transportation Officials (AASHTO), 2004, *Guide for the Planning, Design, and Operation of Pedestrian Facilities*; National Association of City Transportation Officials, Urban Street Design Guide, <http://nacto.org/publication/urban-street-design-guide/intersection-design-elements/crosswalks-and-crossings/midblock-crosswalk>, accessed September 29, 2016; FHWA Designing Sidewalks and Trails for Access Part II of II: Best Practices Design Guide Chapter 8; FHWA, 2008, Interim Approval for Option Use of Rectangular Rapid Flashing Beacons (IA-11); FHWA, 2006, Federal Highway Administration University Course on Bicycle and Pedestrian Transportation Lesson 12: Midblock Crossings.
4. The above design guideline is a recommendation for complete streets implementation and does not supersede a jurisdiction's existing standards.

DESIGN GUIDELINE
Daylighting Intersections

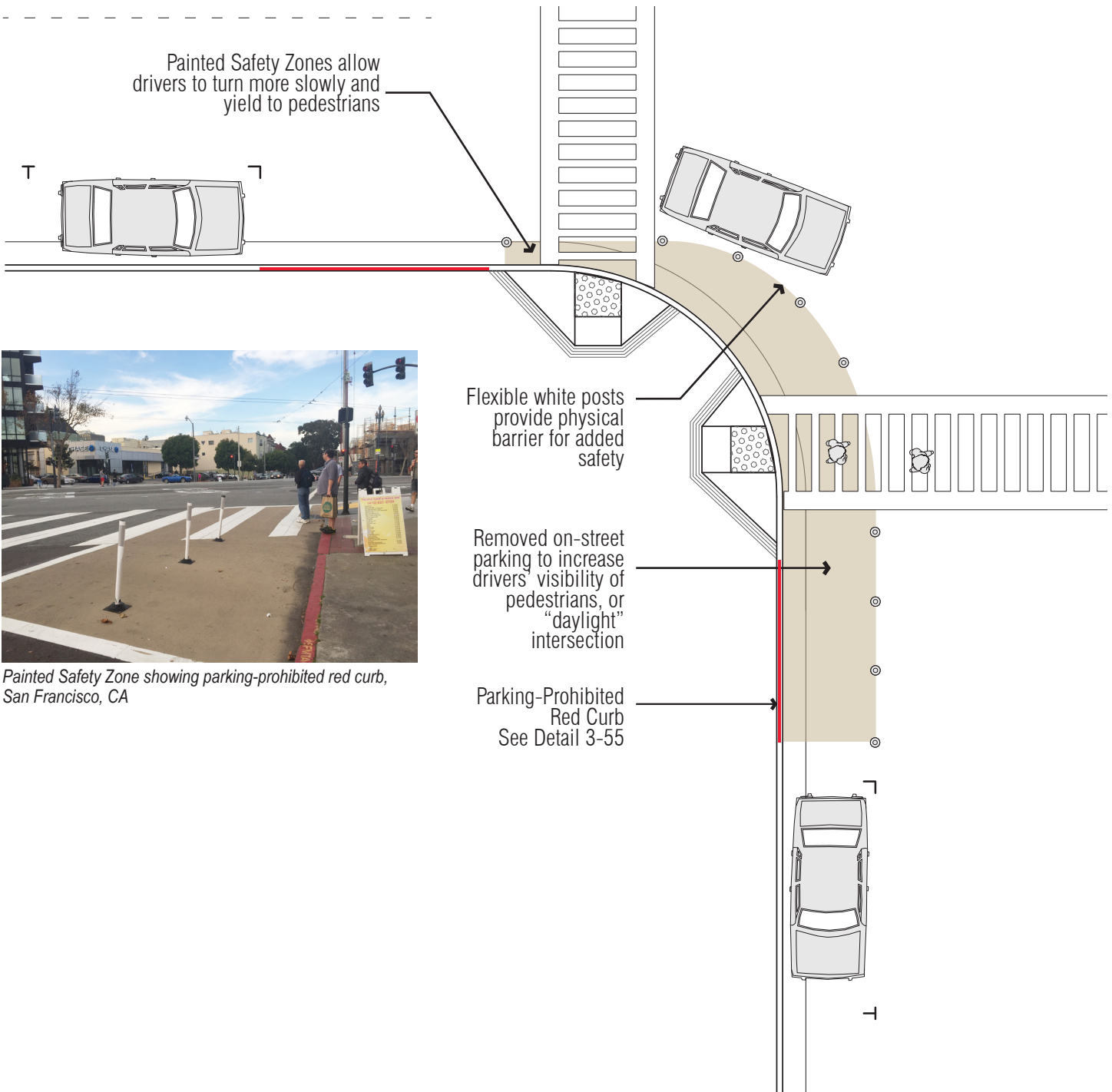
CONDITION	DAYLIGHTING GUIDANCE
Urban streets with 20 to 30 mph speed limits	Keep at least 20 feet clear (removal of one parking space) in advance of crosswalks at each intersection approach
Streets with 35 to 45 mph speed limits	Keep at least 50 feet clear (removal of two parking spaces) in advance of crosswalks at each intersection approach



Notes:

1. Daylighting can also be used at driveways and other poor sightline areas.
2. Daylighting can provide space for other uses such as green infrastructure, landscaping, bike parking, curb extensions, parklets, and Painted Safety Zones.
3. Sources: National Association of City Transportation Officials, Urban Street Design Guide, <http://nacto.org/publication/urban-street-design-guide/intersection-design-elements/visibility-sight-distance>, accessed September 27, 2016; America Walks, Daylighting, <http://americawalks.org/daylighting>, accessed September 27, 2016; San Francisco Municipal Transportation Agency Blog, March 2015, "Daylighting' Makes San Francisco Crosswalks Safer", accessed September 27, 2016.
4. The above design guideline is a recommendation for complete streets implementation and does not supersede a jurisdiction's existing standards.

DESIGN GUIDELINE
Painted Safety Zone



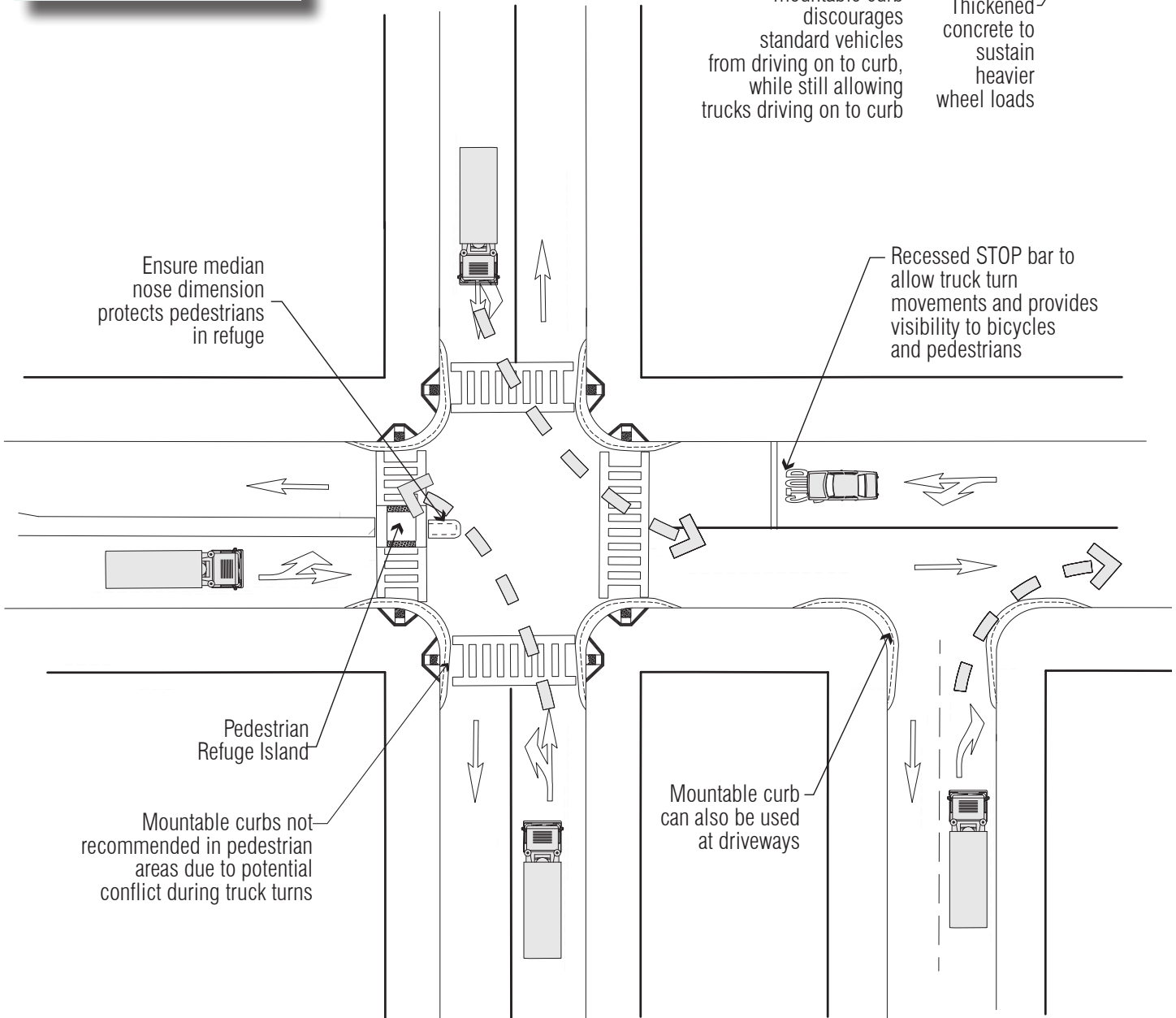
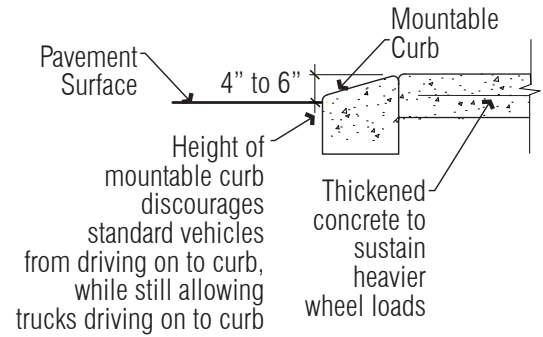
Painted Safety Zone showing parking-prohibited red curb, San Francisco, CA

