

Planning Information Sheet: Considering Safety through Comprehensive Planning and Ordinances



Version 2.0.

DESIGN FOR HEALTH is a collaboration between the University of Minnesota and Blue Cross and Blue Shield of Minnesota that serves to bridge the gap between the emerging research base on community design and healthy living with the every-day realities of local government planning.

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The following people were involved in the development of the Planning Information Sheet Series:

Series Editor: Dr. Carissa Schively

Contributors: Dr. Ann Forsyth, Dr. Kevin Krizek, Dr. Carissa Schively, Laura Baum, Amanda Johnson, Aly Pennucci

Copy Editor: Bonnie Hayskar

Layout Designers: Anna Christiansen, Tom Hilde, Kristin Raab, Jorge Salcedo, Katie Thering, Luke Van Sistine

Website Managers: Whitney Parks, Joanne Richardson

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Overview

Design for Health's *Planning Information Sheets* series provides planners with useful information about opportunities to address important health issues through the comprehensive planning process and plan implementation. The series addresses a range of health issues that are relevant to many communities and can be efficiently and effectively integrated into local plans and policies. This information sheet discusses a number of opportunities that planners have to address safety through planning and policy approaches.

Key Points

- This safety information sheet highlights public-health aspects that directly relate to aspects of the built environment, specifically addressing safety by reducing transportation-related crashes, pedestrian and bike injuries and crime and overall violence. Primarily, we focus on the latter two.
- Safety is a broad theme that relates to a variety of additional issues, such as safe water, roadways, air, or workplaces. Some of these dimensions are covered in other aspects of the designforhealth.net project (namely water, physical activity and air).
- While planners tend to think of safety in relation to the above health-related themes, there is also a substantial amount of research that demonstrates a link between mental health and safety, such that people's mental health is affected by whether or not they feel safe in a variety of environments. Please refer to the mental-health information sheet and key questions for more information.
- There are a variety of ways to address safety issues: embedded within traditional comprehensive plan elements like public services, human services or transportation; incorporated as a sub-section within less tradition comprehensive plan elements, such as community character or neighborhood design; or more fully explored through master plans that focus on safety, pedestrians or greenways and trails.

- Safety is an issue that can be addressed through specific implementation strategies that include: developing urban design ordinances that either briefly mention safety or more fully create a series of design-related development requirements; incorporating shared streets and traffic-calming tools; using independent safety checklists or audits; integrating safety within traditional building-code sections, such as landscaping and lighting; including it as part of a theme within a pedestrian-overlay district; or as a consideration within the development review process.
- Safety is not an isolated issue; rather, it is tied to many other health topics covered in the DFH materials. For more information, see the table on the next page.

Understanding the Relationship between Safety and Planning

Traditional approaches to public safety focus on fire protection, emergency medical services and law enforcement. Looking beyond a facilities-approach, a number of additional issues are related to the intersection of safety, health and planning; these include: transportation-related safety, pedestrian/bicycle crashing, crime, and violence. As the Key Questions Research Summary on Safety outlines these are important issues (see www.designforhealth.net for more information).



This underpass in Cumbernauld, Scotland, is cut off from natural surveillance

Ann Forsyth

Design for Health Planning Information Sheets addressing Safety

DFH Planning Information Sheet:	Topics covered related to accessibility:	Link:
Considering Safety through Comprehensive Planning and Ordinances	<ul style="list-style-type: none"> ▪ Traffic calming ▪ Shared streets ▪ Streetscape-design guidelines ▪ Pedestrian plans ▪ CPTED 	http://www.designforhealth.net/techassistance/safetyissue.html
Promoting Accessibility with Comprehensive Planning and Ordinances	<ul style="list-style-type: none"> ▪ Multimodal transportation systems ▪ Transit planning ▪ Specialized populations 	http://www.designforhealth.net/techassistance/Accessibility.htm
Supporting Physical Activity through Comprehensive Planning and Ordinances	<ul style="list-style-type: none"> ▪ Pedestrian and bicycle plans ▪ Community design 	http://www.designforhealth.net/techassistance/physicalactivityissue.html

