Many segments of the population are disproportionately affected by the health consequences of physical inactivity and poor nutrition. However, local governments can respond by planning and designing communities that facilitate healthy lifestyles for all residents. This guide describes how local managers, department heads and local government staff can design healthy communities for all residents, regardless of income, race or ethnicity, age, ability or gender. The guide explains the connections between active living and social equity, provides a toolbox of local government strategies for promoting active living equitably, and highlights notable examples of local initiatives from around the country. A focus on active living and social equity also can serve as a lens through which local governments can address livability needs more generally by removing barriers to economic opportunity, transportation, services and amenities, and overall health and safety. This guide includes: an introduction to the connections between active living and social equity; strategies for promoting active living and social equity in key issue areas, such as walkability and pedestrian safety, bicycling, open space, land use, transportation infrastructure, economic development, school-based strategies, and nutrition access; case studies of successful local initiatives from around the country; and implementation strategies, such as funding, regional collaboration, engaging partners, and promoting awareness of active living and social equity.
JANUARY 2005
ITEM NUMBER E-43306

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This report was produced with support from the Robert Wood Johnson Foundation through its Active Living Leadership program. Managed at San Diego State University, the Active Living Leadership program is a partnership effort of International City/County Management Association, Local Government Commission, National Association of Counties, National Conference of State Legislatures, National Governors Association Center for Best Practices, and the United States Conference of Mayors.

For more information about the Active Living Leadership program and partner activities, please contact Active Living Leadership by e-mail: info@activelivingleadership.org or at http://www.activelivingleadership.org/

Acknowledgments:
This guide was prepared by Dan Emerine and Eric Feldman, with special assistance from Lena Delchad. Editorial assistance was provided by Nadejda Mishkovsky and Christian Kohler. The authors gratefully acknowledge the following individuals for their valuable input on this document: Rich Bell, Rebecca Flournoy, Marla Hollander, Monika Hudson, Russ Lopez, and Tom Sanchez. In addition, thank you to those who contributed their time and insights during the research for this report: Linda Bailey, Ross Brownson, Mike Cynecki, Bob Davenport, Kristen Day, Jacky Grimshaw, Julia Liou, Anne Lusk, Kelli Kavanaugh, Jan Metzger, Tom Mills, Freda Molton, Debbie O’Malley, Katherine Perez, Craig Raborn, Bobbi Reichelt, James Rojas, Nate Springer, Rich Stolz, Tom Van Demark, Bruce Watts, Paul White, Imogene Wiggs, Charlie Zegeer. Layout by Will Kemp and Charlie Mountain.

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11/04 Managing Active Living Communities
01/05 Active Living and Social Equity
Forthcoming: Blueprint for Livability: A Local Government Guide to Reforming Zoning and Land Development Codes

These documents are available online at http://icma.org/activeliving.

We welcome your comments and feedback at activeliving@icma.org.
I. OVERVIEW

Although the United States population is healthier than ever before, our continued health is now at risk. The country faces a trend of escalating chronic disease rates associated with obesity, overweight, and sedentary lifestyles that public health officials now describe as an “epidemic.” Meanwhile, health care costs are rising and many public health experts fear that our current youth may not outlive their parents. As a result, policymakers at all levels of government are exploring new ways to address these troubling trends. While these conditions reflect a variety of root causes—from changing diets to technological innovations to increasingly sedentary jobs and leisure-time activities—evidence suggests that there exists a strong relationship among health, physical activity, and the way we plan and design our communities.

Recognizing this link between health and the built environment, local governments are increasingly promoting active living—a way of life that incorporates physical activity into daily routines—as a way of addressing these challenges. Unfortunately, many communities currently lack the design and land use features that enable active living, making active and healthy lifestyles more difficult for residents. In these places, community design generally favors the automobile and other technologies over people. Essential services, healthy food options, workplaces, and other destinations are frequently not located within easy walking or bicycling distance from where people live. Moreover, other factors—a lack of quality sidewalks and open space, unsafe bicycle routes and street crossings, poor transit, fears of crime or personal safety, a lack of time or motivation, locked stairwells in offices and public buildings—further preclude healthy lifestyles.

As local governments seek to plan and design healthy communities, they will need to take extra steps to ensure that the most vulnerable populations—those isolated by their level of income, ethnic and racial background, age, ability, or gender—have access to the same choices and opportunities for healthy lifestyles as the population at large. These populations frequently face a greater risk of experiencing the negative health impacts associated with obesity lifestyle behaviors. They are less likely to be able to afford or access a gym, less likely to have time for leisure activities, and less likely to have easy access to the places and spaces that encourage a healthy lifestyle, such as safe streets and sidewalks, parks, trails, and community gardens. Moreover, by living active lifestyles, these individuals also face disproportionate safety risks—both traffic safety risks and the real or perceived risk of crime.

These disparities are symptomatic of broader inequities in land use, transportation, and economic development. Consequently, while active living itself is no panacea, a focus on active living can nevertheless serve as a lens through which local governments can address livability needs more generally. Such a focus can help local governments take a step closer to removing the overarching barriers that limit access to economic opportunity, transportation, services, open space, education, and health and safety.