Notes:

1. Painted Safety Zones act as a low-cost measure to provide a buffer between pedestrians waiting at or crossing an intersection. In the future, a Painted Safety Zone has the potential to be built to become a curb extension.
2. It is recommended that Painted Safety Zones be installed at busy and historically unsafe intersections, especially where sight lines are poor.
3. Sources: San Francisco Municipal Transportation Agency (SFMTA) Blog, June 2016, "Painted Safety Zones", <https://www.sfmta.com/about-sfmta/blog/painted-safety-zones>, accessed September 27, 2016; SFMTA Blog, August 2016, "Three Ways Painted Safety Zones Make People Safer", <https://www.sfmta.com/about-sfmta/blog/three-ways-painted-safety-zones-make-people-safer>, accessed September 27, 2016; StreetsBlog SF, June 2015, "SFMTA Plans to Install Painted 'Safety Zones' at 40 Intersections This Year," <http://sf.streetsblog.org/2015/06/25/sfmta-plans-to-install-painted-safety-zones-at-40-intersections-this-year>, accessed September 27, 2016.
4. The above design guideline is a recommendation for complete streets implementation and does not supersede a jurisdiction's existing standards.

DESIGN GUIDELINE
Truck Turning

Mountable curbs/truck aprons allow truck movements in areas that have limited right-of-way dimensions. They can be applied at intersections, driveways, median noses, and roundabouts.



Notes:

1. Sources: City of Portland Office of Transportation, 2008, *Truck Movements and Other Large Vehicles in Portland*, pages 30 to 33; Federal Highway Administration, *Achieving Multimodal Networks: Applying Design Flexibility and Reducing Conflicts*, https://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/multimodal_networks/part01.cfm, accessed September 28, 2016;
2. The above design guideline is a recommendation for complete streets implementation and does not supersede a jurisdiction's existing standards.

Transportation Capital Project Complete Streets Checklist

This checklist is designed to assist local jurisdiction staff in identifying and assessing a range of Complete Streets-related needs and opportunities throughout the capital project development process. This checklist is also intended to serve as documentation of Complete Streets-related elements and decisions, including exceptions from the adopted Complete Streets policy. This checklist is designed to be completed over three separate phases: the planning/scoping phase; the schematic design phase; and the final design phase.

In the beginning of the planning/scoping phase, jurisdiction staff will compile information about the project area and its existing conditions (questions 1 through 16). Questions 17-18 will document applicable plans, policies, and design guidance. Questions 19-24 should be completed at the conclusion of the planning phase, prior to entering into design, to document any issues, concerns, or ideas raised in conversations with stakeholders during the planning process.

In the schematic design phase, jurisdiction staff summarize the proposed design approach and elements in questions 25-27. The following questions, 28-37, relate to the proposed schematic design and should be completed at the end of the schematic design phase, prior to the project entering into final design.

In the final design phase, questions 38-45 should be answered at the completion of the final design, and provide an opportunity to document any changes from the schematic design as well as maintenance and construction considerations.

Following the completion of the checklist, agency staff should identify any items requiring follow-up discussion or further review regarding potential project changes or enhancements noted in the checklist. For Complete Streets exceptions identified through the checklist, staff should work with department leadership to ensure the exceptions and justifications are sufficiently documented and communicated to other departments and to community stakeholders.

Transportation Capital Project Complete Streets Checklist

Project Name _____ Project Description/Project Type: _____

Project Extents: From _____ To _____

Project Manager _____

Start date _____ Anticipated construction date _____

Planning/Scoping Phase

Date completed _____

Land Use Context

1. How is the surrounding land use context characterized? Please refer to the typology map (Figure 1) included in the Complete Streets Design Guidelines.

- urban suburban rural and open space
 industrial

2. What are the adjacent land uses (check all that apply)?

- office/retail/mixed use parks / open space industrial
 residential civic / institutional
 other _____

3. What are the major trip generators in the corridor, if any? (existing and future)

- a) Schools yes no
- b) Major employers yes no
- c) Civic/community destinations yes no
- d) Medium to high-density residential yes no
- e) Senior centers/healthcare facilities yes no
- f) Daily needs (grocery, retail, etc) yes no
- g) Other _____

Modal Priority

4. Based on the modal priority maps (available at: <http://gis.fehrandpeers.com/AlamedaCTC/Typology/>), list the modal priorities on the street (Note: omit for local streets):

Primary Study Corridor	Auto	<input type="checkbox"/> First	<input type="checkbox"/> Second	<input type="checkbox"/> Other
	Bicycle	<input type="checkbox"/> First	<input type="checkbox"/> Second	<input type="checkbox"/> Other
Pedestrian	<input type="checkbox"/> First	<input type="checkbox"/> Second	<input type="checkbox"/> Other	
Transit	<input type="checkbox"/> First	<input type="checkbox"/> Second	<input type="checkbox"/> Other	
Trucks	<input type="checkbox"/> First	<input type="checkbox"/> Second	<input type="checkbox"/> Other	
Intersecting Street (if applicable)	Auto	<input type="checkbox"/> First	<input type="checkbox"/> Second	<input type="checkbox"/> Other
	Bicycle	<input type="checkbox"/> First	<input type="checkbox"/> Second	<input type="checkbox"/> Other
	Pedestrian	<input type="checkbox"/> First	<input type="checkbox"/> Second	<input type="checkbox"/> Other
	Transit	<input type="checkbox"/> First	<input type="checkbox"/> Second	<input type="checkbox"/> Other
	Trucks	<input type="checkbox"/> First	<input type="checkbox"/> Second	<input type="checkbox"/> Other

5. Complete Streets Exceptions: Check if any of these modes do not need to be served (if any modes are checked, include explanatory note)

- auto bicycle pedestrian transit trucks

Note: _____

Existing Facilities and Usage

6. Functional classification (arterial, collector, local):

7. Traffic signals (number and type) _____

8. On-street parking utilization (if known)

- <25%
- 25% to 50%
- 50% to 80%
- >80%
- not known

9. User volumes

Motor Vehicle (AADT)	Heavy Vehicle %	Pedestrian Volumes	Bicycle Volumes	Buses / hour (during peak hour)

10. Posted speed limit: _____ 85th percentile speed (if known): _____

11. Truck route designation, if any _____

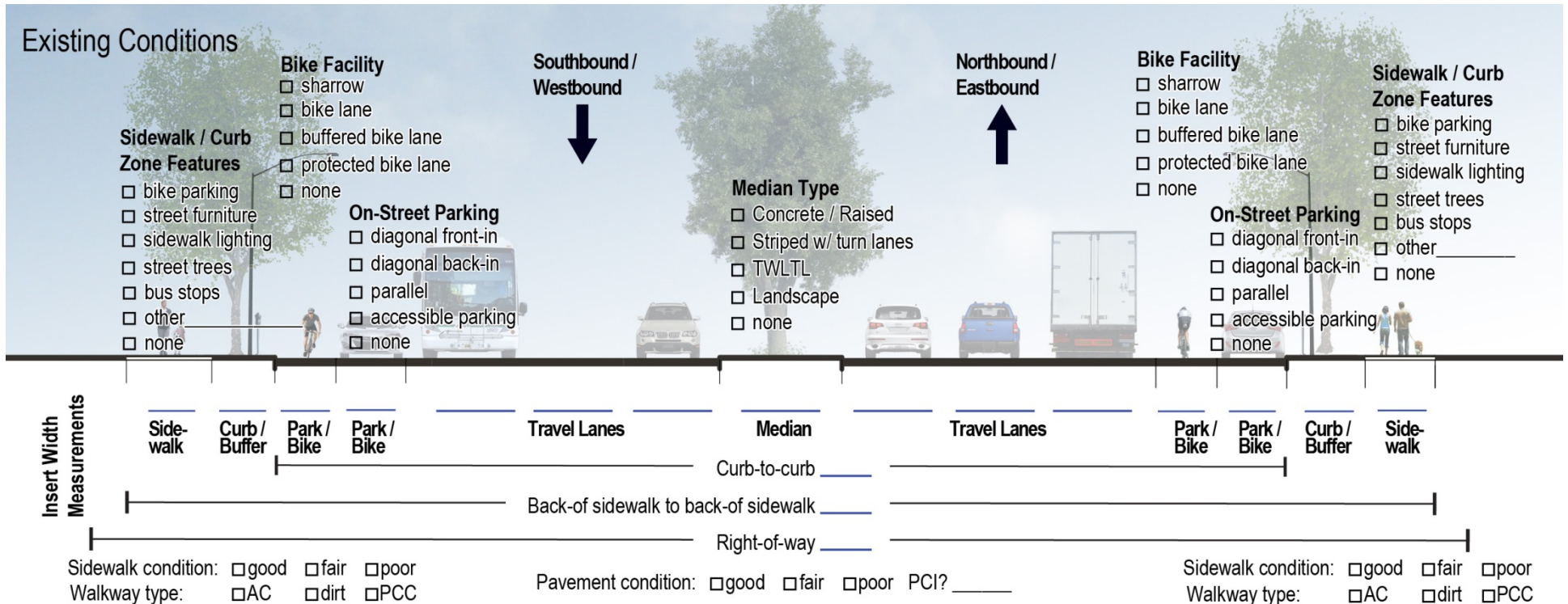
12. Loading zones: yes no number _____

13. Are there any “unmovable encroachments” (e.g. buildings, masonry walls, etc.) in the public right-of-way? If yes, describe.

