PEDESTRIAN ENVIRONMENTS & SHARED STREETS
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PRINCIPAL CONSIDERATIONS

Pedestrian Priority. This chapter describes features that delineate where pedestrians can walk safely and enjoy shared experiences. If appropriately designed, these features make the pedestrian experience more attractive. There are numerous co-benefits associated with enhanced pedestrian environments. Attractive environments are foundational to Downtown’s retail success and as a residential neighborhood. The walking experience is also an integral part of transit use, as every trip begins “on foot.”

Because Downtown’s primary function is as a place to engage in social, cultural and commercial activity, special emphasis needs to be given to the safety, comfort, and convenience of pedestrians. Automobiles need to be accommodated, but negative impacts from cars on pedestrians should be mitigated.

Enhancing the Pedestrian Realm. In Downtown, the factors that generally define what is -- and what is not -- part of the pedestrian realm are curbs and buildings. Buildings define the outer edge of most sidewalks. While private uses, pedestrian-friendly building design, and midblock pedestrian connections are extremely important, private building and site attributes are controlled by the City’s Zoning Ordinance and the Downtown Design Guidelines.

Within City-controlled rights-of-way, the location and shape of curbs strongly influence pedestrian safety and comfort -- and how public space can be used. Spaces that are behind curbs are generally the most protected spaces for pedestrians, and are where pedestrian amenities and landscaping may be placed. While the SOSIP seeks to optimize pedestrian space, curbs must also be positioned to provide adequate dimension for the safe movement of motorized vehicles and bicycles.

Beyond the curb, pedestrian activity is extended into roadways lanes and intersections through the use of crosswalks, medians, and special features. Jaywalking aside, these are the places where pedestrians and cars share the same space and injury to pedestrians is of greatest concern. The design and placement of crosswalks, medians, and special features must address pedestrian safety but also pedestrian convenience and accessibility. Pedestrians often react to overly circuitous routes with frustration and jaywalking.

Context-Sensitive Design. Older urban settings often have narrow streets and high pedestrian volumes, conditions that may not be fully recognized by modern street design manuals that were developed with suburban growth in mind. By allowing narrower lanes and tighter intersections, Berkeley has joined other cities like San Francisco and Portland, Oregon, where similar pedestrian-oriented standards have been adopted, and balanced mixed-mode approaches are becoming accepted more broadly as evidenced by ITE’s Context Sensitive Solutions in Designing Major Urban Thoroughfares.

Facing Page: Pedestrian Realm. The experience of walking and sitting will play a critical role in Downtown’s success as a destination – and as a place to live and work. Staff photo.
Pedestrian Safety & Lane Widths. Narrower travel lanes can make streets safer for pedestrians by slowing traffic, which significantly reduces the severity of injuries. In fact, the likelihood of fatal or serious pedestrian injuries becomes very low when vehicle travel speeds fall below 20 miles per hour (Source: Anderson, McLean, Farmer, Lee and Brooks, Accident Analysis & Prevention Study, 1997). At the same time, travel lanes should not be made so narrow that wide vehicles such as buses and trucks might conflict with cars, and where motorists cannot safely pass bicyclists, particularly when motorized vehicles are traveling significantly faster.

Because the widths of rights-of-way are fixed, sidewalks and landscaping widths are what remain after vehicle and bicycle lanes are accounted for. Traffic modeling for the Downtown Area Plan’s EIR has demonstrated that travel lanes can be eliminated on several street segments without significantly increasing congestion. On-street parking can also be reconfigured to make more space available for pedestrians.

Pedestrian Crossings. At the corners of intersections, tighter curb radii bring curbs closer to the moving vehicles. Tighter curb radii and pedestrian refuge areas slow vehicle travel, shorten pedestrian crossing distances and increase the ability for pedestrians and motorists to see each other. While tighter curb radii may make turns more difficult for the longest vehicles, wider curb radii come at the expense of the pedestrian and tighter curb radii are more appropriate to Downtown.