Purpose of this Guide

This guide serves two main purposes. First, it seeks to provide local government managers, department heads, and staff with a basic understanding of the connections between active living and social equity. Second, it offers a toolbox of local government strategies for addressing these issues. In doing so, it provides examples of how some communities have gone about tying together active living and equity. It also identifies strategies for engaging key partners from within local government and from the community in local active living initiatives. Finally, this guide directs local governments to additional resources—written materials, contacts, and funding sources—for further assistance.

While linking active living and social equity is an important issue for communities of all sizes and characteristics, no community is entirely alike and there exists no single, most appropriate course of action. As such, this guide identifies a sampling of needs, challenges, and opportunities that local governments are likely to find in their community. It also highlights a set of strategies that vary in scope and complexity—from low-cost, short-term interventions to long-term, more resource-intensive strategies.

II. WHAT YOU NEED TO KNOW: A PRIMER ON HEALTHY COMMUNITIES AND SOCIAL EQUITY

National Trends

In recent decades, communities across the United States have experienced a variety of changes—demographic changes, changes to the landscape, changes in daily lifestyles and habits—and the country continues to evolve in these ways today. The population is becoming more diverse ethnically and racially. Despite the recent resurgence of many urban centers, communities have become increasingly suburban and automobile-dependent. At the same time, income inequality and segregation by socioeconomic status have also increased. Moreover, the population is getting older and, as the baby boom generation ages, the number of adults over the age of 65 will double.
in size to account for approximately 20 percent of the U.S. population by the year 2030.2

At the same time, individual lifestyle behaviors have changed as well. Currently, much of the U.S. adult population falls short of the U.S. Surgeon General’s recommendation for 30 minutes of physical activity each day. This pattern of behavior puts more than 60 percent of Americans at risk for diseases associated with physical inactivity.3 Physical inactivity also contributes to numerous physical and mental health problems and is responsible for an estimated 200,000 deaths per year.4 Furthermore, treatment of obesity, chronic diseases, and other health conditions associated with physical inactivity has an economic cost of at least $117 billion each year.5

Collectively, these trends have profound implications for the way that local governments conduct business now and in the future, including their ability to provide services and manage budgets. Nevertheless, as described in the remainder of the guide, local governments can choose to embrace these challenges as an opportunity to improve the quality of life for all residents while taking steps to ensure a healthier, more equitable future.

III. WHY EQUITY IS IMPORTANT TO ACTIVE LIVING

In communities throughout the United States, the reality is that certain populations and individuals face additional barriers to healthy lifestyles. Specific barriers include disparities in health and in levels of physical activity, disparities in access to the physical infrastructure that supports healthy and active lifestyles, differences in the ability to afford and make time for active living, and safety issues associated with active lifestyles.

A. Health and Physical Activity Disparities

Statistics suggest that some individuals—as a result of their income, race or ethnicity, gender, and age—are more likely to suffer the negative health consequences associated with physical inactivity. For instance, households earning less than $15,000 are more likely to be obese, be diagnosed with diabetes or asthma, live a sedentary lifestyle, and be at risk for health problems related to lack of exercise than people from households with incomes above $50,000.6 In addition, people of color are less likely to get recommended levels of physical activity and are more likely to suffer from more chronic diseases associated with physical inactivity than the population at large.7 The prevalence of physical inactivity is also higher among women than among men, and it is highest among minority women.8

For older adults, physical activity can improve overall health and vitality while reducing the risk of falls and of complications resulting from certain chronic conditions.9 Nevertheless, less than one-third of adults aged 65–74 engage in regular physical activity.10 Moreover, people with disabilities are less likely to engage in moderate or vigorous physical activity than people without disabilities.11

Finally, children are particularly at risk to the negative health consequences of physical inactivity. In 1999, 13 percent of children aged 6–11 years and 14 percent of adolescents aged 12–19 years in the United States were overweight.12 The rate of prevalence has nearly tripled for children aged 6–11 and has doubled for ages 2–5 and for adolescents. In addition, there is evidence that certain ethnic minority populations and children in low socioeconomic status tend to have higher rates of obesity than the rest of the population.13

B. Access and Affordability

Access to infrastructure and services: From the standpoint of physical infrastructure, recent research documents a significant association between race, ethnicity, and socioeconomic status and access to “physical activity settings,” such as bike paths and lanes, parks and green spaces, sports areas, and public pools and beaches. For example, one study found that “moving from a community with a 1% poverty rate to a 10% poverty rate is associated with a decreased prevalence of bike paths from 57% to 9% respectively.”14

Moreover, as growing numbers of older adults indicate that they prefer to “age in place,” the design of the built environment in the communities where they currently live is likely to discourage walking, which is the most popular form of physical activity for older adults.15 Even those areas that might be considered “walkable” for the general population contain barriers to walking, such as crosswalks that do not allow enough time to cross, dete-
rorating sidewalks, or other physical obstacles, for older adults. Further, even with federal universal design requirements, many neighborhoods also contain physical barriers that inhibit mobility for persons with disabilities, especially for those who rely on wheelchairs and walkers or have impaired vision.