yes no

14. Is there a future width line (Alameda County)? If yes, specify the width.

yes no width _____



Existing Challenges

15. Safety/collision data for past five years from Statewide Integrated Traffic Records System (SWITRS) database (20____ to 20____)

Total crashes	Fatalities	Severe Injuries	Collisions involving bicycles	Collisions involving pedestrians

- a. Are any collision types over-represented? _____
- b. Are there collisions of types that may be correctable by infrastructure countermeasures?
 - unsafe speeds left turn broadside failure to yield
 - door zone collisions right hook collisions
 - other _____

16. Are any of the following existing challenges present in the project area?

a. Pedestrian

Striping/Crossings

- Low yielding compliance at midblock crossing locations
- Low yielding compliance at right turn on red locations
- Poorly marked or low visibility crosswalks
- Major trip generator or bus stop not served by crosswalk
- Wide crossing distances (e.g. greater than _____ feet)
- Intersection legs without crosswalks
- Infrequent crossing opportunities (e.g. more than ¼ mile)
- Uncontrolled crossings of high speed or high volume roadways

Signals

- Insufficient pedestrian crossing time
- Signal cycle lengths resulting in long crossing delay for pedestrians (e.g. cycle length of _____ sec)
- Missing push buttons
- Missing countdown signals

Sidewalk Construction

- Missing curb ramps
- Insufficiently sized median refuges or medians that do not extend to crosswalk
- Obstructions or “pinch points” in sidewalk clear width
- Missing sidewalks or sidewalk gaps
- Utility boxes, signage, or street furniture obstructing the natural walking path
- Lack of pedestrian-scale lighting or insufficient illumination of pedestrian realm
- Other _____

b. Bicycle

Striping/Crossings

- Left turns where bicyclists cross multiple lanes or merge into high speed traffic
- Unmarked door zone
- Missing bike lane striping, pavement marking, or signage
- Bike lanes on the curb side of right turn pockets
- Bike lanes between through lane and right turn pockets for greater than 200 feet
- Uncontrolled crossings of high speed or high volume roadways

Signals

- Insufficient crossing time
- Missing or unmarked bicycle detection

Roadside

- No/insufficient bicycle parking
- Storm drains or gutter pans in bicycle lane that are not bicycle compatible
- Other _____

c. Transit

- Operational**
 - Unnecessary pull-outs
 - Buses experience delays pulling into traffic from stops
 - Frequent bus/bike weaving
 - Intersections that take multiple cycles for bus to clear
 - Insufficiently wide curb lanes
- Stop Location**
 - Bus stops not adequate in length to accommodate buses on route during peak hour
 - Low ridership or redundant stops that could be consolidated
 - Nearside stops that could be moved to farside
- Stop Design**
 - Stops without benches or shelters
 - Insufficient space for door landing at stops
 - Higher ridership stops lacking amenities
 - Other _____

d. Truck/Commercial Vehicle/Large Vehicle/Curb Management

- Frequent double parking activity
- Off-tracking into opposing travel lane
- Off-tracking onto curb
- Insufficient lane widths
- Missing or damaged route signage
- Other _____

e. General

- Slip lanes not justified by design vehicles or traffic volumes
- Driving at unsafe speeds
- Wide turning radii not justified by frequent buses or other large vehicles
- Wide travel lanes not justified by frequent transit or other large vehicles

- Vehicle volume significantly less than capacity
- Obstructed sight lines (parked cars, utility boxes, trees, vertical curves)
- Skewed intersections that can be “teed up”
- Other _____

Notes:

Plans, Policies, Guidelines, and Standards

17. Have any **ongoing or existing plans** identified needs in the study area?

Plan	Needs identified in Plan (e.g. crossings, turn lanes)			
	Ped	Bike	Transit	Vehicular
<i>Bicycle Master Plan</i>				
<i>Mission Blvd Corridor Specific Plan</i>				
<i>Hayward Cannery Area Design Plan</i>				

18. Relevant **policies, design standards and guidelines**

- *Complete Streets Design Guidelines*
- *Complete Streets Policy Resolution*
- *Engineering Design Guidelines for Unincorporated Alameda County*
- *Public Works Design Guidelines*
- *Alameda County Neighborhood Traffic Calming Program*
- *Residential Design Standards and Guidelines for the Unincorporated Communities of West Alameda County*

Have all applicable design standards for bicycle/pedestrian facilities been followed? yes no partially, explain: _____

External Agency/Stakeholder Coordination

(To be completed at conclusion of planning/scoping phase)

19. List agencies requiring coordination:

Agency	Has coordination occurred? Note any issues that are outstanding.
	<input type="checkbox"/> yes <input type="checkbox"/> no
	<input type="checkbox"/> yes <input type="checkbox"/> no
	<input type="checkbox"/> yes <input type="checkbox"/> no
	<input type="checkbox"/> yes <input type="checkbox"/> no
	<input type="checkbox"/> yes <input type="checkbox"/> no

Internal Department Coordination

(To be completed at conclusion of planning/scoping phase)

20. Note internal departments requiring coordination:

Department	Has coordination occurred? Note any priorities or concerns. If coordination has not occurred, note whether it is planned.
<i>Community Development</i>	<input type="checkbox"/> yes <input type="checkbox"/> no
<i>Traffic Engineering</i>	<input type="checkbox"/> yes <input type="checkbox"/> no
<i>Road Design</i>	<input type="checkbox"/> yes <input type="checkbox"/> no
<i>Maintenance</i>	<input type="checkbox"/> yes <input type="checkbox"/> no
<i>Right-of-Way Services</i>	<input type="checkbox"/> yes <input type="checkbox"/> no
<i>Other?</i>	

Community Stakeholder Review

(To be completed at conclusion of planning/scoping phase)

21. Have relevant advisory committees been informed of the project?
 yes no if yes, list _____

22. Have community stakeholders been engaged?

yes no

23. Have adjacent property owners been engaged?

yes no

24. Have there been public meetings? (N/A for smaller projects)

yes, if so, how many? _____ no

meeting(s) are upcoming on _____ dates

Comment themes:

Schematic Design Phase

Date Completed _____

Modal Priorities

25. Do the recommended facilities for the priority modes create conflicts or tradeoffs between modes? (if yes, describe) yes no

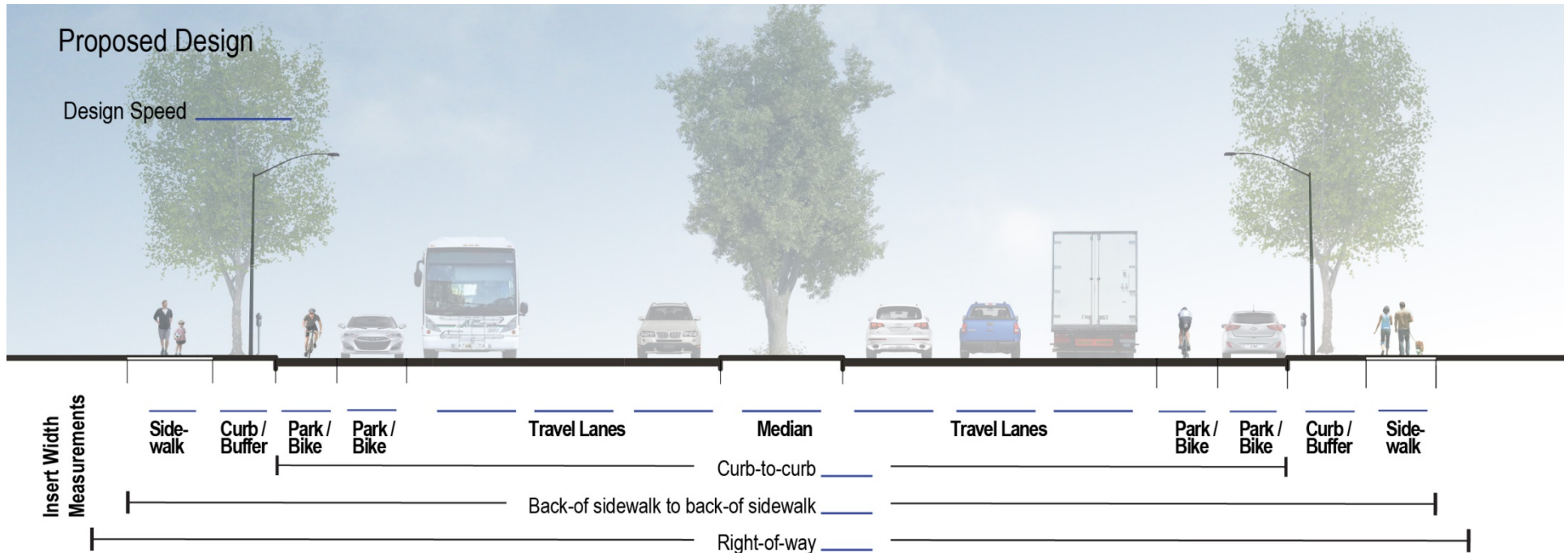
26. Did you omit the preferred design for a higher priority mode in place of a lower priority mode?