Curb Extensions. Curb extensions extend the sidewalk into the parking lane to reduce pedestrian crossing distances, slow traffic, and improve pedestrians’ ability to see oncoming motorists and vice versa. Curb extensions are also called “bulb-outs” and “bump-outs” to describe their shape. In addition to enhancing pedestrian safety, curb extensions can contain street furnishings, green infrastructure measures, and other amenities. Curb extensions also make it easier to have two curb ramps at each corner.

Shared Streets. There are also “shared streets” or plazas where pedestrians, motorists and bicyclists share the same plaza hard-scape. Shared streets are common in Europe.

Figure e.1. Lane Widths & Traffic Calming. Motorists tend to speed up when travel lanes are excessive or few landscaped islands are present.
and are being seen increasingly in the United States. In these settings, the comfort and safety of the pedestrian is emphasized through the use of materials and design. Vehicles move very slowly and pedestrians clearly have the right of way. Shared streets are appropriate where pedestrian use of the space has priority over vehicles, and where citywide impacts on vehicle through-traffic have been addressed.

**Landscaping.** Landscaping and special features can also limit where pedestrians move. In addition, landscaping is an integral part of the pedestrian environment because of trees and landscaping create favorable micro-climates and make places more attractive.

**Bus Service.** Bus operations and the need for safe boarding and alighting at bus stops should be considered and addressed. AC Transit staff and “Designing with Transit” should be consulted during design development.

**Relationship to Other Documents.** Note that the following recommendations highlight and augment Berkeley’s Pedestrian Master Plan, Bicycle Master Plan, and Municipal Code. Users of this document should refer to these other documents for additional background and recommendations. A few recommendations made by the SOSIP are inconsistent with these other documents because of Downtown’s unique needs and setting. Unless and until adopted by Council as formal amendments to the Pedestrian and Bicycle Master Plans, SOSIP recommendations shall be considered advisory.

### POLICIES AND ACTIONS

**Policy 2.1, Pedestrian Realm.** Enhance and increase protected areas for pedestrians, while promoting bicycling and accommodating motor vehicles.

1. Pedestrians and persons using wheelchairs shall have an uninterrupted path of travel. On commercial streets, maintain a 6-foot wide unobstructed path free from fixed features and moveable furniture.

2. Position transit shelters, newsracks, trash receptacles, and other obstructions to facilitate access and ease of pedestrian

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*Figure e.2. Travel Speeds & Pedestrian Safety. The rate and severity of pedestrian injuries goes up as the speed of traffic increases.*
movement. Where space behind such features is unusable, it should be minimized except for maintenance needs.

c. Expand areas available for pedestrians (and bicyclists) by repurposing unnecessary and excessive motor-vehicle travel lanes (i.e. where unacceptable levels of congestion and unsafe conditions would not result). Lane eliminations proposed by the SOSIP were evaluated by the 2009 Downtown Area Plan EIR, and are the basis for the schematic design concepts presented under "Major Projects." However, travel lanes should only be eliminated after traffic modeling and environmental analysis have determined that pedestrian/bicycle safety, transit operations, and traffic considerations has been adequately addressed.

d. For pedestrian and bicycle improvements, minimum travel lane widths may be narrower Downtown than is generally allowed in Berkeley. Doing so will make it possible to widen sidewalks, increase planting and add urban amenities. Allow travel lanes as narrow as 10 feet on side streets and 10.5 feet on major streets (such as Shattuck, University, Oxford-Fulton, Martin Luther King Jr. Way), except where needed to accommodate buses -- in which 11 feet should generally be provided. Recommendations for bicycle lanes should also be considered (see Bicycle Network Facilities). Parallel parking lanes may be between 7 to 8 feet in width, and should be 8 feet where the doors on parked vehicles are likely to conflict with bicycles; parking lanes must always be 8 feet alongside Class II bicycle lanes.

e. After anticipated parking and transit programs become effective, convert diagonal parking to parallel parking to widen sidewalks and increase landscaping in locations with high levels of pedestrian activity. In the near-term, on-street parking that is lost because of street and open space improvements should be replaced with additional on-street parking within a reasonable walking distance (as depicted in Major Projects).

f. Consider the use of parking lanes for other activities in areas of high pedestrian activity and when parking demand is addressed. Examples include weekend dining, occasional street fairs, and temporary art installations. Activities should be separated from travel lanes with substantial planters, railings, or other elements. Elements should also be designed to alert motorists and prevent pedestrians from stepping into travel lanes.