Access to transit can also enable active lifestyles by encouraging less automobile use and supporting pedestrian-oriented land uses. However, many communities have obstacles that prevent people from walking to transit. One obstacle is that street and sidewalk networks in transit corridors and around bus stops and rail stations are often not designed with pedestrians in mind. Many bus stops are located in unsafe locations, such as at dangerous intersections, on highway shoulders, or on streets with narrow or no sidewalks. A second problem is that many transit stations are surrounded by large parking lots. If the distance a typical person is willing to walk from transit to a destination is a quarter-mile, and half of that distance is taken up by a parking lot, many walking trips are deterred.

**The economics of healthy lifestyles:** Given existing health disparities, there is a disproportionate burden on low-income and at-risk communities who cannot afford or access other physical activity options or who simply have work hours, commutes, or family responsibilities that limit the time available for physical activity. Low-income populations are especially vulnerable, as many individuals work more than one job to make ends meet and frequently travel long distances from their homes to access jobs. At the same time, these individuals are less likely to be able to afford or access alternative forms of physical activity such as joining a gym or other recreation facilities and programs. Moreover, for many, active living is not a choice but a necessity: Bicycling or walking to work, or walking to or from a transit stop, may constitute the only transportation option because of the expense of owning an automobile or difficulties with obtaining a driver’s license.

Statistically, individuals with lower incomes are less likely to have cars and are twice as likely to walk compared with people with higher incomes. However, while people of color and individuals with low incomes are more likely to walk, it is important to note that—given the lack of transportation options in their communities—these individuals still rely heavily on automobiles.

In some communities, as older neighborhoods experience reinvestment, rising property values and taxes can price out lower-income residents, forcing them to search for affordable housing in suburban areas that are neither pedestrian- or bicycle-friendly nor adequately served by public transit. Because many of the quality-of-life improvements that promote active living may also contribute to jumps in property value, local governments that intend to promote active living and economic development in low-income neighborhoods must take care to put in place policies that support existing residents. Often, residents can become suspicious of positive changes if they believe that they will not be the ones who benefit.

A final disparity, one that cannot be ignored when promoting active living, is the absence of healthy food options for some individuals—especially those who live in low-income communities and lack access to an

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**The Connections Between Social Equity, Health Disparities, and Active Living**

This guide draws together a number of concepts that have not often been linked. To better understand the relationships, the following definitions are provided:

**Social equity:** The American Planning Association defines social equity (or “community equity”) as “the expansion of opportunities for betterment that are available to those communities in most need of them, creating more choices for those who have few.” Ultimately, social equity means that access to all aspects of the community (including health, safety, open space, transportation investments, and economic development) is fair for all residents—regardless of socioeconomic status, race, class, ethnicity, gender, age, or ability.

**Health disparities:** According to the National Institutes of Health (NIH), “health disparities are differences in the incidence, prevalence, mortality, and burden of diseases and other adverse health conditions that exist among specific population groups in the United States.” Research on health disparities in the United States has focused mostly on disparities experienced by racial and ethnic minorities, and people with lower incomes. The NIH also states that “the most striking health disparities involve shorter life expectancy among the poor, as well as higher rates of cancer, birth defects, infant mortality, asthma, diabetes, and cardiovascular disease.”

Traditionally, attention to health disparities has focused on certain aspects, such as access to health care or proximity to environmental pollutants. Recently, public health literature has also paid increasing attention to the health disparities linked to inadequate levels of physical activity and improper nutrition. This guide suggests that disparities across population groups may be due in part to environmental barriers to healthy lifestyles, including community design that enables active lifestyles. By connecting a broader set of social equity concerns to active living, local governments may be able to have an effect on health disparities.

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automobile or convenient public transportation to grocery stores. Local governments should attempt to integrate nutrition considerations into all active living and economic development initiatives to ensure that neighborhood environments are truly healthy by any definition.

C. Safety Concerns: Traffic Safety and Personal Safety

Traffic safety: Factors such as lower socioeconomic status, age, and impaired physical ability also correlate with increased pedestrian risk for accidents, creating additional risks and disincentives that work against the goals of active living. For example, lack of access to a car correlates with a doubling of risk of pedestrian injuries. Statistically, Latinos and African Americans are more likely to be injured than the overall population, and the Surface Transportation Policy Project reports that the percentage of Latinos struck and killed by vehicles is two to three times higher than the general population. For example, in the New York metropolitan area, Latinos account for 10–15 percent of the population of Long Island, New York, but constitute 35–43 percent of pedestrian fatalities in Nassau County and 21–30 percent in Suffolk County. Hispanics on Long Island are twice as likely as whites to walk to work and six times more likely to ride a bike or take the bus (and walk to and from the bus stop).17

Moreover, both children and older adults are also disproportionately at risk. Pedestrian injury remains the second leading cause of unintentional injury-related death among children ages 5–14,18 and children who live in the poorest neighborhoods tend to face the biggest risk of being hit by cars.19 Meanwhile, pedestrians over the age of 65 comprise 13 percent of the total U.S. population but account for 21 percent of the nation’s pedestrian fatalities.20 This figure is likely to increase as older adults become a significantly larger segment of the population.

