

5 | Pedestrian Facilities

THE NUMBER OF PEOPLE IN CONTRA COSTA for whom walking is the main form of transportation is currently very small. At the same time, lack of organized advocacy for pedestrians—except for and among special-need populations such as schoolchildren, seniors and the disabled—means that walking is often underappreciated. The importance of providing facilities for walking, however, should not be diminished. We are all pedestrians for at least part of all trips, whether that is walking through a parking lot or to a transit station or strolling in a downtown or in a park. This chapter begins with an overview of pedestrian facilities in Contra Costa; describes the types of pedestrian areas that the Authority will prioritize for purposes of funding; provides a primer on the planning of pedestrian facilities; discusses the main types of facilities that local jurisdictions can implement; and offers resources for local agencies on the planning and design of pedestrian facilities.

OVERVIEW OF FACILITIES IN CONTRA COSTA

In most communities in the country, the character and extent of pedestrian facilities available in an area usually reflects the time period

in which the area was developed. In Contra Costa, the oldest European settlements tend to be around the downtowns of the bay ports established in the second half of the 19th century: Richmond, Pinole, Hercules, Martinez, Pittsburg and Antioch. As mentioned in chapter 2, “Existing Conditions,” these communities feature many of the critical ingredients of a pedestrian-friendly environment. Built according to the urban forms of that era, they tend to feature short blocks on a grid, higher-density development, a mix of uses and activities, visually diverse and interesting streetscapes, slower vehicle speeds, frequent crosswalks and sidewalks on almost every block. The same is true for those areas developed during the heyday of the electric trolley, up to the 1940s; these include parts of El Cerrito, Richmond, San Pablo and the downtowns in cities such as Concord and Walnut Creek.

The design of areas developed after World War II increasingly assumed the private automobile as the primary method of travel and an increasingly smaller role for walking and transit. In addition, parts of some of the older districts have been “retrofitted” to facilitate car tra-

vel. These newer and retrofitted areas are marked by low-density development and segregated land uses. These characteristics are perhaps the strongest detractors to walking, as they increase greatly the distances among destinations and activities. A notable exception is downtown Walnut Creek, which with its pedestrian-oriented design, “park once and walk” design, has become a significant regional draw for shoppers and other visitors.

Residential neighborhoods in these areas feature discontinuous and circuitous street networks, good for discouraging vehicular traffic but inconvenient for walking for reasons other than exercise. Some neighborhoods were intentionally developed without sidewalks to keep costs down, maximize lot size or attempt to preserve a rural or semi-rural atmosphere. Even when they feature sidewalks, these neighborhoods tend to lack pedestrian connections to adjoining areas and are sometimes even separated by walls or fences. Instead, neighborhoods are connected to each other by wide, heavily trafficked arterial streets, which are uncomfortable for pedestrians, especially seniors, to cross. On these arterials, sidewalks are sometimes discontinuous or built immediately next to the roadway (with no separation from high-speed traffic); in some cases, there are no sidewalks or shoulders. Commercial developments along these arterials are designed more for the car than the pedestrian. They are set back far from the street and separated from each other by large parking areas.

Retrofitting post-WWII streets and neighborhoods to accommodate pedestrians is a major challenge to improving walkability in Contra Costa, as in much of the country. Nonetheless, as mentioned in chapter 2, “Existing Conditions,” local jurisdictions are encouraging more traditional development patterns, recognizing their potential to create environments that are more attractive for pedestrians.

Contra Costa is also blessed with a large number of multi-use trail segments, which serve both transportation and recreation functions. The trail systems in Contra Costa are shown on the countywide bicycle network maps and described in Chapter 6, “Bicycle Improvements,” but include the San Francisco Bay, Ridge, Ohlone, Iron Horse, Delta de Anza, Lafayette-Moraga, Mokelumne Aqueduct, Marsh Creek and Big Break trails.