Planning for Safety

This section discusses a number of practices that communities might undertake to more effectively plan for safety. We consider both comprehensive planning and regulatory efforts that planners can consider. It should be noted that we primarily focus on pedestrian/bicycle crashes and crime/violence. While crime and violence are different, the built-environment strategies to address these issues can be similar.

do little to provide any safeguards for walkers or cyclists; the overall design of a roadway is paramount. To address this, there are a variety of strategies available that aim to modify features of the built environment to better accommodate pedestrians and cyclists and therefore increase safety. Traffic calming is one of these design-related approaches as is its close cousin known as complete streets; formal design guidelines are another.

Pedestrian/Bicycle Crashes

Outside of the formal planning process, strides can be made by simply accounting for various elements that help foster more walking and cycling environments—either via physical infrastructure modifications or more area-specific policy approaches. Bicycle and pedestrian crashes are the result of many different causes, including errant behavior of the traveler (either cars or pedestrians/bicyclists) and built environments that do too little to protect walkers or bicyclists. Too often, streets and intersections are designed to principally accommodate fast moving vehicular traffic. Even if a speed limit is posted at 25 mph, the overall design of a corridor may



Bicycles painted on the road are designed to function as a guide to encourage safe riding and driving behavior from both bicyclists and motorists.

Traffic calming is most often applied on residential streets that otherwise would receive a great deal of through traffic. But it may also be appropriate for shopping streets where a more pedestrian-oriented realm is desired, while vehicles remain. There are a variety of techniques for traffic calming (County of Montgomery 1996; U.S. Federal Highway Administration 2001). They include: They include:

- speed bumps, speed humps, speed tables, raised crossings, undulations, or road texture/material;
- traffic circles and roundabouts, curb extensions (bulb-outs, neckdowns, chokers, chicanes/lateral shifts), median or pedestrian-refuge islands or edge lines to narrow a wide roadway in order to create a bicycle lane, parking lane or shoulder; and
- full closures or cul-de-sac conversion, half closures (closing one direction), diverters (barriers at intersection to prohibit or require certain movements), or realignment of intersections.

In areas with traffic calming, drivers “read” the potential hazards of the road environment and adjust their behaviors in response, thereby resulting in fewer crashes (Dumbaugh 2005). From a policy standpoint, traffic calming is addressed in the West Palm Beach, Florida, comprehensive plan. West Palm Beach has implemented a citywide traffic-calming program with a variety of treatments used in different settings. The Transportation Element of the Comprehensive Plan provides the policy basis for the traffic-calming improvements by identifying a number of traffic-calming efforts, including: vertical changes in the street (e.g., speed humps, speed tables, raised intersections), lateral changes in the street (e.g., chicanes, offset intersections, lateral shifts), constrictions (e.g., narrowings, pinch points, islands), narrow pavement widths (e.g., medians, edge treatments), entrance features, traffic circles, and small corner radii and related streetscapes (e.g., surface textures, edge treatments and colors, landscaping, street trees and furniture) (City of West Palm Beach 2003).

Shared streets are a more specific design strategy under the banner of traffic calming. Derived from Dutch root words “woon werf,” it is translated as “living yard,” but in the late 1960s was taken to mean “street for living” to reduce cut-through traffic. The woonerf puts the needs of car drivers secondary to the needs of users of the street as a whole. Thus, despite remaining connected, many neighborhood streets appear like driveways, with a realignment of the travel path, instituting double-parallel parking so that the travel lane would go around two parked cars, using brick pavers to inform and slow drivers, and placing planters and other furniture in what had been the roadway. The same transportation lane is used for pedestrians, bicycles and motor vehicles. The success of the woonerf (it was endorsed by the national government in 1976) spread to other European cities, primarily in the Netherlands, Denmark and Germany, initially. These techniques, including especially diverters, were adopted in mainstream manner in the U.S. in the 1970s in cities such as Berkeley, California; Seattle, Washington; and Eugene, Oregon, and have since spread to countless others. Efforts have been underway to integrate them into mainstream suburban environments (Ben-Joseph 1995).