The reasons for these disproportionate impacts are complex and may involve multiple factors. Possible explanations include the probability of being a pedestrian (perhaps related to low access to automobiles and public transportation), road design in areas where members of vulnerable populations live, and behavioral and cultural factors such as impaired mobility or being unaccustomed to high-speed traffic. Nonetheless, it is clear that—aside from being an equity, quality-of-life, and public health and safety issue for local governments—pedestrian and bicycle accidents also contribute substantially to overall health and emergency response expenditures: Pedestrian injuries alone cost California $200 million in hospital charges.21

Personal safety and security: Safety fears, both real and perceived, sometimes impede the ability of vulnerable populations to live healthy lifestyles. Residents of crime-ridden neighborhoods often cite fear of crime as a reason for not walking to destinations, visiting parks, or allowing children to go outside to play. Similar fears exist for other individuals—children, older adults, people with disabilities, women—who may be especially vulnerable to crime.

IV. STRATEGIES

A. Improve Walkability and Pedestrian Safety

Given the disproportionate impact of problems with pedestrian safety and general walkability on underserved populations, local governments should consider expanding the traditional “3-E” approach to pedestrian planning (Education, Enforcement, and Engineering) to include a fourth “E”: Equity. There are many factors that influence pedestrian movement: street and sidewalk design; neighborhood planning and connectivity; proximity to jobs, schools, and services; and access to public transportation, to name a few. The pedestrian environment can be improved through both inexpensive, short-term interventions as well as longer-term, more expensive improvements.

A community might begin by identifying problems and at-risk populations, undertaking education and outreach, and soliciting help from residents and local partners. As a rule of thumb, a good goal is to create walkable streets for all ages and abilities. If a streetscape meets the needs of people aged 4 and 80, the visually impaired, and wheelchair users, then it likely offers a safer and more pleasurable walking experience for all individuals.22

Nevertheless, while education and enforcement are relatively easy and inexpensive, these strategies can only go so far without attention to the core problems of street design, street standards, and other land development codes to ensure that the same mistakes are not repeated in the future. Additional resources describing the technical aspects of pedestrian planning are highlighted at the conclusion of this report.

Collect and analyze data. Just as they do on a national level, statistics on pedestrian safety, demographics, and sidewalk coverage may have a story to tell, especially when mapped spatially using geographic information systems (GIS). Are cultural and demographic changes occurring in your community? Is the distribution of incomes shifting? Are some populations more likely to be involved in pedestrian accidents? Analyzing data to
identify pedestrian problems and high concentrations of at-risk populations can provide insight into potential priority areas.

**Tap the expertise and energy of those willing to help.** No matter how comprehensive, available data still do not provide a complete picture of community walkability, and many pedestrian accidents go unreported. For this reason, it is essential to tap into the knowledge of the end-users—the pedestrians themselves—by conducting a neighborhood walkability assessment. For example, seniors and individuals with disabilities themselves can provide the best information about intersections that are difficult to cross and sidewalks that are in need of repair. In Richmond, Virginia, senior volunteers assessed the walkability of a 150-block area of the city’s East End neighborhood using a walkability checklist and mapped their findings using colored pencils. The maps were later converted to GIS format and volunteers participated in a bus tour with city staff to study good and bad examples of walkability. To gather data for the New York State–funded “Safe Routes for Seniors” initiative, staff from the non-profit organization Transportation Alternatives visited senior centers to ask seniors to identify pedestrian concerns.

Similarly, children who walk to school regularly can identify locations where routes to school may not be safe. Neighborhood groups can help identify priorities for neighborhood pedestrian improvements. Moreover, working with employers to survey commuters can help identify areas, especially in the suburbs, where employees may be walking and bicycling in spite of the absence of sidewalks, crosswalks, and bike routes. Finally, local pedestrian advocacy organizations may be able to share their own data on pedestrian needs.

**Target strategic locations.** Based on data mapping and information from residents and local partners, it is then possible to target strategic areas for education, enforcement, and streetscape improvements. These might include areas of high rates of pedestrian injury, areas with high concentrations of older adults or immigrants, areas with high concentrations of households without automobiles, and so on. School zone safety is also a critical issue in promoting active living equity, and this topic is described further in a later section on schools.

Departmental staff should work with the local police department (and those of neighboring jurisdictions) to step up enforcement of traffic safety laws in areas where pedestrian safety is a problem. Local governments also may have to educate at-risk populations on pedestrian safety and the importance of physical activity. In areas with large immigrant populations, creating materials and signs in multiple languages may be necessary. Recent immigrants, especially those from rural areas, may not be familiar with heavy or fast-moving traffic or may find traffic patterns to be different than those in their home countries. As noted in the accompanying sidebars (see pages 9 and 21), the city of Oakland and the Washington, D.C., region, are a few communities that have conducted outreach to immigrant populations by printing educational materials in a variety of languages.

**Ease community fears.** In many communities, pedestrian amenities may be in place and yet residents still do not walk. Residents in some neighborhoods cite a fear of crime, and parents may not allow children to venture away from home because of these fears. Individuals with physical limitations or visual impairment may worry about both security and personal safety issues, such as falling hazards and crossing dangerous intersections.