PRIORITY LOCATIONS

The Authority does not plan, design or build pedestrian facilities; these are roles of the local jurisdictions. Instead, the Authority’s roles are to serve as a clearinghouse on information and resources, to coordinate multi-jurisdictional planning and, more importantly, to provide funding to local jurisdictions for the implementation of facilities.



Unfortunately, funding for pedestrian facilities, as for other transportation improvements, is limited and cannot satisfy more than a fraction of local needs. Most of the Authority's funding sources and grant cycles see intense competition among worthy projects, not to mention among jurisdictions. To prioritize its investments, the Authority has decided to give

priority under its funding sources for capital pedestrian projects to proposed projects in three types of priority locations:

- Pedestrian-oriented districts
- Routes to transit
- Routes to other key activity centers.

These priority locations are defined in more detail below. Chapter 9, "Implementation," describes in more detail the process that the Authority will use to prioritize pedestrian and bicycle projects for funding. Pedestrian priority location should be an especially important prioritization criterion but is not the only one; other criteria will be safety concerns, expected demand, complexity, cost-effectiveness and public support.

This prioritization focus on defined areas and access to destinations reflects the fact that pedestrians have a much more limited access and mobility range than other transportation users. Unlike bicyclists and drivers, who use streets and trails to travel between cities throughout the county, pedestrians do not typically travel long distances. Walk-

ing does not rely on a countywide network of facilities but instead is clustered in small, local, accessible nodes and short, direct access routes. Pedestrians, however, are able to expand their access range greatly by walking to transit. The pedestrian priority locations follow from this definition of walking.

Pedestrian-oriented districts

Pedestrian-oriented districts are areas where walking receives relatively high priority and importance, either by practice or policy. Such areas exhibit a range of land use, urban form, development and transportation characteristics that welcome and encourage walking. Generally, pedestrian-oriented districts tend to have:

- A well-connected street network with sidewalks and slower motor-vehicle speeds
- A moderate-to-high-density mix of residential, commercial and civic uses
- Buildings close to the street and to each other, forming a continuous or nearly continuous "street wall"
- Frequent, well-marked and visible crosswalks, and traffic signals that provide adequate crossing time and frequent crossing phases for pedestrians
- Retail and other active uses occupying the ground floor of buildings, with building entrances fronting the street rather than a parking lot
- Building facades with visually interesting architectural details
- Lively and animated streetscape, with street trees, sidewalk seating, decorative street lamps and other amenities
- Few auto-oriented uses such as drive-throughs and car dealerships, and most parking provided in the form of on-street spaces, garages or surface lots in the rear of sites
- Frequent transit service and convenient transit connections
- Bicycle lanes, parking racks and other facilities for bicyclists

Hercules Waterfront District

The city of Hercules is refashioning its formerly industrial waterfront into a walkable, mixed-use, neo-traditional neighborhood to serve as the downtown for the city. At build-out, the 167-acre site could include up to 1,224 residential units, 42,000 sq. ft. of retail space, 81,000 sq. ft. of office space and 134,000 sq. ft. of flexible space, its uses dictated by market demands.

Development of the site is being guided by the *Waterfront District Master Plan*, adopted in 2000, which defines the permitted land uses, types of buildings and architectural character for each of five sub-districts. Planning efforts have focused on implementing “new urbanist” and “smart growth” principles—including a mix of land uses, narrow streets in a grid and short blocks—to create a pedestrian-oriented community. The district will include open space areas, trails, a pedestrian bridge over railroad tracks to Hercules Point and an inter-modal transit station featuring a ferry terminal, a new rail stop for Amtrak’s Capitol Corridor service and a bus stop.

- ▶ www.ci.hercules.ca.us/index.aspx?page=235
- ▶ www.ci.hercules.ca.us/index.aspx?page=229

For the Authority’s purpose of prioritizing funding using the pedestrian-oriented district criterion, a proposed project must be located in an area in Contra Costa defined in a general plan or specific plan as a downtown, central business district or other location where walking is explicitly promoted through meaningful supportive land use policies. Using this definition, all or almost all jurisdictions in Contra Costa have identified pedestrian-oriented districts. Appendix B summarizes the planning policies and efforts of every local jurisdic-

tion in Contra Costa to identify priority-oriented districts within their jurisdiction.