yes (if yes, which _____) no
If yes, explain:

Proposed Design

27. What complete streets elements are proposed in the design?

- a. Sidewalk zone *Zone not impacted by project*
 - Additional marked pedestrian crossings
 - Additional treatments to enhance existing crossings
 - Targeted widening around obstructions to maintain minimum ADA clear path
 - Relocation of fixed objects to maintain minimum ADA clear path
 - Widened sidewalk for enhanced pedestrian realm
- b. Curb zone *Zone not impacted by project*
 - Bicycle parking
 - Street trees
 - Pedestrian scale lighting
 - Bus shelter/other transit stop amenities



- c. Parking zone *Zone not impacted by project*
 - Bike corrals
 - Bus loading islands
 - Bus bulbs
 - Bus stop relocation/consolidation
 - Bus stop lengthening
 - Concrete bus loading pads
 - "Daylighting" – removal of parking at intersections for improved sight distance of pedestrians
 - Loading zones
 - Short-term or pick-up/drop-off parking
 - Curb parking (provides pedestrian buffer)
 - Back-in angle parking
 - Marking of parking tees/door zone for bicyclist safety
- d. Bicycle zone *Zone not impacted by project*
 - New Class II bike lanes
 - Widened Class II bike lanes
 - Bike lane buffers
 - Class IV bike lanes
 - Shared lane markings
 - Paint to mark conflict/weaving zones
 - Bicycle wayfinding
 - Contraflow bike lanes
- e. Vehicle zone *Zone not impacted by project*
 - Narrowed travel lanes to reduce traffic speeds
 - Widened travel lanes to accommodate buses or trucks
 - Vertical traffic calming elements (speed bumps, speed humps/tables)
 - Horizontal traffic calming elements (chicanes, edge islands, traffic circles)
 - Signal coordination at slower signal progression speed
 - Textured pavement for traffic calming
 - Dedicated transit lanes
 - Class III bike routes
 - Diverters/volume management on Class III bike routes

- f. Median zone *Zone not impacted by project*
 - Pedestrian refuge island
 - Trees or landscaping
 - Left turn pockets
- g. Intersections and crossings *Zone not impacted by project*

- | | |
|-------------------------|---|
| Signal Timing/Phasing | <input type="checkbox"/> Pedestrian leading interval
<input type="checkbox"/> Bicycle leading interval
<input type="checkbox"/> Pedestrian scramble phase
<input type="checkbox"/> Signal retiming to improve bike/ped crossing times
<input type="checkbox"/> Separate bicycle signal phase
<input type="checkbox"/> Transit signal priority
<input type="checkbox"/> Restriction of right turn on red
<input type="checkbox"/> Restriction of permitted left turns |
| Signal Hardware | <input type="checkbox"/> Pedestrian countdown signals
<input type="checkbox"/> Pedestrian push buttons
<input type="checkbox"/> Audible pedestrian signals
<input type="checkbox"/> New bicycle detection
<input type="checkbox"/> RRFB or pedestrian hybrid beacon |
| Striping / Paint | <input type="checkbox"/> Bicycle box
<input type="checkbox"/> Bicycle two-stage left turn box
<input type="checkbox"/> Bike lanes marked through intersection
<input type="checkbox"/> Bike lanes to the left of right-turn pockets
<input type="checkbox"/> Advanced yield lines or stop bars
<input type="checkbox"/> Recessed stop bar for large vehicle turning radii
<input type="checkbox"/> High visibility crosswalk |
| Curb ramps /realignment | <input type="checkbox"/> New or realigned midblock crossings
<input type="checkbox"/> ADA curb ramps – one crosswalk approach
<input type="checkbox"/> ADA curb ramps – two crosswalk approaches
<input type="checkbox"/> Curb extensions/bulb outs
<input type="checkbox"/> Mountable curbs to accommodate trucks
<input type="checkbox"/> Bus queue jump
<input type="checkbox"/> Realigned or rechannelized intersection
<input type="checkbox"/> Closure of slip lanes |

External Agency/Stakeholder Coordination

(To be completed at conclusion of planning/scoping phase)

28. Have outstanding issues from planning phase been discussed further?

Agency	Has further discussion/coordination occurred? Note ongoing issues or resolutions to earlier issues:
	<input type="checkbox"/> yes <input type="checkbox"/> no
	<input type="checkbox"/> yes <input type="checkbox"/> no
	<input type="checkbox"/> yes <input type="checkbox"/> no
	<input type="checkbox"/> yes <input type="checkbox"/> no
	<input type="checkbox"/> yes <input type="checkbox"/> no

Internal Department Coordination

(To be completed at conclusion of planning/scoping phase)

29. Have the concerns from the planning phase been discussed further?

Department	Has further discussion/coordination occurred? Note any priorities, resolutions to earlier issues, or outstanding concerns.
<i>Community Development</i>	<input type="checkbox"/> yes <input type="checkbox"/> no
<i>Traffic Engineering</i>	<input type="checkbox"/> yes <input type="checkbox"/> no
<i>Road Design</i>	<input type="checkbox"/> yes <input type="checkbox"/> no
<i>Maintenance</i>	<input type="checkbox"/> yes <input type="checkbox"/> no
<i>Right-of-Way Services</i>	<input type="checkbox"/> yes <input type="checkbox"/> no
<i>Other?</i>	

Community Stakeholder Review

(To be completed at conclusion of planning/scoping phase)

- 30. Have relevant advisory committees been updated? yes no
- 31. Further discussion with community stakeholders? yes no
- 32. Further discussion with adjacent property owners? yes no
- 33. Have there been additional public meetings? yes no
(N/A for smaller projects) upcoming
- 34. Have there been comment themes differing from those in the planning phase? yes no

Additional comment themes:

Design Tradeoffs

(To be completed at conclusion of planning/scoping phase)

- 35. Were any design options considered/evaluated and not recommended?

- 36. If the project does not incorporate separate bicycle and pedestrian facilities, list the reasons why:
 - Cost
 - Right-of-way
 - Not the first or second modal priority
 - Other

37. How does the proposed schematic design impact conditions for each mode? If negative or positive, note the impact. (Note: both negative and positive impacts could be found for one mode. Leave blank if mode not present.)

Mode	Impacts	Describe the Impact
Auto	<input type="checkbox"/> positive <input type="checkbox"/> neutral <input type="checkbox"/> negative	<i>(e.g. intersection delay; reduced on-street parking supply)</i>
Bicycle	<input type="checkbox"/> positive <input type="checkbox"/> neutral <input type="checkbox"/> negative	<i>(e.g. increase in vehicle speeds, narrowing of bike lanes)</i>
Pedestrian	<input type="checkbox"/> positive <input type="checkbox"/> neutral <input type="checkbox"/> negative	<i>(e.g. increase in roadway width; removal of sidewalk space; increased signal cycle lengths)</i>
Transit	<input type="checkbox"/> positive <input type="checkbox"/> neutral <input type="checkbox"/> negative	<i>(e.g. intersection delay; removal of stop amenities)</i>
Trucks	<input type="checkbox"/> positive <input type="checkbox"/> neutral <input type="checkbox"/> negative	<i>(e.g. intersection delay; reduction or removal of loading zones; reduce maneuverability)</i>
Other mode (if applicable)?	<input type="checkbox"/> positive <input type="checkbox"/> neutral <input type="checkbox"/> negative	

Final Design

Date Completed: _____

Modal Priorities

38. Are there potential conflicts between modes that were not addressed in the schematic design phase, and that still need to be addressed? (if yes, describe) yes no

Proposed Design

39. Are there any changes from the schematic design? Note changes below, and summarize the impacts on each mode, if applicable:

Changes:

Mode	Are there impacts from the design changes (differing from schematic design)? If so, describe:	
Auto	<input type="checkbox"/> yes <input type="checkbox"/> no	
Bicycle	<input type="checkbox"/> yes <input type="checkbox"/> no	
Pedestrian	<input type="checkbox"/> yes <input type="checkbox"/> no	
Transit	<input type="checkbox"/> yes <input type="checkbox"/> no	
Trucks	<input type="checkbox"/> yes <input type="checkbox"/> no	

Stakeholder/Departmental Coordination

40. Have outstanding concerns been discussed further or resolved? Note how issues have been resolved and/or any issues still outstanding.

Agency/Dept. raising issue	Note ongoing issues or resolutions to earlier issues:

41. How have community comments been addressed in final design?

42. Are any major comment themes not addressed? If yes, note.
 yes no

Maintenance and Construction Phase Considerations

43. How will access be maintained during construction for all modes (check one box per mode)?

Agency	Auto	Bicycle	Pedestrian	Transit	Trucks
Detour for duration of project	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Time-of-day closures only (e.g. nighttime)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Short-term closures (e.g. 24 hour) with detour route	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Access maintained with reduced facilities*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Full access maintained (work does not impact mode)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (note):	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

*"Access maintained with reduced facilities" could mean some travel lanes closed for vehicles; could mean bicycle lane is closed, with signage for bicycles to share travel lane; could mean that sidewalk is closed with pedestrian space provided on shoulder; could mean that some transit stops are closed; etc.)