Involving the police department in pedestrian planning and providing anti-crime training to concerned residents are two ways to begin addressing this issue. At the same time, not all communities have good relationships with police departments, so it may be necessary to gauge what a particular community wants from the police. If police are involved in the planning process for trails, parks, and streetscapes, they can identify solutions to safety concerns such as lines of sight, lighting, and the frequency of foot traffic (or “eyes on the street”), all of which can help to make their jobs easier. Local government managers also can take steps to make certain that police, transportation officials, and community members all have similar understandings of safety issues—particularly in the case of how safety laws are enforced and who does the enforcement. And police who regularly patrol the neighborhood on foot or on bicycles are natural allies for a wide range of active living programs, such as pedestrian or bicycle education.

Finally, educating public works, transportation, and planning staff on Americans with Disabilities Act (ADA) requirements and the needs of older adults can help raise sensitivity to safety hazards.

**B. Bicycling: Access, Awareness, Safe and Convenient Routes**

Research suggests that, on a nationwide scale, low-income individuals, minorities, and women may comprise a small percentage of bicycle commuters. Among these populations, specific barriers may include the cost and availability of bicycles, individual perceptions of and familiarity with bicycling, and a lack of bicycle infrastructure. Moreover,
Unlike walking, bicycling requires equipment and skills. It is easy to take for granted that all residents have access to bicycles and are both willing and able to ride them, but the reality is that bicycles are not a common part of daily life in many communities. Nevertheless, compared with the costs of car ownership and driving, bicycling offers a low-cost transportation alternative that simultaneously serves as a means of healthy physical activity.

However, the major impediment remains the lack of safe and accessible routes to purposeful destinations. At the same time, it is important to recognize that some individuals resort to bicycling out of necessity, either because it is the only affordable transportation option where they live or because public transportation does not adequately meet their needs and work schedules. For these reasons, local policies and programs to promote bicycling should focus on two fronts: (1) improving access to and awareness of bicycling and (2) improving the quality and availability of bicycle routes.

**Provide opportunities for low-income individuals to access and learn about bicycles.** In Portland, Oregon, for example, the “Create a Commuter” program—a partnership between the nonprofit Community Cycling Center and local and federal government agencies—provides low-income adults with fully outfitted bicycles and trains them to be all-weather bicycle commuters. Grant funding for the program came from the Federal Transit Administration’s Job Access initiative and is administered by TriMet, the regional transportation agency.

In addition, a number of communities have established bicycle recycling programs. In the District of Columbia, for example, low-income youth are trained to repair and recycle donated bicycles for resale. This initiative, called Chain Reaction and sponsored by a neighborhood nonprofit in the city’s Shaw neighborhood, not only teaches youth about entrepreneurship and offers bicycles at low-cost, but also raises awareness of bicycling and provides opportunities for the young mechanics to earn a free bike. Similar programs exist in communities such as Tucson, Arizona, and Columbia, Missouri, which holds an annual “Cycle-Recycle Day” to repair donated bicycles for low-income residents.

Finally, some communities, such as Arcata, California, and Madison, Wisconsin, offer bicycle sharing programs that allow residents to borrow bicycles as they would books from a library. In Arcata, for example, residents can leave a $20 deposit and check out a bicycle for up to six months from any of several bicycle lending stations.

**Provide opportunities for bicycle education.** Some children do not learn the basics of bicycle riding and safety, and communities can fill the gap by providing opportunities to learn about bicycling. In Philadelphia, the School District of Philadelphia and Bicycle Coalition of Greater Philadelphia used Intermodal Surface Transportation Equity Act (ISTEA) grant money to develop a program to teach middle school students about bicycling and to promote bicycle commuting as a component of an active and healthy lifestyle. Similar opportunities might be offered as part of local parks and recreation education programs. (See the later section on schools on page 16 for more information on the role of schools in promoting active living.)

**Expand the availability—and visibility—of bicycle infrastructure.** Sometimes the best way to promote bicycling is to install bicycle racks and other mechanisms for bicycle storage and security at popular and strategic destinations, such as schools, shopping areas, transit stations, and public buildings. Front-and-center availability and visibility of bicycle infrastructure in public places not only provides a safe, hassle-free place to store bicycles but also demonstrates that bicycles are frequently used and acceptable modes of transportation. In public housing complexes and other apartment buildings, the location of bicycle storage areas raises concerns about safety and security. To alleviate these concerns, building owners should be encouraged to provide storage in convenient, well-lit areas that receive regular foot traffic.

**Bottom line: provide safe and convenient bicycle routes.** According to a recent survey of low-income women in San Francisco, 80 percent of respondents indicated that they currently do not ride bicycles; yet, 63 percent said they would ride bicycles if there were bicycle lanes in their neighborhood. Clearly, education and promotion can only work if communities are bicycle-friendly and bicycle routes lead to purposeful destinations, such as shopping and other essential services, transit, and schools. Many of the strategies identified in the previous section on pedestrian issues also apply to promoting safe bicycling. Appointing a full-time bicycle coordinator, collecting and analyzing data on bicycle use and safety, developing a bicycle master plan, incorporating bicycle considerations into all transportation and development decisions—all constitute important steps in this process. A wealth of practical resources on this topic is available, and a list of selected resources is included at the end of this guide.
Pedestrian Safety in Oakland, California: Toward a Citywide Framework for Pedestrian Planning

The city of Oakland has the highest rate of pedestrian fatalities in the state of California, posing twice as much of an injury risk than any other city, and the areas with the highest numbers of collisions are minority and low-income neighborhoods. Seniors and children are most likely to be involved in those collisions. Oakland's Chinatown, one of several communities in Oakland and Alameda County facing these trends, is an especially dangerous place because of high congestion, a large number of elderly walkers, and poor traffic design. Downtown and Chinatown streets have high levels of traffic on multi-lane, one-way streets, and many intersections lack pedestrian signals.