Routes to transit

The ability to reach public transit on foot is essential for pedestrians because, by walking to buses and trains, they can travel far beyond their normal range. Improving walking access to transit can also increase transit ridership, another worthwhile objective that would reinforce the Authority’s investment. For the Authority’s purpose of prioritizing funding using this criterion, a proposed pedestrian facility must be oriented to facilitate access to and be located within one-half mile—the maximum distance that people are generally willing to walk—of one of the following:

- A stop in Contra Costa serving a WestCAT, Tri-Delta Transit, County Connection, AC Transit, Golden Gate Transit or school bus route.

- The Amtrak station in Antioch/Pittsburg, the Capitol Corridor station in Richmond or Martinez, or the planned Capitol Corridor station in Hercules (provided it is under development).
- The El Cerrito Plaza, El Cerrito del Norte, Richmond, Orinda, Lafayette, Walnut Creek, Pleasant Hill, Concord, North Concord/Martinez or Pittsburg/BayPoint BART station, or one of the two planned eBART stations, at Railroad Avenue in Pittsburg and east of Hillcrest Avenue in Antioch.
- One of the planned ferry terminals in Richmond, Hercules or Antioch/Martinez (provided it is under development).

Routes to other activity centers

Every community has special attractions, popular destinations and activity centers. Safe, useful, convenient and pleasant pedestrian facilities to, near and around these destinations encourages people to walk to them more often and makes them safer and more inviting places. Such facilities also benefit drivers, cyclists and transit riders once they reached the destination.

For the Authority's purpose of prioritizing funding using this criterion, a proposed pedestrian facility must be oriented to facilitate access to and be located within one-half mile of one of the activity centers listed below:

- Significant employment, shopping or commercial center
- School
- Significant public venue, including libraries, community centers, cultural centers, sports facilities, and regional, state and federal government offices serving the walk-in public
- City, countywide or regional trail system
- City, county, regional or state park

The determination of what constitutes a "significant" activity center will need to be made on a case-by-case basis by reviewers of projects submitted for funding consideration. Projects closer to the activity center would receive greater consideration.

PLANNING FOR PEDESTRIANS

While this chapter is dedicated to facilities for pedestrians, improved facilities are necessary but not sufficient for walkability. Possibly more important are land use and development patterns, since pedestrians are much more sensitive to distances and the quality of the environment through which they travel than other transportation users. The Measure J Growth Management Program recognizes this by requiring local jurisdictions to adopt policies and standards for the design of new developments that are pedestrian- and bicycle-friendly. Chapter 8, "Other Tools for Local Agencies," references resources on the planning and design of developments that support nonmotorized transportation while Appendix B summarizes policies, guidelines and standards used by the County and each of the 19 cities and towns to address walking and bicycling concerns as part of the review process for development projects. (For each jurisdiction, Appendix B also summarizes pedestrian planning efforts and any areas where local policy explicitly encourages and prioritizes walking.)

To move about safely and comfortably, pedestrians need well-designed and maintained walkways and crosswalks that provide access to jobs, homes, shopping, schools, transit stations, parks and other common destinations. Walkways should be sufficiently wide, free of obstructions and buffered from fast-moving traffic. Crosswalks should be well-marked and visible, particularly to motorists. Crossing distances should not be unduly long and the timing and phasing of traffic signals should allow adequate crossing time for pedestrians. Intersections should have curb ramps on all corners. Street-

lights might be needed in some locations to improve nighttime safety and visibility.