Rather than modify specific blocks or treatment areas, a more comprehensive approach to address pedestrian and bicycle safety falls under the banner of complete streets. Complete streets are designed and operated to enable safe access and transport for all users, meaning that pedestrians, bicyclists, motorists and transit riders of all ages and abilities are able to use the street. Traditionally streets are designed around cars and all other modes follow suit behind, if at all. In other words, multilane streets and boulevards typically accommodate only cars. They have no bike lanes. No sidewalks. No pull-outs for bus transit. No trees. No medians or crosswalks so children and others could safely cross. Complete streets require transportation agencies to change their orientation. Instituting a complete streets policy ensures that transportation agencies routinely design and operate the entire right of way to enable safe access for all users. Many communities across the country are now

adopting complete streets ordinances, requiring that all new streets include, for example, street and sidewalk lighting, pedestrian and bicycle safety improvements, public transit facilities accommodation, street trees, and more.

In addition to broader initiatives such as traffic calming and complete streets, design guidelines might also be used to implement pedestrian-oriented planning. As part of its Downtown Austin Design Guidelines, the City of Austin, Texas, has identified a number of guidelines that are intended to promote a pedestrian-friendly environment. For each design guideline, the document identifies the key issues to be addressed, values supported, examples, and recommendations. One sample design guideline related to streetscape design is provided below:

Streetscape 10: Provide Protection from Cars / Promote Curbside Parking

Issue: The physical nature of the streetscape should make people walking there as safe as possible, and should make them feel a sense of safety, as well. It may be impractical to assume that effective barriers could be provided along the curbs of every street downtown, protecting pedestrians from the possibility of being struck by a car. But a degree of protection can be created in fairly easy and inexpensive ways. Perhaps the best protection for the sidewalk would be cars parked along the curb. Parking meters would provide some protection too. Where there is no parallel parking at the curb, small bollards, heavy planters or other similar devices may provide some protection. Parking along the street edge can provide a buffer between busy automobile traffic and pedestrian movement. It also acts as a traffic-calming feature, slowing drivers in the curbside lane.

Recommendations:

1. Barriers from cars should be provided along the sidewalk edge.
2. This protection may take the form of cars parked in legitimate parking spaces, trees or bollards.
3. Curbside parking is encouraged along all busy downtown streets.
4. When right-of-way is 80 feet or less, parallel parking is encouraged (City of Austin 2000).

Another approach to integrating pedestrian concerns into a comprehensive plan was used in Oakland, California. The City adopted a pedestrian-oriented plan as a component of the comprehensive plan. The City's Pedestrian Master Plan is part of the Land Use and Transportation Element of the Oakland General Plan. The Plan includes five over-arching goals, including:

1. **Pedestrian Safety.** Create a street environment that strives to ensure pedestrian safety.
2. **Pedestrian Access.** Develop an environment throughout the City—prioritizing routes to school and transit—that enables pedestrians to travel safely and freely.
3. **Streetscapes and Land Use.** Provide pedestrian amenities and promote land uses that enhance public spaces and neighborhood commercial districts.
4. **Education.** Educate citizens, community groups, business associations and developers on the safety, health and civic benefits of walkable communities.
5. **Implementation.** Integrate pedestrian considerations based on federal guidelines into projects, policies and the City's planning process.

The analysis of existing conditions in the plan includes existing street conditions, including identifying opportunities, such as mixed-use development, short blocks, transit access, pedestrian destinations, and trails. Walking rates, pedestrian-accident data, school safety, connections to transit, education, enforcement, and community outreach also were addressed (City of Oakland 2002).