Policy 2.2, Pedestrian Crossings & Traffic Calming. Enhance safety where pedestrians cross traffic through the use of crosswalks, pedestrian refuges and traffic calming features.

a. Curb radii as tight as 10 feet should be allowed in the Downtown, and curb radii should generally not exceed 15 feet. Where vehicle turning remains a concern, the "effective" turning radius (and not solely the curb radius) should be considered, such as: where parking lanes are clear near intersections, or where larger trucks can safely move into other lanes on an occasional basis. Address bus operation needs during design development. Where a larger curb radius must be used, consider using reflectors or special paving to delineate a 10-foot radius to discourage high-speed turns by vehicles.

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Figure e.3. Curb Radii & Bump-Outs. At intersections, large sweeping curbs allow faster and less safe traffic speeds. Tighter curb radii help slow traffic. Tighter radii also reduce the crosswalk distances in which pedestrians are exposed to traffic, especially when combined with corner "bump-outs" or curb extensions.
b. Consider adding curb extensions or “bulb outs” at intersections, especially intersections with higher rates of collisions involving pedestrians, but only in ways that allow passengers to safely board and alight at bus stops.

c. Also consider midblock curb extensions where pedestrians frequently jay walk, where midblock passages meet streets, and in locations that would improve access to Shattuck “park blocks.” Note however that midblock crosswalks should generally be avoided except where higher levels of use can be expected and safety can be maintained. Ramps should accompany midblock crosswalks and consideration should be given to traffic signals, pedestrian-activated flashing beacons or similarly effective alternatives. Maintain bus stops with sufficient dimension for passengers to safely board and alight.

d. Curb extensions that are used for pedestrian crossings or seating should be accompanied by metal safety bollards or other safety features. Curb extensions should generally include landscaping, and might also contain street trees, furnishings, and features to capture urban runoff (see Watershed Management & Ecological Design).

e. Curb extensions should be designed to provide adequate drainage and adequate access for transit vehicles, emergency vehicles and fire hydrants. As indicated in the City’s Pedestrian Master Plan and accompanying environmental documents, the City shall not construct bulb outs that extend into travel lanes, including bicycle lanes.

f. Temporary curb extensions may be considered where impacts and benefits are unclear. Temporary curb extensions can be created through the use of striping, plastic bollards and raised reflectors, while maintaining accessibility for people who are disabled.

g. Consider the use of “neck downs” or “chokers” to clearly communicate pedestrian crossings to motorists, and to reduce the perceived width of the street and thereby slow traffic. Neck downs are created when a curb extension is paired with another curb extension across the street.

h. Medians should generally be provided on streets that have four or more travel lanes, to give pedestrians a place of refuge and offer opportunities for landscaping and urban run-off features. Crosswalks should “pass through” medians (with a raised curb on both sides), to provide a pedestrian refuge.

i. Medians should generally be avoided on streets that have fewer than four travel lanes, except when used to slow traffic at crosswalks, since motorists tend to go faster when they are separated from opposing traffic lanes. To maintain clear passage for emergency vehicles, and medians can also necessitate wider travel lanes that increase vehicle speeds and crossing distances.

j. Corner islands that provide right-turning “slip lanes” should be avoided with pedestrian crosswalks because of motorist navigate these sweeping turns at higher speeds. Consider elimination of the slip lane at Bancroft and Fulton. Where existing slip lanes will remain, features should be added to reduce vehicle speeds or
Figure e.6. Existing & Potential Connections on Private Property. Midblock connections complement public streets & open space, by shortening walking distances and providing courtyards. The types of connections illustrated could be encouraged using development standards and design guidelines.
bring vehicles to a full stop before proceeding.

k. Perpendicular ramps allow pedestrians and people in wheelchairs to access the sidewalk perpendicular to stopped traffic, and to enter into the crosswalk directly in their line of travel. Perpendicular curb ramps are preferred over the use of a less-protected single ramp.