Wheelchair users and other persons with disabilities are particularly sensitive to conditions of the public right-of-way. This is recognized by Title II of the Americans with Disabilities Act (ADA) of 1990 and Section 504 of the Rehabilitation Act of 1973, landmark pieces of legislation that require that public facilities be accessible to persons with disabilities. Court decisions have ruled that this protection extends to walkways. As one result, cities, counties and other government agencies now routinely include curb ramps in all new sidewalk construction and have undertaken programs to retrofit existing sidewalks that do not have curb ramps.

Accommodating people with disabilities should be a primary objective of any newly planned pedestrian facility. Facilities that accommodate the disabled improve the walking experience for all. Curb ramps, for example, are helpful to parents with strollers, delivery persons pushing carts and children on bicycles. Wide walkways al-

low people to stroll side-by-side and to pass others. Smooth surfaces reduce the risk of people tripping, a hazard particularly for seniors. Chapter 8, “Other Tools for Local Agencies,” contains a section on ADA design guidelines for public right-of-ways, including references for specific guidance resources.

Walkinginfo.org

Walkinginfo.org is a website of the Pedestrian and Bicycle Information Center (PBIC), a national clearinghouse for information about walking and bicycling. The website has an extensive section on the design, engineering, operation and maintenance of pedestrian facilities, organized into 11 subsections: roadway and pedestrian facility design, trails, street crossings, traffic calming, traffic management, on-street parking enhancements, school zone improvements, designing for special pedestrian populations, intelligent transportation system (ITS) technologies, examples and case studies, and resources and research.

- ▶ **Walkinginfo.org section on design of pedestrian facilities:**
www.walkinginfo.org/engineering

FHWA manual on pedestrian planning

This wide-ranging manual from the Federal Highway Administration (FHWA) covers most aspects of pedestrian planning. Chapter 1 provides tools to identify problems with walking conditions while Chapter 2 discusses ways to build support for pedestrian improvements, including case studies from around the country. The manual outlines solutions to problems using the “four E’s” (engineering, education, enforcement and encouragement) in chapter 3, and answers frequently asked questions about pedestrian planning and lists additional sources of information (chapter 4). The last section (chapter 5)

is a collection of fact sheets, checklists and other “resources sheets” on various pedestrian planning topics.

- ▶ **A Resident’s Guide to Creating Safe and Walkable Communities:**
safety.fhwa.dot.gov/ped_bike/ped/ped_walkguide

Sample pedestrian plans

Because of its countywide scope, the CBPP is not meant to identify specific pedestrian problem locations and improvements. For this, local agencies will need to develop their own, detailed pedestrian master plans. While pedestrian planning is a relatively young discipline, there is a growing list of pedestrian plans prepared by other jurisdictions that local agencies in Contra Costa can use as examples. The following webpage lists pedestrian plans from around the country that are generally recognized as exemplary in the profession, including a dozen prepared at the municipal level by cities of various sizes.

- ▶ **Sample pedestrian plans, from walkinginfo.org:**
www.walkinginfo.org/develop/sample-plans.cfm

Template for a pedestrian plan

The North Carolina Department of Transportation has prepared an extensive template for the organization and content of a local pedestrian or bicycle plan, covering all issues that could be expected to be addressed in such a plan. The department developed the template to help municipalities meet certain state requirements. Because it is general in nature, however, it is appropriate for use by local agencies in Contra Costa.

- ▶ **Template for Bicycle and Pedestrian Plans:**
www.itre.ncsu.edu/PTG/BikePed/NCDOT/documents/2007documents/07FullTemplate.pdf

Pedestrian audits

Pedestrian audits are tools, often in the form of checklists, used to examine and evaluate the quality of the walking environment. The general objectives of a pedestrian audit are to identify needs and concerns related to pedestrian safety, access, comfort and convenience and, ideally, suggest potential solutions. Audits may focus on a specific geographic area, particular route or type of facility (for example, walkways, crosswalks, intersections, bus stops or school zones). Also, they may be either formal—conducted by a multidisciplinary team of trained professionals following a standardized set of procedures—or informal. Below are references to various types of pedestrian audits.