Clearly marked crosswalks identify where pedestrians should be

The Kamloops, British Columbia, Pedestrian Master Plan provides a very formalized approach to identifying and prioritizing problem areas to be addressed in the plan. The plan includes a four-part rating system, gathered from a needs assessment, summarized in the table on the following page. Basic information about each roadway segment was provided, costs for improvements were included, and short-, medium- and long-term priorities were identified (City of Kamloops 2002).

Another key part of the plan is design guidelines for pedestrian facilities and environments. The guidelines relate to sidewalk width and materials, lighting, signage, landscaping, way finding, crosswalks, curb ramps, refuge islands, corner radii, signals, and a wide range of traffic-calming options



This flower garden gives this building a cared-for look while also maintaining sight lines to and from the building

Crime and Violence

The issue of crime and violence can be addressed through a policy-based approach either as part of a comprehensive plan or as a supportive or stand-alone document. The City of Denver, Colorado, covers safety in both a traditional way (chapter on human services) and a more non-traditional way (chapter on neighborhoods). The chapter on neighborhoods accompanies more traditional elements, such as land use, housing, economic activity, human services, mobility, etc.). The section on neighborhoods directly links safety to the built environment, while the

chapter on human services focuses more on facilities and accessibility (accessibility is another health-related theme that is covered by DFH). One of the objectives within this chapter is clean and safe neighborhoods, along with community participation, schools as centers of community, and planning and maintenance of community facilities. Some of the built environment-related strategies related to clean and safe neighborhoods include

- Establish acceptable and equitable standards for neighborhood cleanliness and deploy City personnel and resources to uphold those standards citywide.
- Promote planning, urban design and activities within neighborhoods that foster supportive relations among family members, neighbors, different generations, cultural groups, and institutions.
- Develop strong partnerships among neighborhoods, police and other City agencies to solve problems, prevent crime and reduce violence. The City should encourage efforts to improve the image of safety in neighborhoods through public education, eliminate visual factors indicating crime (e.g., boarded-up houses, graffiti, litter) and increase police visibility.
- Prevent crime and promote personal safety by using principles of Crime Prevention through environmental Design (CPTED) in project design.

Source: City of Denver 2000, 152-3:

Safety is tied to the section on neighborhoods, because of its relationship to quality-of-life issues that the City is facing.

As with Denver above, one of the tools often found in both policy documents and implementation methods includes design approaches like the use of Crime Prevention through Environmental Design (CPTED) principles. While most planners are familiar with CPTED, they may not be as familiar with the evolution of CPTED through the development of new design tools. Below, we cover both traditional CPTED examples and those that have used CPTED as a foundation for new

Table 1. Summary of Kamloops Pedestrian Master Plan Needs Assessment Methodology

Rating	Purpose	How it is measured	Rating scale
Safety Issues Rating	This is a measure of the pedestrian-safety issues on a roadway link, based on known safety problems or exposure to collisions for vulnerable-user groups.	The safety-issues rating is a subjective rating that was assigned, based on qualitative input from the City.	1 – Existing sidewalk on at least one side 2 – Existing sidewalk or gravel/ asphalt walkway adjacent to the road link, but could use improvement 3 – No pedestrian facilities, and no identified problems 4 – No pedestrian facilities, and potential safety problems 5 – No pedestrian facilities with a known safety problem or within 100 m of a vulnerable-pedestrian land use (i.e., school or seniors facility)
Pedestrian Safety Index	The pedestrian safety index (PSI) provides a measure of the pedestrian’s perceived level of comfort and safety on a particular road link.	The PSI is based on a mathematical formula that takes into account various aspects of the pedestrian environment and adjacent road characteristics. The formula is based on a complex equation that accounts for width of buffer, road, sidewalk; peak 15-minute traffic volume, buffer area, percent of on-street parking, average vehicle speed, number of lanes.	PSI values range from 1 to 5.5 and are reported on a Level of Service basis (A through F).
Network Contribution Rating	This rating was used as a measure of the relative “importance” of the pedestrian link to the overall citywide pedestrian network. It is used to provide a measure of consistency and continuity of the pedestrian network and identify those areas where there are “gaps” in the system.	The rating is assigned to each link based on location and relative importance for pedestrian facilities.	1 – Existing sidewalk on at least one side 2 – Existing shoulder or walkway adjacent, in peripheral area 3 – No sidewalk for significant length (>1000 m) or not connected at either end 4 – No sidewalk for moderate length (400 – 1000 m) 5 – No sidewalk for short length (<400 m)
Pedestrian Demand Rating	The pedestrian demand rating is used as a measure of the existing demand associated with existing land uses.	The demand rating is assigned to each link based on the various land uses and related pedestrian generators throughout the city. A set of “distances” between generators and road links was developed to assign a rating of demand on a particular link, based on the adjacent land uses.	Pedestrian demand is rated on a scale of 1 to 5, with a 1 indicating low existing or expected demand, and 5 indicating a high demand.
Aggregate Rating	This rating combines the four ratings in order to assess the overall need of each road link and prioritize needs.	This rating is a weighted averaged of the four other ratings. Weightings for this calculation were determined as: (1) Safety Issues—20 percent, (2) PSI—20 percent, Network Contribution—20 percent and Pedestrian Demand—40 percent. The aggregate rating is further prioritized on a percentile basis that assigns the highest ratings to those segments that have the highest aggregate ratings.	The aggregate rating is also reported on a scale of 1 to 5, with 1 indicating the lowest need for improvements, and 5 indicating the highest relative need.