Formation of Pedestrian Safety Office

In response to these concerns, the Oakland Pedestrian Safety Project (OPSP) was formed in 1995 at the request of city council member Nate Miley and with the support of the California Department of Health Services and the California Office of Traffic Safety. Since then, OPSP has attracted numerous partners, including city and county agencies of aging, police, injury prevention; community groups; and health care providers. Using both data mapping and input of neighborhood groups, OPSP has been better able to identify where the problems are and to garner community support.

Case Study: the Chinatown Neighborhood

Safety for Seniors

The Asian community was not fully mobilized until January 2001, when the father of one of the board members of Asian Health Services (AHS) was struck by a car at a main intersection in Chinatown. This tragedy led to an investigation by AHS, with the help of high school youth leaders, to gather data that showed that major Chinatown intersections did not give enough time for the elderly to walk across. The youth from AHS took their findings and OPSP data to city council member Danny Wong, who was instrumental in dedicating money for finding solutions. Once the groups had facts and numbers to back them up, they received city support.

Outreach to a Diverse Population

The Oakland Chinatown Coalition, the Oakland Chamber of Commerce, OPSP, and the city of Oakland engaged both young and old people in a community outreach process, which included 70 community presentations that reached out to 1,750 Oaklanders. Educational brochures were printed in Vietnamese, Chinese, Korean, and English to ensure that residents understood the street system and basic pedestrian safety considerations. Maps were brought to community groups and Neighborhood Crime Prevention Councils to identify areas and issues of concern. Most of the community feedback identified streets with two or more lanes as the main obstacle to comfortable walking, and safety around schools was the most commonly cited concern. Monthly meetings of the Citizen's Pedestrian Advisory Committee (CPAC) and the Technical Advisory Committee (TAC) elicited the feedback of district representatives and various stakeholder groups and agencies.

Pedestrian Improvements

Based on OPSP findings, at the Chinatown intersection of 8th Street and Webster, which has a high concentration of elderly pedestrians, the city installed a pedestrian “scramble.”

The scramble allows pedestrians to cross in multiple directions while cars wait behind a red light, thereby reducing the risk of accidents. Enlisting the cooperation and support of the city’s Traffic Engineering Department and gaining the political will for implementing the new system were lengthy processes. An education effort was necessary to show that a scramble system is effective. Since it was installed in April 2002, the system has significantly reduced the number of accidents at the 8th and Webster intersection.

Pedestrian Master Plan

As an outgrowth of this process, OPSP, with the cooperation of the Community Economic Development Committee, developed a Pedestrian Master Plan, which was adopted in November 2002 as part of the Land Use and Transportation Element of the city's General Plan. The State Office of Traffic Safety awarded OPSP a "mini-grant" of $600,000 to develop and implement projects addressing pedestrian safety. With the grant money, OPSP was able to produce the Pedestrian Master Plan in two years.

A New Citywide Focus on Pedestrian Safety

By developing the Pedestrian Master Plan and focusing on pedestrian issues, Oakland has gone beyond the level of attention and resources that most jurisdictions devote to pedestrian concerns. The plan has identified the most dangerous streets and the most commonly used routes of walkers. By its inclusion in the city master plan, the plan not only affects city ordinances but also brings more grant money to the city. One of the advantages of the OPSP is that it is part of the city’s Public Works Department and has the wholehearted support of the mayor, city manager, and city council to be more pedestrian friendly.

OPSP is in charge of the city’s Annual Pedestrian Safety Week and the Annual Walk Our Children to School Day. The Oakland Safe Walks to School program was developed through the Office of the City Manager to protect children from assault during walks to and from school and is funded with Community Development Block Grant money. OPSP also manages the city’s Traffic Safety Mini-Grant Program, which awards funds to grassroots and community-based organizations for reducing traffic-related injuries and fatalities. In addition, OPSP published the Walk Oakland! map and guide to raise awareness and promote walking in Oakland.

Evergreen Cemetery Path Shows How to Formalize Informal Space

Because many communities lack opportunities for active living or use public facilities in different ways, it is important to look for creative and adaptive ways to use land. Residents of the Boyle Heights neighborhood in East Los Angeles had been using the sidewalk along the perimeter of the Evergreen Cemetery as a de facto jogging path and gathering place for more than 25 years. After frequent users began noticing that the area began looking increasingly decrepit—including frequent littering and sidewalk pavement cracked and disturbed by tree roots and heat—community members began an effort to clean up the area and petition the city to build a community jogging path into the sidewalk. Local council members took an interest, and the city eventually allocated more than $800,000 to reconstruct the sidewalk. Features of the project include a rubberized surface for jogging and new features for tree-root management and stormwater run-off reduction. Currently, the city Bureau of Street Lighting is installing new decorative lighting along the path.