- ▶ **PedSafe Pedestrian Audit:** www.pedbiketrans.asn.au/rframset.html

Walkability Checklist: How Walkable is your Community?: drusilla.hsra.edu/cms/downloads/walkabilitychecklist.pdf

Walking and Bicycling Suitability Assessment (WABSA):
www.unc.edu/~jemery/WABSA/history.htm

Path Environment Audit Tool (PEAT)” (for trails and paths):
www.activelivingresearch.org/node/10652

Analytic Audit Tool and Checklist Audit Tool for walkable and bikeable environments: www.activelivingresearch.org/node/10616

Pedestrian districts in the Bay Area

MTC commissioned the “Pedestrian Districts Study” in 2006 to encourage and improve pedestrian planning in the Bay Area. The goal of the study is to explore the use of pedestrian districts as a concept for creating better pedestrian environments in the region. Through the development of the pedestrian district typologies and real-life case studies, the study identifies the types and costs of pedestrian facilities that have the greatest impact on improving the pedestrian environment.

► MTC’s Pedestrian Districts Study:

www.mtc.ca.gov/planning/bicyclespedestrians/Ped_Districts/index.htm

Tucson sidewalk inventory

The Pima Association of Governments conducted a detailed assessment of sidewalk connectivity and accessibility along the major roads in the Tucson (AZ) region. The key objectives were to identify the gaps and barriers in the sidewalk network and to determine sidewalks that do not meet ADA standards. Based on the inventory results, the Association created a GIS-based map and database of sidewalk segments, which now serve as tools for the development, prioritization and programming of sidewalk improvements within the region. While this inventory was conducted at the regional level, the approach is one that can be applied at the local level.

► Tucson Region Sidewalk Inventory Project:

www.pagnet.org/documents/Pedestrian/SidewalkInventory2005.pdf

DESIGNING PEDESTRIAN FACILITIES

Through a pedestrian planning process, local jurisdictions can identify the needs and concerns of pedestrians in their community. Some needs can be addressed through non-capital projects, namely educa-

tion, encouragement and enforcement programs. These are addressed in Chapter 7, “Support Programs.” Some needs, however, are best addressed through engineering solutions, by installing or improving facilities for pedestrians. The main types of pedestrian-oriented capital projects that municipalities should consider implementing are:

- **Walkways:** These are the basic element of the pedestrian network. Sidewalks, trails and other types of walkways should, at a minimum, have a clear path wide enough to accommodate the widest wheelchair or baby stroller; in busier areas, they should be wide enough to allow people to walk side by side and to pass other pedestrians and wheelchair users. Sidewalks along arterial streets should, ideally, have a landscaped strip to serve as a buffer from fast-moving traffic and to enhance the aesthetics of the corridor. Driveways across walkways should be minimized and should be made safer through the use of adequate sight distances, signage, “speed tables” where appropriate (these raise the driveway to the level of the sidewalk) and other methods; in older, pedestrian-friendly districts, new development provides opportunities to group driveways, particularly on arterials.
- **Curb ramps:** These are essential for disabled access and should be part of every new sidewalk installation at street crossings. Crossings that lack curb ramps should be retrofitted as part of a comprehensive municipal program to bring public facilities into compliance with the American with Disabilities Act (ADA).
- **Safer intersections:** The design of intersections is critical since this is where most traffic collisions involving pedestrians occur. At a minimum, intersections should feature clearly marked crosswalks that are highly visible to motorists. Intersections can also be made safer through the use of speed tables, or by reducing the crossing distance through the use pedestrian refuge islands and curb ex-

tensions. Relatively inexpensive safety interventions include signs, signals or lights to warn motorists of the presence of crossing pedestrians; removing sight obstructions, such as parked cars, signs and overgrown landscaping; longer, more frequent and automatic (rather than pedestrian-activated) traffic-signal crossing phases; and audible pedestrian countdown signals.