44. Which agency/department is responsible for ongoing maintenance?

- a. Street sweeping and cleaning _____
- b. Restriping and repaving _____
- c. Street furniture (lighting, benches, etc.) _____
- d. Landscaping _____
- e. Waste receptacle and recycling pick-up _____
- f. Other _____

45. Is maintenance of the facility included in regular annual budgets? (if no, how will maintenance occur?)

- yes no

MTC Complete Streets Checklist Correspondence

This checklist is designed to gather some of the same information as is requested in the MTC Complete Streets checklist. The following table shows which questions correspond to the MTC checklist. In some cases, the questions are not the same, but will help provide some information.

MTC Complete Streets Checklist Question #	Alameda County Complete Streets Checklist Section or Question #
1A	Page 2, Existing Facilities
1B	Not addressed
1C	16A and 16B
1D	16A and 16B
2	3
3	15
4a	17
4b	Not addressed
5a	18
5b	18
6	41
7	27
8a	Not addressed
8b	36
9	43
10	44 and 45

Additional Project Notes

Potential project modifications:

Complete Streets exceptions (refer to questions 5, 26 and 38):

Development Review Complete Streets Checklist

This checklist is designed to assist the applicant and jurisdiction staff identify and assess a range of Complete Streets-related needs in the vicinity of each development. These needs, if addressed, would better serve the multimodal transportation needs of those coming and going from the site and the surrounding area. The checklist is to be completed during the pre-application phase, but can be used as a reference throughout the development and design of the project. Following completion of the checklist, staff will identify and document project modifications for further evaluation and discussion.

Project Name _____	Project Description / Project Type:
Project Location _____	
Project Manager _____	
Anticipated construction date _____	

Pre-Application Phase

Project Description

1. What are the proposed land uses (check all that apply)?
 - residential commercial /mixed use industrial
 - civic/institutional
 - other _____

2. What are the major trip generators near the project site, if any? (existing and future)
 - a) Schools yes no
 - b) Major employers yes no
 - c) Civic/community destinations yes no
 - d) Medium to high-density residential yes no
 - e) Senior centers/healthcare facilities yes no
 - f) Daily needs (grocery, retail, etc.) yes no
 - g) Other _____

3. Is the project site located on the path to/from nearby trip generators?
 - yes no
 - Explain: _____

4. Based on the modal priority maps (available at <http://gis.fehrandpeers.com/AlamedaCTC/Typology/>), list the modal priorities on adjacent streets (check all that apply):

Adjacent Street 1 Name: _____

- | | | | |
|------------|--------------------------------|---------------------------------|--------------------------------|
| Auto | <input type="checkbox"/> First | <input type="checkbox"/> Second | <input type="checkbox"/> Other |
| Bicycle | <input type="checkbox"/> First | <input type="checkbox"/> Second | <input type="checkbox"/> Other |
| Pedestrian | <input type="checkbox"/> First | <input type="checkbox"/> Second | <input type="checkbox"/> Other |
| Transit | <input type="checkbox"/> First | <input type="checkbox"/> Second | <input type="checkbox"/> Other |
| Trucks | <input type="checkbox"/> First | <input type="checkbox"/> Second | <input type="checkbox"/> Other |

Adjacent Street 2 Name: _____

- | | | | |
|------------|--------------------------------|---------------------------------|--------------------------------|
| Auto | <input type="checkbox"/> First | <input type="checkbox"/> Second | <input type="checkbox"/> Other |
| Bicycle | <input type="checkbox"/> First | <input type="checkbox"/> Second | <input type="checkbox"/> Other |
| Pedestrian | <input type="checkbox"/> First | <input type="checkbox"/> Second | <input type="checkbox"/> Other |
| Transit | <input type="checkbox"/> First | <input type="checkbox"/> Second | <input type="checkbox"/> Other |
| Trucks | <input type="checkbox"/> First | <input type="checkbox"/> Second | <input type="checkbox"/> Other |

Adjacent Street 3 Name: _____

- | | | | |
|------------|--------------------------------|---------------------------------|--------------------------------|
| Auto | <input type="checkbox"/> First | <input type="checkbox"/> Second | <input type="checkbox"/> Other |
| Bicycle | <input type="checkbox"/> First | <input type="checkbox"/> Second | <input type="checkbox"/> Other |
| Pedestrian | <input type="checkbox"/> First | <input type="checkbox"/> Second | <input type="checkbox"/> Other |
| Transit | <input type="checkbox"/> First | <input type="checkbox"/> Second | <input type="checkbox"/> Other |
| Trucks | <input type="checkbox"/> First | <input type="checkbox"/> Second | <input type="checkbox"/> Other |

Work with Transportation and Engineering Staff to fill out questions 5-8.

5. Within the past five years, have there been any fatal or severe injury collisions within ¼ mile of the site? yes no

If yes, explain _____

6. Within the past five years, have there been any collisions within ¼ mile of the site involving pedestrians or bicyclists? yes no

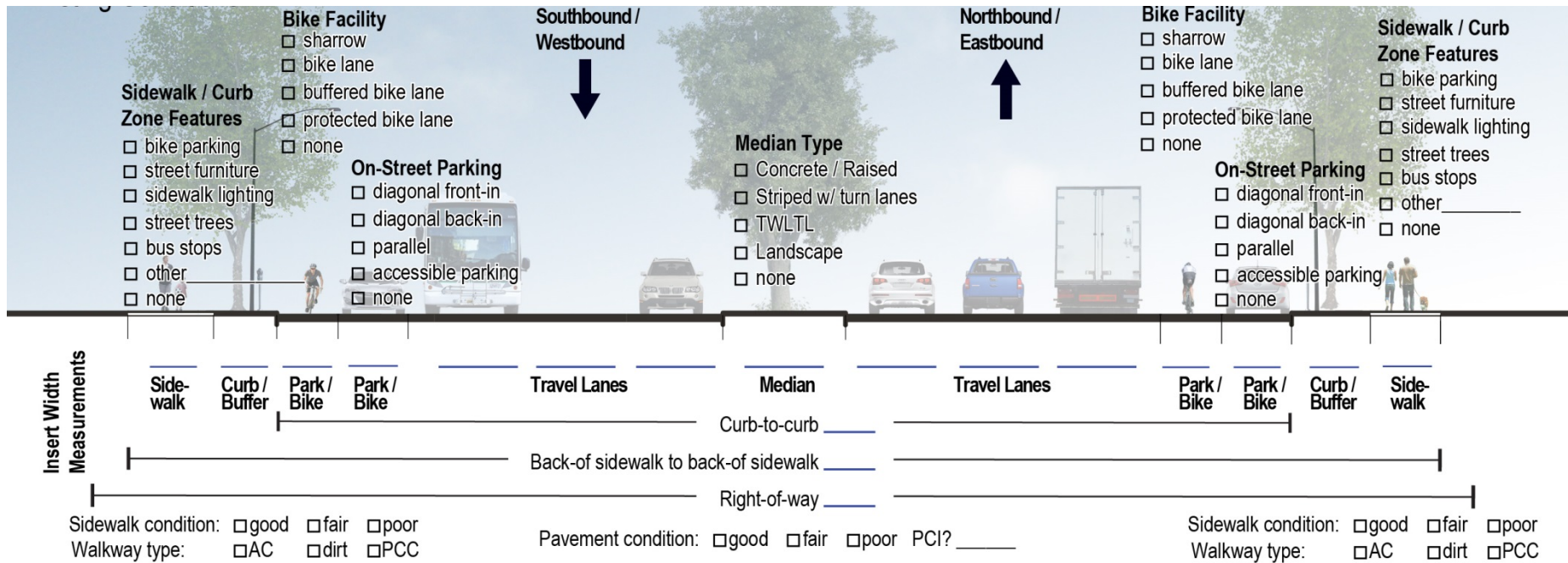
If yes, explain _____

7. Have you observed other opportunities to improve safety performance? (based on field observation) yes no If yes, note:

Existing Physical Conditions

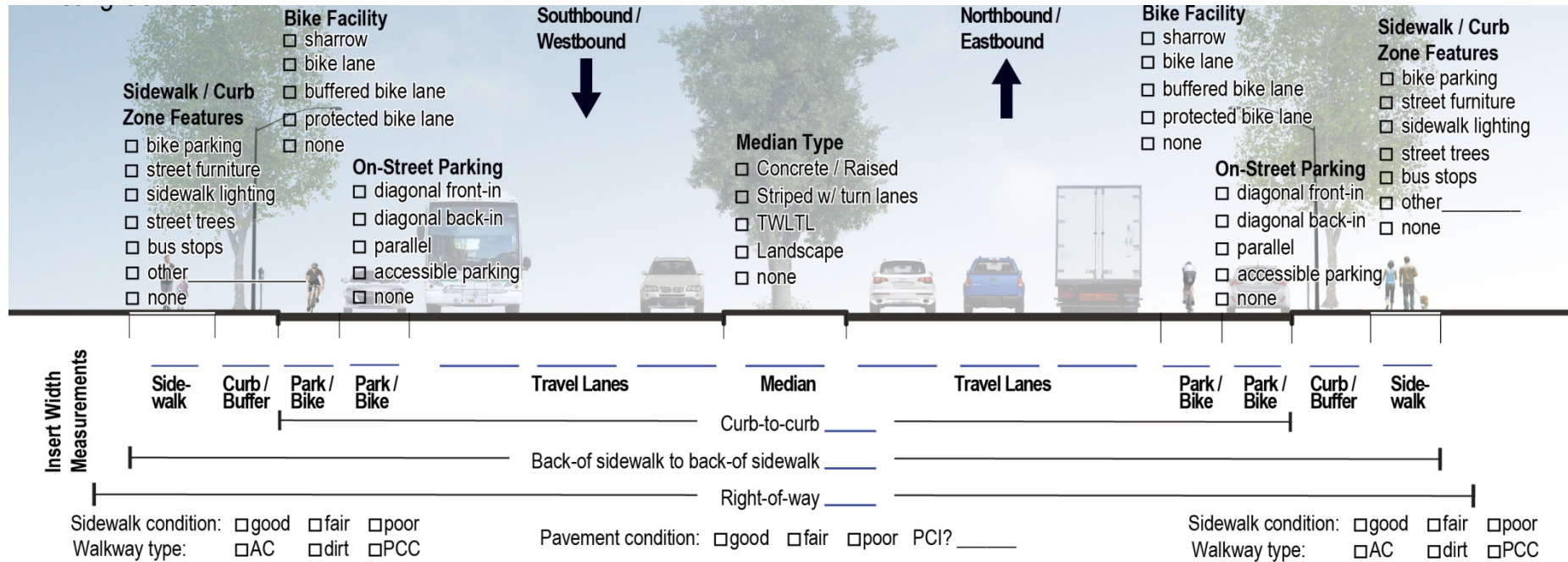
8. What are the existing right-of-way elements adjacent to the project site? Use cross section graphic for each street adjacent to the site.

Adjacent Street 1: Street name _____

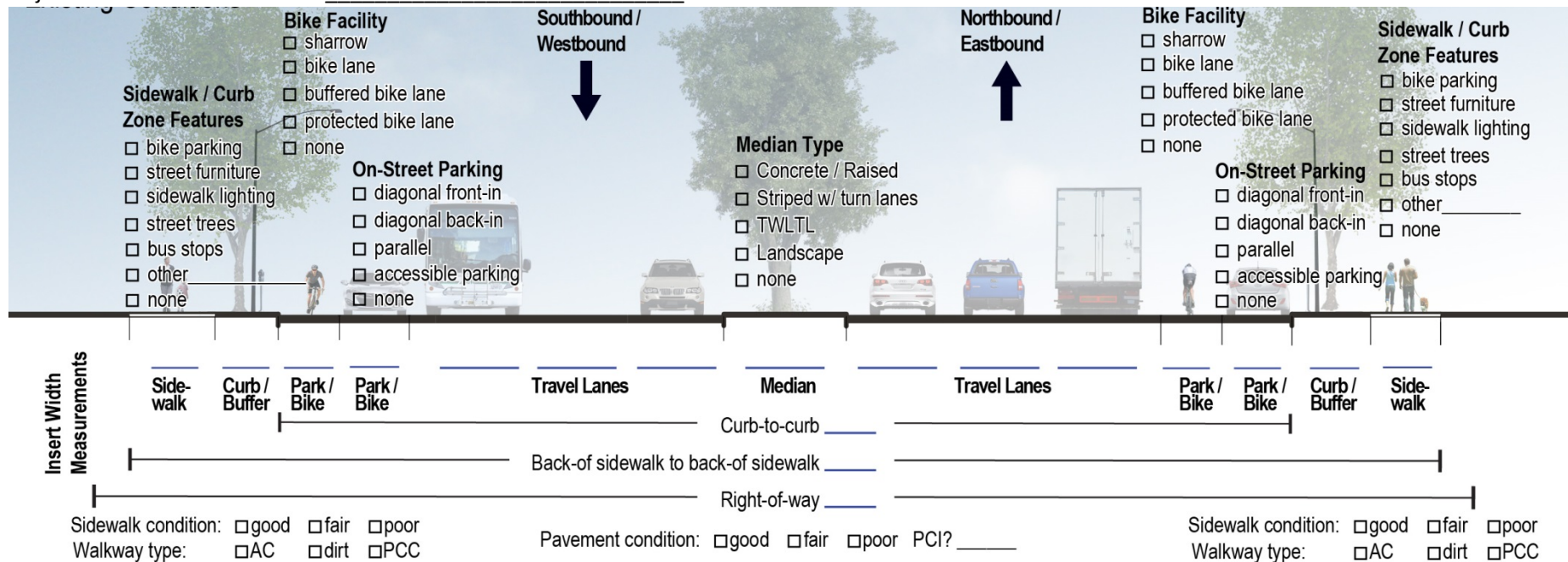


TWLTL = two-way left turn lane | AC = asphalt concrete | PCC = poured cement concrete | PCI = pavement condition index

Adjacent Street 2: Street name _____



Adjacent Street 3: Street name _____



Plans, Policies, Guidelines, and Standards

9. What are **relevant ongoing or existing plans**?

Plan	Identified Needs (yes or no)				
	Ped	Bike	Transit	Vehicular	Other
<i>Bicycle Master Plan</i>	<input type="checkbox"/> yes <input type="checkbox"/> no	<input type="checkbox"/> yes <input type="checkbox"/> no	<input type="checkbox"/> yes <input type="checkbox"/> no	<input type="checkbox"/> yes <input type="checkbox"/> no	<input type="checkbox"/> yes <input type="checkbox"/> no
<i>Mission Blvd Corridor Specific Plan</i>	<input type="checkbox"/> yes <input type="checkbox"/> no	<input type="checkbox"/> yes <input type="checkbox"/> no	<input type="checkbox"/> yes <input type="checkbox"/> no	<input type="checkbox"/> yes <input type="checkbox"/> no	<input type="checkbox"/> yes <input type="checkbox"/> no
<i>Hayward Cannery Area Design Plan</i>	<input type="checkbox"/> yes <input type="checkbox"/> no	<input type="checkbox"/> yes <input type="checkbox"/> no	<input type="checkbox"/> yes <input type="checkbox"/> no	<input type="checkbox"/> yes <input type="checkbox"/> no	<input type="checkbox"/> yes <input type="checkbox"/> no

List any transportation improvement needs identified in the plan documents listed above:

Transportation Evaluation

10. Indicate whether the following elements have been evaluated for existing conditions at the site and surrounding area and list the result for each mode:

Pedestrian

- Internal site circulation and pedestrian routes yes no
- Site access and street frontage yes no
- Signage and wayfinding yes no
- Intersections and street crossings yes no
- Access to/from surrounding area yes no
- Lighting yes no
- ADA facilities yes no
- Other _____ yes no

List any pedestrian deficiencies identified:

Bicycle

- Parking supply and ease of use yes no
- Site access yes no
- Signage and wayfinding yes no
- Intersections yes no
- Access to/from surrounding area yes no
- Other _____ yes no

List any bicycle deficiencies identified:

Auto

- On-street parking yes no
- Off-street parking yes no
- Disabled parking yes no
- Green infrastructure yes no
- Driveway placement and ped/bike conflict points yes no
- Other _____ yes no

List any auto deficiencies identified:

Transit

- Bus stop placement yes no
- Waiting area amenities and stop design parameters yes no
- Other _____ yes no

List any transit deficiencies identified:

Trucks and Heavy Vehicles

- Curbside loading areas yes no
- On-site loading areas yes no
- Turning radii yes no
- Emergency vehicle access yes no
- Other _____ yes no

List any truck/heavy vehicle deficiencies identified:

11. How does the proposed **site design** impact conditions for each mode? If negative or positive, note the impact. (Note: both negative and positive impacts could be found for one mode.)

Mode	Impacts	
Auto	<input type="checkbox"/> positive <input type="checkbox"/> neutral <input type="checkbox"/> negative	<i>(e.g. intersection delay; reduced on-street parking supply)</i>
Bicycle	<input type="checkbox"/> positive <input type="checkbox"/> neutral <input type="checkbox"/> negative	<i>(e.g. increase in vehicle speeds; narrowing of bike lanes)</i>
Pedestrian	<input type="checkbox"/> positive <input type="checkbox"/> neutral <input type="checkbox"/> negative	<i>(e.g. increase in roadway width; removal of sidewalk space; increased signal cycle lengths)</i>
Transit	<input type="checkbox"/> positive <input type="checkbox"/> neutral <input type="checkbox"/> negative	<i>(e.g. intersection delay; removal of stop amenities)</i>
Trucks	<input type="checkbox"/> positive <input type="checkbox"/> neutral <input type="checkbox"/> negative	<i>(e.g. intersection delay; reduction or removal of loading zones; reduce maneuverability)</i>
Other mode?	<input type="checkbox"/> positive <input type="checkbox"/> neutral <input type="checkbox"/> negative	

External Agency/Stakeholder Coordination

12. List agencies requiring coordination:

Agency	Has coordination occurred? Note any issues that are outstanding.
	<input type="checkbox"/> yes <input type="checkbox"/> no
	<input type="checkbox"/> yes <input type="checkbox"/> no
	<input type="checkbox"/> yes <input type="checkbox"/> no

Maintenance and Construction Phase Considerations

13. How will access for all modes be maintained during construction (check one box per mode)?

Agency	Auto	Bicycle	Pedestrian	Transit	Trucks
Detour for duration of project	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Time-of-day closures only (e.g. nighttime)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Short-term closures (e.g. 24 hour) with detour route	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Access maintained with reduced facilities*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Full access maintained (work does not impact mode)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

*"Access maintained with reduced facilities" could mean some travel lanes closed for vehicles; could mean bicycle lane is closed, with signage for bicycles to share travel lane; could mean that sidewalk is closed with pedestrian space provided on shoulder; could mean that some transit stops are closed; etc.)