Use of the path has increased from about 200 to more than 1,000 people a day. According to James Rojas of the Latino Urban Forum, the jogging path “serves as a community plaza, where teenagers, the elderly, and mothers with baby strollers congregate to exercise, socialize, and maintain connections to the community.” The community’s success in getting this small project built has created momentum for more changes, including creating safe routes to and from the jogging path.

Sources: Michael Mendez, “Latino Lifestyle & the New Urbanism: Synergy against Sprawl,” Master in City Planning Thesis, Massachusetts Institute of Technology; Manal J. Aboelata, Built Environment and Health: 11 Profiles of Neighborhood Transformation (Oakland: Prevention Institute, 2004), http://www.preventioninstitute.org/pdf/BE_Boyle_Heights_CA.pdf. The authors also would like to thank James Rojas for contributing to our understanding of this project.

C. Open Space Equity: Parks, Trails and Greenways, Community Gardens

Parks, trails and greenways, community gardens, and other forms of open space can lead to multiple health and community benefits, from reducing the likelihood of being overweight to increased longevity for older adults. Open space can also benefit air quality, boost emotional well-being, raise property values, and, if designed appropriately, reduce crime. Moreover, community gardens can improve health in two ways by providing opportunities for both physical activity and healthy eating. In theory, open space is also democratic: everyone can access it and afford it.

However, many communities lack access to open space, and this disparity disproportionately affects those populations most at-risk to the health consequences associated with physical inactivity.\(^25\) Moreover, the mere availability of open space does not necessarily mean that a community will use it and benefit from it. From the large-scale open space planning process to stakeholder involvement to the fine-grain design details, the decisions that a local government makes about the location, design, and maintenance of open space and level of involvement of community stakeholders can ultimately determine whether open space lives up to its potential for promoting active living equity.

Conduct an open space inventory. Many communities conduct open space inventories, often using GIS maps, as part of the planning process. Such information can be used to identify neighborhoods that lack open space and prioritize areas to target new open space or improvements to existing parks and trails. When assessing the availability of open space, it is also important to take into account both large spaces and small pocket parks.

One example of an open space inventory process is the Triangle GreenPrint Project, an initiative to help the Research Triangle region of North Carolina protect a linked network of green space as the region grows. By identifying important open space, the project helps communities, land management organizations, and the general public maximize the investments they make in open space protection. GreenPrint is a collaborative effort sponsored by the Triangle J Council of Governments, the Triangle Land Conservancy, and the North Carolina Department of Environment and Natural Resources.\(^26\)

Open space inventories can be combined with other planning considerations to identify strategic linkages between open space planning and other initiatives. For example, the city of Dunedin, Florida, built a new senior center adjacent to the Pinellas Trail. The trail is now a popular destination for seniors, and, subsequently, senior walking groups have formed. Similarly, identifying vacant or underutilized properties that might function as open space—even temporarily—can help to increase the amount of open space while eliminating the negative impact of vacant land.

Define a clear vision, instill a sense of ownership. People of different ages and different socioeconomic and cultural backgrounds may have different attitudes toward physical activity and different ideas about the form and function of open space. For example, research shows that Latinos and Asians prefer parks as social gathering places, whereas other groups may prefer parks as places for active or passive recreation. Some neighborhoods report that community gardens appeal to immigrant residents who come from countries in which gardening is a common, everyday activity.

The linear nature of trails and greenways creates unique challenges and opportunities. With multiple sets of stakeholders along a right-of-way, planners may encounter
multiple visions of the purpose of a trail. Some neighborhoods may view a trail as a bucolic refuge and recreational amenity; other communities, especially those with lower incomes and safety concerns, may prefer a more utilitarian vision that emphasizes “main street” character and linkages to important destinations such as schools, employment centers, and essential services.

In designing or improving open space of any sort, it is critical to gauge how a community envisions an amenity before proceeding with the design process. In the long run, a space that carries meaning and purpose for its intended users, and instills a sense of ownership by involving community members in the planning and design process, has a much better sense of succeeding and promoting physical activity over the long term than an idea imposed from outside a community. Moreover, involving the community, and particularly youth, in some aspects of construction can further contribute to a sense of ownership.

**Ensure that open space is accessible and appealing to people of all ages and abilities.** Parks and recreation departments can take measures to ensure that all ages and abilities are able to access and enjoy open space. One rule of thumb is to ensure that parks and other open spaces are no longer than a 10-minute walk (or a 10-minute bicycle ride in less-dense areas) from where people live, while also taking into account physical barriers, such as railroad tracks, multi-lane highways, or natural features, that may impede access. Proximity to open space provides opportunities for spontaneous activity, which is critical to promoting physical activity as part of daily routines. Moreover, providing safe and appealing spaces for children to play near where they live is especially important in communities in which children may otherwise lack suitable outdoor spaces near their homes.

Following ADA requirements and paying attention to a variety of small details make a significant difference for older adults and people with disabilities. For example, the use of certain paving materials can minimize slipping and tripping hazards. Providing both ramps and stairs at steep grades can enhance mobility for a variety of users. Providing handicapped parking access can allow individuals with physical impairments to access open space from an automobile if park or trail access is otherwise constrained. Parks and recreation departments might also consider forming a Disability Advisory Committee to consider these sorts of issues.