- **Traffic calming:** Traffic calming is meant to improve conditions for pedestrians and bicyclists, especially in residential areas, by reducing traffic speeds and volumes. There are many different types of traffic calming devices and measures, geared toward various needs and applications. Common ones include: traffic circles or roundabouts, mid-block and intersection bulb-outs or curb extensions, traffic diverters, raised crosswalks (also known as speed tables), visual street-narrowing techniques and the strategic timing of traffic lights. Traffic calming measures should be implemented district-wide rather than in isolation and—in the case of sidewalk bulb-outs, for example—should not interfere with bicycle travel.
- **Direct connections:** As mentioned earlier in this chapter, much post-World War II development segregates land uses, has limited access points and is often separated by walls, freeways and other barriers from other development. Providing direct pedestrian connections by way of cut-throughs, over- or undercrossings and other shortcuts makes walking (and bicycling) more convenient and, in some cases, even viable.
- **Streetscape improvements:** In downtowns and other areas with higher pedestrian activity, a higher level of attention should be paid to the pedestrian environment. Potential streetscape improvements include street trees and other landscaping, special paving for sidewalks and crosswalks, public art, benches, trash receptacles and bus shelters. Pedestrian-oriented streetlights are es-

pecially important, not only to provide comfort and convenience but also to increase traffic safety and pedestrians' sense of personal security with respect to real or perceived crime hazards.



The rest of this section provides references to guidelines for the design of these and other pedestrian facilities. Chapter 8, “Other Tools for Local Agencies,” contains two additional design-related resources: MTC’s checklist and accompanying

guidance document for accommodating pedestrians and bicyclists in the planning and design of broader capital transportation projects; and a section on design guidelines for ADA-compliant public right-of-ways. The guideline resources referenced below extend beyond minimum ADA requirements to promote pedestrian facilities that are not only accessible but also safe, convenient and attractive.

PEDSAFE

In 2002, the FHWA published the “Pedestrian Facilities User Guide—Providing Safety and Mobility.” It describes guidelines and estimates costs for nearly 50 engineering countermeasures or treatments to improve pedestrian safety. It also includes two matrices that related the treatments to specific performance objectives and types of collisions. PEDSAFE updates and translates this information into interactive matrices and an online “Selection Tool” that allows users to identify the most appropriate treatments for a given safety problem and site characteristics. The website also includes a page on “Recommended Guidelines/Priorities for Sidewalks and Walkways” and safety case

studies organized by geographic location and type of countermeasure.

► **PEDSAFE: Pedestrian Safety Guide and Countermeasure Selection System:** www.walkinginfo.org/pedsafe/index.cfm

► **Recommended Guidelines/Priorities for Sidewalks and Walkways:** www.walkinginfo.org/pedsafe/moreinfo_sidewalks.cfm



Portland (OR) pedestrian design guidelines

The City of Portland developed guidelines and standards for pedestrian-oriented design through a consensus-building process involving all the city programs and agencies responsible for the form and function of the public right-of-way. The manual, which begins by establishing a set of overarching principles of good pedestrian design (p 3), is divided into four main sections, covering guidelines and standards for sidewalks (section A), street corners (B), crosswalks (C) and pathways and stairs (D), plus an appendix on construction materials. The

manual is extensive, with detailed numerical standards and clarifying tables and illustrations. It includes an index for easy reference.

► **Portland Pedestrian Design Guide:** www.portlandonline.com/Transportation/index.cfm?c=34955

Seattle right-of-way manual

The key chapters of Seattle’s “Right-of-Way Improvements Manual” are chapter 4, which provides technical information and design criteria for specific elements of the street right-of-way, and chapter 6, which defines streetscape design guidelines. The website for the manual features an illustration with clickable text links of a typical streetscape scene which allows users to access information on design guidelines and criteria quickly.