14. Will any transportation facilities or street elements be privately maintained? yes no If yes, explain:

15. Will Complete Streets design be applied on privately maintained facilities? yes no

CENTRAL COUNTY COMPLETE STREETS IMPLEMENTATION



Table 1: Goal 1 Summary

Incorporate Complete Streets principles throughout all project phases.

Objective	Action	City of Hayward Implementation Details			
		Timeframe	Lead Party	CS Policy Reference	Required Preceding Actions
1.1: Expand the implementation of Complete Streets principles through the planning and design/project development phases.	1.1.1. Develop a checklist(s) to guide the implementation of Complete Streets principles for all projects affecting the roadway network and addressing all phases of the implementation process including: <ul style="list-style-type: none"> ○ Project scoping/conception ○ Design/Project Development This checklist would be combined with the checklist items for the construction and operations/maintenance phases referenced under Objective 1.2.	Immediate (through this Project)	Engineering and Transportation	Section B, Item 2a	None
	1.1.2. Identify performance measures for before/after analyses of Complete Streets projects. The performance measures should address issues such multi-modal access, safety, equity, public health, economy, and the environment.	1 – 2 years	Engineering and Transportation	Section D, Item 1	None

Objective	Action	City of Hayward Implementation Details			
		Timeframe	Lead Party	CS Policy Reference	Required Preceding Actions
1.1, continued: Expand the implementation of Complete Streets principles through the planning and design/project development phases.	1.1.3. Develop and implement internal procedures for use of the project checklists for planning- and design-related elements.	0 – 1 year	Maintenance Services	Section B, Item 2a	Action 1.1.1
1.2: Expand the implementation of Complete Streets principles through the construction, operations and maintenance phases.	1.2.1. Develop a checklist(s) to guide the implementation of Complete Streets principles for all projects affecting the roadway network and addressing all phases of the implementation process including: <ul style="list-style-type: none"> ○ Construction ○ Operations and Maintenance 	Immediate (partially through this Project)	Engineering and Transportation	Section B, Item 2a	None
	1.2.2. Develop guidelines for when and how to employ Complete Streets treatments, with an emphasis on opportunities to employ treatments as part of repaving projects. Examples include uncontrolled crosswalks, refuge islands, bus stop relocations, and road diets/lane conversions.	0 – 1 year (partially through this Project)	Engineering and Transportation	Section B, Item 2	None
	1.2.3. Develop regular procedures/policies/schedule to assure maintenance of Complete Street facilities including signals and other traffic control devices, pavement, lighting, signage/stripping, and landscaping.	1 – 2 years	Maintenance Services, Administration	Section B, Item 2	Action 1.2.1

Objective	Action	City of Hayward Implementation Details			
		Timeframe	Lead Party	CS Policy Reference	Required Preceding Actions
1.2, continued: Expand the implementation of Complete Streets principles through the construction, operations and maintenance phases.	1.2.4. Implement procedures/policies/schedule to assure the maintenance of Complete Streets-related facilities including traffic controls, pavement, lighting, signage/stripping, and landscaping.	2 – 5 years	Engineering and Transportation	Section B, Item 2	Action 1.2.3
	1.2.5. Complete an annual evaluation of collisions to identify priority locations for safety improvements.	2 - 5 years	Public Works - Transportation	Section D, Item 2c	None
1.3: Continue developing design guidance to support the implementation of Complete Streets.	1.3.1. Revise or amend street design standards to provide design flexibility in the use of multimodal design treatments and to incorporate treatments newly adopted into the Caltrans HDM and California MUTCD.	Immediate (through this Project)	Development Services, Planning Division	Section C, Item 1	None
1.4: Continue developing policy guidance to support the implementation of Complete Streets principles.	1.4.1. Implement a VMT-based evaluation system to replace automobile LOS in CEQA analyses.	2 - 5 years	Public Works - Transportation	Section C, Item 1	Development of VMT-based system (by others)
	1.4.2. Adopt multimodal performance metrics such as MMLOS to analyze tradeoffs between automobiles and other modes and support Complete Streets projects.	2 - 5 years	Public Works - Transportation	Section C, Item 1	Action 1.4.1

Table 2: Goal 2 Summary

Address institutional and organizational barriers to Complete Streets implementation.

Objective	Action	City of Hayward Implementation Details			
		Timeframe	Lead Party	CS Policy Reference	Required Preceding Actions
2.1: Strengthen practices for decision-making and coordination between departments.	2.1.1. Develop a process for documenting Complete Streets policy exceptions.	Completed	N/A	Section B, Item 3	None
	2.1.2. Review and revise transportation impact study requirements to ensure accommodations for all users are addressed.	Currently underway	N/A	Section C, Item 1	None
	2.1.3. Develop a process for defining and evaluating maintenance costs for Complete Streets projects.	1 -2 years	Maintenance Services	Section B, Item 2b	None
	2.1.4. Develop or adapt a process for considering Complete Streets principles when prioritizing projects for inclusion in Capital Improvement Program.	1 -2 years	Engineering and Transportation	Section B, Item 2a	None
	2.1.5. Provide staff education opportunities regarding the range of Complete Streets opportunities through design, routine maintenance and construction projects. This may be achieved through annual in-house education sessions or staff attendance at related conferences such as NACTO.	Ongoing	Administration – Development Services, Public Works, Maintenance Services	Section A, Items 1-3	None

Objective	Action	City of Hayward Implementation Details			
		Timeframe	Lead Party	CS Policy Reference	Required Preceding Actions
2.1, continued: Strengthen practices for decision-making and coordination between departments.	2.1.6. Designate a Complete Streets staff lead or interdepartmental team responsible for implementation items that require input from multiple departments. Examples include the documentation of Complete Streets policy exceptions and the development of performance measures.	1 -2 years	Administration – Development Services, Public Works, Maintenance Services	Section A, Items 1-3	None
2.2: Expand external agency and stakeholder coordination.	2.2.1. Consult with transit providers and goods movement stakeholders to identify modifications to development review standards for transit vehicles, transit users and heavy vehicles.	Currently ongoing	Development Services	Section A, Item 1	None
	2.2.2. Consult with transit providers and goods movement stakeholders to establish review procedures and processes for early input on capital improvement projects.	0 – 1 year	Engineering and Transportation	Section A, Item 1	None
2.3: Expand public stakeholder education and engagement.	2.3.1. Develop or adapt public education materials regarding the goals and benefits of a Complete Streets design philosophy and the use of Complete Streets design elements that are unfamiliar to the general public.	1 – 2 years	Development Services, Planning Division	Section A, Item 3	Action 1.3.1
	2.3.2. Develop a process for communicating Complete Streets policy exceptions to the public.	Completed	N/A	Section B, Item 3b	Action 2.1.1

Objective	Action	City of Hayward Implementation Details			
		Timeframe	Lead Party	CS Policy Reference	Required Preceding Actions
2.3, continued: Expand public stakeholder education and engagement.	2.3.3. Increase public awareness of existing processes that can be used to report Complete Streets maintenance and operations concerns such as roadway hazards, potholes, road debris, inadequate pedestrian crossing times, excessive speeding and non-compliance with traffic controls.	Completed	N/A	Section B, Item 2b	None

Table 3: Goal 3 Summary

Complete ongoing monitoring and reporting of Complete Streets implementation.

Objective	Action	City of Hayward Implementation Details			
		Timeframe	Lead Party	CS Policy Reference	Required Preceding Actions
3.1: Evaluate implementation progress on a routine basis.	3.1.1. Develop performance measures for evaluating progress towards meeting system-wide Complete Streets implementation goals, which may include: <ul style="list-style-type: none"> ○ Progress on Implementation Actions from this Workplan ○ Number of Complete Streets concept plans completed ○ Number of Complete Streets projects constructed ○ Safety evaluations completed ○ Number of Complete Streets elements repaired, replaced or upgraded (for example, lane miles of bicycle facilities restriped) 	1 – 2 years	Engineering and Transportation, Administration	Section D, Item 1	None
	3.1.2. Develop a system for tracking the implementation of connected networks for all modes and users. This system may address specific bicycle, pedestrian and transit infrastructure improvements.	2 – 5 years	Engineering and Transportation, Administration	Section D, Item 2	Action 3.1.1

Objective	Action	City of Hayward Implementation Details			
		Timeframe	Lead Party	CS Policy Reference	Required Preceding Actions
3.2: Report implementation progress on a routine basis.	3.2.1. Determine the frequency and method for reporting on Complete Streets implementation progress.	0 – 1 year	Engineering and Transportation, Administration	Section D, Item 2	None
	3.2.2. Initiate before/after studies as applicable for programmed/completed projects including at a minimum, usage by mode, operational characteristics (delay, volumes, traffic diversion), and collision data.	1 – 2 years	Public Works - Transportation	Section D, Item 2	Action 1.1.2



CITY OF HAYWARD

Hayward City Hall
777 B Street
Hayward, CA 94541
www.Hayward-CA.gov

File #: WS 17-006

DATE: February 28, 2017

TO: Mayor and City Council

FROM: Development Services Director

SUBJECT

Discussion of Council Priority Initiative: Complete Communities

RECOMMENDATION

That Council reviews this report and provides feedback and direction to staff regarding the concept of Complete Communities and elements of a proposed work plan, with priority given to completing a comprehensive Zoning Ordinance update and updating the City's two Form-Based Codes, consistent with the General Plan's implementation chapter for FY2017 & FY2018.