Source: City of Kamloops 2002.

tools. CPTED has been modified, for example, to include more emphasis on ways that building community can reduce crime, which is related to the idea of social capital through such tools as SafeScape. The idea behind it includes principles that relate to how one identifies if the physical environment is unsafe and how one creates a sense of safety. They include (Brennan 2002):

- Principle 1. Information and Orientation. We feel unsafe when we don't know where we are and/or where we are going.
- Principle 2. Interaction and Socialization. We feel unsafe when we are alone and there are no other people with whom we can interact.
- Principle 3. Ownership and Stewardship. We feel unsafe when the physical environment is not properly cared for and not maintained.
- Principle 4. Seeing and Being Seen. We feel unsafe when we can't see other people and they can't see us.
- Principle 5. Land Use and Design. Encourages safety and community building through proper design of the physical environment.
- Principle 6. Activity and Programming. Facilitates safety and community building by bringing people together in the physical environment.
- Principle 7. Management and Maintenance. Sustains safety and community building through the long-term commitment to proper care of the physical environment.



Pedestrian lighting directs light on sidewalk and bench and bollards create a barrier between pedestrians and traffic

Some design tactics used to create a feeling of safety include: allowing clear views, having appropriate lighting, establishing activity generators to increase eyes on the street, supporting mixed use, establishing a vibrant public realm, keeping up with maintenance, identifying a hierarchy of spaces, and supporting a high-quality environment (Brennan 2002). These are all ways of increasing way finding, stewardship, ownership, and socialization to address crime and fear.

CPTED can be incorporated within a policy document. The City of Durham, North Carolina, for example, has a traditional public-safety element within its comprehensive plan that focuses on fire-protection level of service standards (fire-protection response time, staffing, location of fire stations, etc.), law enforcement level of service standards, emergency management (e.g., EMS-response time, emergency-operations plan), and interagency cooperation (City of Durham 2005). In an objective that discusses shared roles in crime prevention with other agencies, there is a policy that “Ensures the consideration of CPTED strategies in site design through the integration of CPTED principles in the Unified Development Ordinance and design guidelines” (City of Durham 2005, 12.3.2b). This policy on CPTED is also linked to chapter 4 on Community Character and Design Element where site design and safety is listed as a summary issue, along with protecting rural character, community maintenance, improving entryways, tree protection, parking lot landscaping, etc. Within the objective section on design guidelines and standards, it requires all new development consider CPTED principles. CPTED is mentioned briefly here, but does not go into great detail.