► **City of Seattle Right-of-Way Improvement Manual:** www.seattle.gov/transportation/rowmanual/manual

Sacramento County pedestrian design guidelines

The key chapters of the county of Sacramento’s “Pedestrian Design Guidelines” cover the following topics, among many others:

- Chapter 2, “Pedestrian Characteristics:” travel characteristics, characteristics at different ages and types of pedestrians by impairment.
- Chapter 3, “Street Design:” vehicle speeds, intersection design, sight distance and on-street parking restrictions, lighting, access on freeways.
- Chapter 4, “Sidewalk Location and Design:” installation policies, width, curbs, buffers, grades and cross slopes, surface treatments, meandering sidewalks and accommodations at transit stops and in rural areas.

- Chapter 5, “Intersection Design:” crossing distances, corner radii, curb extensions, crossing islands and crosswalks.
- Chapter 6, “Midblock Crossings:” decision tree for vetting candidate locations and design treatments depending on a street’s traffic volumes and speeds.
- Chapter 7, “Special Intersection Crossing Situations:” dual left-turn lanes, separate right-turn lanes, roundabouts and traffic circles, driveways and grade-separated crossings.
- Chapter 8, “Pedestrian Signals and Signs:” signals, warning signs and signal phasing and timing.

► **Sacramento County Pedestrian Design Guidelines:**

www.sacdot.com/projects/ADA%20and%20Pedestrian%20Projects/documents/Final%20Pedestrian%20Design%20Guidelines.pdf

City of Sacramento crossing guidelines

Sacramento’s “Pedestrian Safety Guidelines” manual is intended to “provide residents, staff, safety advocates, developers, and consultants information on the current best practices to enhance pedestrian safety for existing areas as well as new developments.” The key chapter is the second one, which is dedicated to crossings, and covers controlled approaches, uncontrolled intersections, mid-block crossings, trail crossings and “compact intersections.”

► **City of Sacramento’s Pedestrian Safety Guidelines:**

www.cityofsacramento.org/dsd/development-engineering/documents/ped_safety.pdf

Guidelines for crossing treatments

In 2006, the Transit Cooperative Research Program and the National Cooperative Highway Research Program jointly published a report entitled “Improving Pedestrian Safety at Unsignalized Crossings.”

Appendix A, “Guidelines for Pedestrian Crossing Treatments,” beginning on page 65, provides guidelines and recommendations on pedestrian crossing treatments at unsignalized intersections. It includes a flowchart, tables, calculations and worksheets for selecting the appropriate treatment(s) depending on the particulars of an intersection. Also, it includes examples and descriptions of sample treatments.

- **Improving Pedestrian Safety at Unsignalized Crossings:** onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_562.pdf

Stockton traffic calming guidelines

The city of Stockton’s manual on traffic calming includes chapters on selecting neighborhoods for participating in the city’s neighborhood traffic management program (chapter 2), identifying traffic calming devices appropriate for particular streets and neighborhoods (chapter 3) and implementing neighborhood traffic management measures as part of the review process for new developments. The manual also includes a “toolbox” describing in detail a variety of traffic calming measures (chapter 4), design considerations in the installation of traffic calming devices (chapter 5) and a list of references (chapter 6). Appendix A provides detailed design guidelines for individual traffic calming devices.

► **City of Stockton Traffic Calming Guidelines:**

www.stocktongov.com/publicworks/publications/TrafficCalming.pdf

“Park Once and Walk” programs

Too much parking is detrimental to the formation and development of pedestrian districts yet even pedestrian districts often attract significant numbers of drivers, who all need parking. “Park Once and Walk” programs are one way to resolve this dilemma. Such programs

encourage visitors to leave their car at a lot or garage upon arrival and not use it again until they are ready to leave. Encouragement methods include strategic pricing and placement of parking, use of valet parking, free visitor shuttles and a pedestrian-friendly environment (including short distances between destinations) that encourages walking.

► **Walkinginfo.org page on “Park Once and Walk” programs:**

www.walkinginfo.org/faqs/answer.cfm?id=3478