ATTACHMENTS

Attachment I Staff Report



DATE: February 28, 2017

TO: Mayor and City Council

FROM: Development Services Director

SUBJECT: Discussion of Council Priority Initiative: Complete Communities

RECOMMENDATION

That Council reviews this report and provides feedback and direction to staff regarding the concept of Complete Communities and elements of a proposed work plan, with priority given to completing a comprehensive Zoning Ordinance update and updating the City's two Form-Based Codes, consistent with the General Plan's implementation chapter for FY2017 & FY2018.

BACKGROUND

In November 2016, the City Council held a retreat with the City Manager, some members of the City's Executive Team, and the Novak Consulting Group to establish goals and priorities for the upcoming year. While the retreat provided an opportunity to identify new initiatives, it also provided an opportunity to align and reprioritize existing initiatives within the framework of Guiding Principles previously identified: to make Hayward a Safe, Clean, Green and Thriving community.

From that working retreat, the City Council directed staff to begin working on several new Initiatives that align with these four guiding principles. While initiatives related to traffic safety/complete streets, affordable housing, and entertainment opportunities around Vista Park/the Tennyson corridor were identified, the City Council also directed staff to develop policies to achieve greater leverage for the City to encourage "Complete Communities." Specifically, the Council requested that staff look at land use decisions that will make the City of Hayward a fun place to live, work and play by requesting amenities, parks, retail/commercial, and recreational opportunities.

In an effort to identify community-focused goals, actions and policies that could meet City Council's directive and assist in making the City of Hayward a complete community, staff reviewed the implementation strategies of the adopted General Plan, which provided a fairly significant number of programs to support the Initiative. The [Hayward 2040 General Plan](#), adopted in July 2014, is the City's overarching planning document and provides a blueprint for growth and development by setting land use policy citywide. The General Plan outlines

goals, policies and implementation programs that are aligned with the Community Vision for the City:

Hayward will be a distinct and desirable community known for its central Bay Area location, vibrant Downtown, sustainable neighborhoods, excellent schools, robust economy, and its growing reputation as a great college town. With a variety of clean, safe, and green neighborhoods, and an accessible network of parks and natural open space, Hayward will be home to one of the most diverse, inclusive, educated, and healthy populations in the Bay Area. It will be a destination for life-long learning, entertainment, arts and culture, recreation, and commerce. It will be a community that values diversity, social equity, transparent and responsive governance, civic engagement, and volunteerism. Hayward will be a thriving and promising community that individuals, families, students, and businesses proudly call home.

The Vision for the future of Hayward is in pure essence the definition of a Complete Community. The steps to achieve that vision are outlined in the [Implementation Program Section of the General Plan](#).

DISCUSSION

Complete Communities Concept - The concept of Complete Communities is not a new one and was embraced during the development of the Hayward 2040 General Plan. A community is “complete” when it provides access by foot, bike, transit and car to jobs, shopping, learning, open space, recreation, and other amenities and services. These are the key components that allow for a community to be an ideal place to live, work and play. The overarching objectives of various General Plan Elements include the following:

Land Use: [The Land Use and Community Character Element](#) establishes goals and policies to strategically accommodate future growth while preserving and enhancing the quality and characteristics that make Hayward a desirable place to live, work, learn, and play.

Mobility: [The Mobility Element](#) establishes goals and policies to improve the movement of people and goods within and through the City in an effort to improve the community’s economy, environment, and overall quality of life.

Economic Development: [The Economic Development Element](#) seeks to improve the local economy by diversifying the economic base, supporting entrepreneurship, and expanding employment opportunities through business retention.

Education and Life-Long Learning Element: [The Education and Life-Long Learning Element](#) establishes goals and policies to improve education and learning opportunities for all Hayward residents.

Community Health and Quality of Life: [The Community Health and Quality of Life Element](#) focuses on fostering the health and well-being of all Hayward residents.

Housing: [The Housing Element](#) establishes goals and policies to preserve, improve, and develop housing for all economic segments of the community in Hayward.

While staff believes the Hayward 2040 General Plan provides a solid framework for the City to make land use decisions that make the City of Hayward a fun place to live, work and play, there are several greater policy questions that need to be asked when considering the best way to begin implementation towards making Hayward a Complete Community.

General Plan Implementation – The Implementation Section of the General Plan outlines a series of programs aimed at activating the goals and policies and is organized by specific timeframes for completion: 2014-2016; 2017-2019; and 2020-2040. The purpose of this was to prioritize what could be completed in the near term following adoption of the General Plan and would include those programs that would be the most effective in transforming city operations and Hayward’s community character consistent with the community Vision. The priority Implementation Programs identified at the time of adoption included:

- LU-1: Comprehensive Zoning Code Update
- LU-2: Comprehensive Subdivision Ordinance Update
- LU-15: State Historic Building Code (Complete)
- M-1: Multimodal LOS and Design Standards (In Process)
- M-2: Multimodal LOS Guidelines (In Process)
- ED-9: Business Attraction, Expansion, and Retention Program (Complete)
- ED-10: Town-Gown Partnership (In Process)
- CS-2: Police Department Strategic Plan Annual Report (Complete/ongoing)
- CS-4: Homeless Services Partnership (In Process)
- CS-9: Police and Fire Impact Fees
- CS-10: Disaster Awareness and Emergency Preparedness Program (In Process)
- NR-8: Energy Reduction Initiative and Annual Report
- NR-9: Financing Program for Residential Energy Efficiency Retrofits (Complete/ongoing)
- EDL-2: Education Partnership (In Process)
- EDL-5: Public School Marketing Campaign (In Process)
- EDL-7: Library Bond (Complete)

To date, the Implementation Programs identified in Bold Text above from this prioritized list are those which have been completed or are in process. Those programs that have not been completed are due to other priorities or lack of funding. In addition to those programs identified above in bold, some other implementation programs have escalated in priority due to new funding sources and/or City Council desire to re-prioritize various components including:

- LU-4: Downtown City Center Specific Plan (Funding and in progress)

- LU-10: Sign Ordinance Update (Re-Prioritized and completed)
- LU-11: Industrial Technology and Innovation Corridor Plan (Re-Prioritized and in progress – Industrial District Zoning Regulations Update)
- LU-16: Mills Act Program (Re-Prioritized and completed)
- M-10: Traffic Calming measures (Funding/Re-Prioritized and in progress)
- M-12: Shuttle Service Study (Funding/Re-Prioritized and in progress)
- M-21: Downtown Parking Management Plan (Funding/Re-Prioritized and in progress)
- HAZ-3: Seismic Retrofit Program (Re-Prioritized and in progress)
- M-6: Complete Streets Assessment (Re-Prioritized and in progress)
- M-8: Complete Streets Evaluation (Re-Prioritized and in progress)
- M-11: Pedestrian Master Plan (As part of the Downtown Specific Plan) (Re-Prioritized and in progress)
- NR-10: Financing program for Commercial Energy Efficiency Retrofits (Re-Prioritized and completed)

In addition to General Plan Implementation Programs, there are some additional initiatives staff will be addressing primarily related to changes in State law including: Accessory Dwelling Units; Density Bonus; and Cannabis.

The key takeaway from these lists is that staff is progressively working on various General Plan Implementation Programs, which are all aimed at activating the goals and policies of the General Plan, which is envisioned to create a complete community.

Staff is recommending that priority be given to completing a Comprehensive Zoning Ordinance update and updating the City's two Form-Based Codes. This would be consistent with what the adopted General Plan has indicated. Updating the Zoning Ordinance could include zoning changes that would encourage more parks and trails/connections, reevaluate the off-street parking standards, and establish requirements for projects to include community benefits and sustainability features. Updating the Form Based Codes would help refine specificity for desired land uses for certain properties along Mission Boulevard.

Question 1: Does Council agree that the Hayward 2040 General Plan, inclusive of the Plan's Vision, Goals and Policies, sets out to achieve the concept of a Complete Community?

Question 2: Does Council agree with the prioritization that has been given to implementation programs thus far?

Question 3: Are there any programs/projects the Council wishes to prioritize earlier than originally envisioned with the adoption of the General Plan, other than those identified above that are in process?

Question 4: Are there any new programs/projects that the Council believes would help the City to achieve the goal of becoming a Complete Community as laid out in this report?

ECONOMIC AND FISCAL IMPACTS

There is no direct economic or fiscal impact associated with the discussion of Complete Communities. However, implementation of many of the above listed General Plan components will require further discussion on resource allocation and funding to support such priorities. This discussion and Council prioritization of work efforts is the first step in determining whether additional resources are necessary to implement the programs/projects identified.

PUBLIC CONTACT

While there was no specific outreach associated with this particular work session, there was a tremendous amount of community outreach incorporated as part of the Hayward 2040 General Plan update process, which helped identify the City's goals, actions and policies for the City of Hayward through the year 2040.

NEXT STEPS

Following this work session, staff will incorporate Council's feedback, assess existing resources and/or identify additional resources needed, and develop a Complete Communities Strategy Two-Year Action Plan for Council consideration, adoption and inclusion in the FY 2018 budget process.

Prepared by: Sara Buizer, AICP, Planning Manager

Recommended by: David Rizk, AICP, Development Services Director

Approved by:



Kelly McAdoo, City Manager