The development of urban-design ordinances is another way that planners can incorporate CPTED / SafeScape principles. The City of Tempe, Arizona, for example, has incorporated some of these principles into its Zoning and Development Code in relation to development standards. Chapters include general development standards, public infrastructure, building design, access and circulation, landscaping, lighting, and signage. Chapter 7, entitled “Landscape and

Walls,” provides design standards for landscape treatments with a stated purpose to create defensible spaces that support crime prevention, along with such other goals as “control erosion, reduce dust and glare, provide shade, visually soften building masses, ensure ADA accessibility, and aid in screening intense activities.” In section 4-704 of this code, the City states that, “Parking lots shall have landscape treatments that provide shade and allow for natural surveillance” (City of Tempe 2005, 42). They have two ways to conform, either through standard dimensions or performance standards based on tree canopy. It is important to note that these primarily focus on landscaping and indirectly focus on safety.

Additionally, the purpose of the section in chapter 8 on lighting states that, “lighting is intended to ensure appropriate lighting levels that support way-finding and crime prevention, assist people with visual impairments, allow flexibility in architectural design, minimize undesirable light and glare into adjoining properties and minimize light pollution into the nighttime sky” (City of Tempe 2005, 48). Each development must include a photometric plan and must follow a set of lighting standards related to illumination levels, operation and maintenance, types of space that require illumination (parking structure, stairwells, loading docks, etc.), parking lots, pedestrian pathways, building entrances, etc.

The City of Tampa, Florida, includes a lengthy section on CPTED in its Greenways and Trails Master Plan in chapter 4 that focuses on design guidelines and safety. The section begins by stating that each proposed greenway and trail section will receive a (CPTED) Crime Prevention through Environmental Design review. The plan proposes that (City of Tampa 2001, 38), “The proper design and effective use of the built environment can lead to a reduction in the fear and incidence of crime, and an improvement in the quality of life.” The Tampa Police Department will conduct the CPTED review of the citizen-approved greenways during the planning and design phase of all new and renovated trails. CPTED is based on three strategies that support problem-solving approaches to crime: natural access control, natural surveillance and territorial

reinforcement. The CPTED review consists of the following steps (2001, 38).

1. Crime Analysis Review. This information will assist the police department in determining the types of crimes that are occurring on and around the trail.
2. Demographics. This information describes the nature of the population around the trail before it is built.
3. Land Use. City planning departments, zoning boards, traffic engineers, and local neighborhood groups have information that describes and depicts the physical allocation and use of land in and around the trail.
4. Observations. Officers will conduct an actual review of the physical space that has been designated as a trail segment.
5. Resident or User Interviews. Officers will conduct interviews with persons living near the proposed trail to determine their perspectives on safety.

After the review, a series of CPTED recommendations are made in relation to security procedures that are designed to limit criminal activity on the trail and in the surrounding neighborhoods. These recommendations cover issues such as lighting, location of benches and rest stops, access to trails from roadways, and landscaping. These recommendations are incorporated into the final design of each segment. The Tampa Police Department has a staff trained in the principles of CPTED. Tampa has also linked policy with plan implementation as it has incorporated some design principles into the West Tampa Overlay District that relates to pedestrian safety. The general site and building standards for commercial buildings within this overlay district, for example, require that the principle façade and entry to the building should front the street and be accessible from the sidewalk in order to “assure pedestrian safety and retail visibility” (City of Tampa no date, 4). Further, it requires that 50 percent of the ground level of the principal building façade be constructed of transparent materials or fenestrated” (City of Tampa no date, 4).

Within its municipal code, along with chapters on subdivisions, zoning code, development review code, etc., the City of SeaTac, Washington, has an entire ordinance chapter dedicated to CPTED principles that is broken down into the following sections (City of SeaTac 2006, 1):

- CPTED Concepts
- Purpose, Principles and Application
- Definitions
- Security Provisions
- Exterior Lighting
- Parking Lot Lighting
- Parking Structures
- Private Street Lighting
- Gasoline/Service Station and Convenience Store Lighting
- Walkway, Bikeway and Park Lighting
- Building Facade and Landscape Lighting
- Interior Spaces
- Landscaping
- CPTED Standards Related to Natural Surveillance

As with most CPTED plans, the purpose is to reduce the fear and incidence of crime and to improve the quality of life via the built environment through territoriality, natural surveillance, access control, activity support, and maintenance. (City of SeaTac 2006, Ord. 03-1033 § 11). This is a very comprehensive approach, because it explains what CPTED is and then applies it to a variety of different uses.