l. Consider additional crosswalks in Downtown locations where significant numbers of pedestrians cross. Crosswalk design should follow the City’s Pedestrian Plan Design Guidelines, wherein high levels of pedestrian activity should use high visibility treatments, such as “ladder style” crosswalk markings.

m. Crosswalks with high levels of pedestrian activity should have “ladder style” crosswalk markings.

n. Flashing beacons or similarly effective devices should accompany midblock crosswalks and unsignalized intersections with higher levels of pedestrian and/or bicycle traffic.

o. Pedestrian activated (“push-button”) light signals should be used at intersections where priority should be given to pedestrians on a more occasional “on-demand” basis. All push-button activated flashing beacon locations should have “Cross with Caution” signs in view of the pedestrian who is about to cross, and be accompanied by “audible pedestrian signals” (APS).

**Policy 2.3, Shared Streets.** Consider shared streets as a traffic calming device where a plaza setting would best serve the needs of pedestrians, while allowing access by small volumes of slow auto or bus traffic. Also consider shared street treatments where significant numbers of bicycles and motor vehicles mix but there is insufficient room for a separated bike lane.

a. The chapter on Major Projects recommends plazas with transit facilities and slow traffic on the east side of Shattuck Square and on Milvia in front of the Civic Center Building.

b. Consider shared street treatments on Allston Way, where high levels of bicycle and pedestrian traffic are present but access by motor vehicles should be provided. Shared street features might also be appropriate to portions of Center Street and would be essential for slowing traffic to safe speeds if a decision is made to remove bicycle lanes.

c. Shared streets should be designed to alert drivers, pedestrians, and bicyclists that they are leaving a conventional street environment and entering a pedestrian-priority space by using special paving and vertical deflection features (gradual enough to avoid injury to persons with disabilities who are riding in vehicles), and other indicators. To maintain plaza paving throughout, bollards and concrete planters should be used instead of curbs, to protect buildings, landscaping and street furnishings.

**Policy 2.4, Connections & Amenities on Private Property.** Consider ways to enhance the pedestrian realm beyond what can be attained through public improvements.
a. While the SOSIP addresses public improvements on City land, the public realm is affected by the way buildings address public spaces and by public access to private plazas and midblock passages. Consider revisions to Berkeley’s Zoning Ordinance and Downtown Design Guidelines to encourage:

- publicly accessible private plazas and midblock passages;
- window and entry patterns that provide a sense of inhabitation and discourage inappropriate behavior;
- private activities that help make streets and public open spaces more vibrant; and
- solar access to major public open spaces.
SHARED STREETS

A shared street removes features that typically segregate vehicles from each other and from pedestrians, so that all road users are more equal with each other. There are fewer signs, lane markings, and traffic lights, which de-emphasize rigid expectations that cars and people can’t mix.

Where applied, the result has not led to more accidents but rather fewer accidents result because everyone yields. Cities that have embraced shared space concepts have witnessed significant decreases in crashes—up to 40%-60% fewer crashes. People entering shared streets experience an elevated sense of awareness. Eye contact increases and motorists modulate their speed to fit conditions.

A European Union pilot of seven shared street projects showed improvements in safety, livability, economic development, and sense of place. Streets serve an important social function as they are the principal space in which we engage other people, but modern practices have focused instead on how people—and especially motorists—can move through spaces quickly and without intermingling. The ideal has been to keep pedestrians completely separate from traffic, which has resulted in faster vehicle speeds and long circuitous routes for pedestrians. Shared streets maintain some separation (with emphasis on safe zones for people with disabilities) but give emphasis to readily understood social norms and human interaction.

In addition, vehicle travel times on shared streets appear to be less than with conventional engineering. While yielding to pedestrians slows motorists, long waits at traffic lights are eliminated.

Where shared streets have been implemented, they were not readily accepted. Sophisticated modeling, pilot projects, and short-term trials were needed to eliminate objections—a long-term process that required a shared commitment to satisfy functional and safety concerns without presupposing a standard solution.

Figure e.8. Mixing Modes. Plaza-like features can be used to pedestrianize spaces while also allowing bicycles and motor vehicles. Motorists are presented with conditions that cause them to slow and yield as needed.