CPTED often involves education programming and community public participation as opposed to solely being embedded within policy and plan implementation. The Phoenix [Arizona] Planning Department initiated the Safe Communities Program. The program’s focus was to create partnerships among City departments that are involved in creating the physical environment. This partnership includes key departments, such as law enforcement, fire, parks and neighborhood services—departments that are involved with safety issues on a daily basis. The partnership also includes departments involved with review of site plans and enforcement of neighborhood-preservation ordinances, and departments responsible for providing housing for low-income residents. The collaboration resulted in

a handbook, safety audit and CPTED workshop. After the information was collected and analyzed, the planning department developed a series of design and development guidelines for various types of uses (multi-family residential, single-family residential, parks/open space, schools, commercial/retail, etc.). In addition, a law enforcement officer was assigned the task of reviewing site plans and making recommendations as to how the site plans could be modified to create a safer physical environment.



Canopy trees allow clear sight lines through the park while also providing shade

Besides CPTED, there are a series of safety audit or safety checklists that communities can use to become more familiar with potential safety issues within their communities. The American Planning Association (APA) has developed a Safe Growth America Checklist to “facilitate discussions about safety and about actions that might enhance safety in a neighborhood” (American Planning Association 2004, 3). The checklist includes the following topics: pedestrians and bicyclists, health/accessibility, motor-vehicle and transit riders, buildings, home and workplace, public facilities, and the natural environment. Each has a series of questions that can be answered in relation to each topic. The table on the next page, for example, focuses on physical activity.

The checklist ends with a few comments on next steps, which include (APA 2004, 18): document your findings, select a course of action, make and implement the plan, and monitor the results. This should be more expansive. For more information about this checklist, please visit <http://www.planning.org/symposium/pdf/SafeGrowthAmericaChecklist.pdf>.

Final Thoughts

The examples above are just a sampling of the approaches that communities can use to address safety issues. The examples illustrate language that can be integrated into comprehensive plans and also design-related policies that can be used in zoning regulations and other municipal ordinances. Incorporating any of these ideas into a local plan or code often requires that the community residents be involved in a discussion about their feelings of safety in relation to the built environment.

Table 1. APA Safe American Checklist on Physical Activity	Yes	No	N/A
Are sidewalks relatively smooth?			
Are sidewalks free of debris and obstructions?			
Are sidewalks wide enough for expected use?			
Are there sidewalks on both sides of the street?			
Are there ramps in sidewalks at corners and on medians?			
Is there shade to protect pedestrians from the sun?			
Are there places for pedestrians to sit and rest?			
Is drinking water available for bicyclists or pedestrians?			
Are there bike paths or bike lanes?			
Are bike paths/lanes relatively smooth?			
Are bike paths/lanes free of debris and obstructions?			
Are bike paths/lanes and sidewalks free of blind spots so that entering pedestrians, bicycles, or motor vehicles are visible?			
Are sidewalks and bike paths/lanes free of obstacles such as road signs?			
Do sidewalks or bike paths/lanes terminate logically?			
Are there crosswalks at intersections?			
Are crosswalks well marked?			
Are there crossing signals at busy intersections?			
Are there medians in the middles of wide streets?			
Is lighting along sidewalks adequate?			
Is the area free of solid walls that limit visibility?			
Are police officers available in the area?			
Are there telephones to make emergency calls?			
Is there either residential or commercial activity that provides "eyes on the street"?			
<i>What other characteristics of the area might affect the safety of pedestrians and bicyclists?</i>			

Source: APA 2004, 4

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