**Develop a maintenance plan.** Maintenance can be costly, but it is also essential to creating open spaces that are safe and successful and appeal to a wide range of users. For new parks or trails, it is useful to conduct a maintenance study as part of the planning process. Determining both the cost and responsibilities for maintenance at the outset can minimize cost overruns and poor maintenance in the long run. Moreover, the findings of a maintenance plan can inform design decisions; for example, soft-path pavement treatment or brickwork may be more difficult and costly to maintain than simple blacktop. Moreover, planners and designers may wish to avoid materials that may present a tripping hazard, particularly in communities with or expecting large numbers of older adults. Finally, instilling a sense of community ownership of open space can improve the maintenance process by encouraging the community to contribute to maintenance on an individual or organized basis.

**Address security concerns.** In addition to overall maintenance, specific design elements can help address fears of crime. Design responses may include lighting, security cameras, emergency phones, avoidance of right angles on walled features, and landscape treatments with low vegetation that softens the harsh edges of a park or trail while maintaining visibility and eliminating hiding spaces for potential criminals. For specific guidance, park and trail planners should consult Crime Prevention Through Environmental Design (CPTED) guidelines and involve police departments in the planning and design process. At the same time, successful planning and design processes are the ultimate key to safety: the more people who visit a space and feel a sense of ownership over it, the more eyes there will be on the space, thus reducing the likelihood for criminal activities.

**Increase the number of community gardens.** Along with walking, gardening is one of the most popular forms of physical activity among adults. Community gardens present an opportunity to link multiple health and community benefits: they enable residents to produce healthy foods at low cost, they encourage physical activity among all ages and cultures, they increase social ties and neighborhood connections, and they improve safety by adding eyes and activity to previously vacant or underutilized spaces. The city of Seattle’s Department of Neighborhoods operates a “P-Patch” program that provides funding and technical assistance to neighborhoods whose residents want to establish community gardens. It is the city’s policy that new public housing projects have an associated vegetable garden. Other communities—Esondido, California; Sioux City, Iowa; Camden, New Jersey, to name a few—have “Adopt-a-Lot” policies that allow for interim use of underutilized public and private property for community gardens and other forms of community benefit.
D. Land Use and Equity

Creating active living communities goes beyond simply providing parks, trails, and sidewalks. Making active living a part of routine daily life requires, above all, that people have multiple destinations that are convenient to access by bike or on foot. This means “getting the land use right” — that is, ensuring that homes, shops, schools, workplaces, and other destinations are located close to one another and oriented in ways that encourage nonmotorized travel. The tools that local governments have to encourage such patterns of land use and development include comprehensive planning, zoning and land development ordinances, and design guidelines.

There are countless resources on mixing land uses, creating “human-scale” streetscapes, and developing other components of pedestrian- and bicycle-friendly development. (See “Resources” at the end of this report for some suggestions.) This section focuses on just a few strategies that are most relevant to both active living and social equity concerns.

Connect affordable housing to active living opportunities. As local governments make improvements that encourage active living, neighborhoods can become increasingly desirable, which can result in increased property values. Local governments can take action to ensure that housing remains affordable in such neighborhoods, including those in the central city (many of which are already walkable, bikeable, and accessible by transit). Jurisdictions can choose from a large toolbox of policy options, from inclusionary zoning requirements to property tax caps and exemptions for targeted populations such as older adults.

Allowing smaller lot sizes in new developments can serve the dual purpose of creating neighborhoods that are both more walkable and more affordable. Between 1997 and 2007, the median lot size in Winnebago County decreased from 0.24 acres to 0.17 acres. In Dunklin County, the median lot size decreased from 0.33 acres to 0.19 acres. These changes reflect a trend towards more density and smaller lot sizes. Winning the “battle” for affordable housing is essential to ensuring that these neighborhoods remain walkable and bikeable for future generations.

On the Winnebago Reservation in Nebraska, tribal leaders are engaged in an ambitious effort to bring the benefits of active living to the community—they are building a new town center in the town of Winnebago. Ho-Chunk Village is being planned as a mixed-use, pedestrian-oriented development with single-family, multifamily, and live-work housing units. Funded by an Active Living by Design grant from the Robert Wood Johnson Foundation, the community is also creating a five-year active living plan, establishing bicycling and walking support groups, developing community gardening programs, conducting active living events, and establishing a neighborhood watch program. Social equity is very much at the heart of the tribe’s work. A key reason for creating the active living plan was to address a housing shortage that is spurring middle-class tribal members to look for housing in other cities away from the reservation, leaving the remaining community poorer. Tribal leaders hope that the creation of this attractive, walkable town center with a mix of housing choices will stem the middle-class flight, resulting in more people staying who can “give back” to the community.

References:


Promoting Active Living in Rural Communities—Southeast Missouri and Winnebago, Nebraska

Rural communities face special challenges in promoting active living. While small towns may be quite easy to walk or bike around, the necessities of daily life may be outside of town, or residents of the surrounding countryside may live far removed from activity centers. Rural roads often do not have sidewalks or wide shoulders to make walking and biking safe options. The rural poor and elderly are especially vulnerable to social isolation, if a car is not available and transit is not provided. Rural communities can help reduce this sense of isolation and encourage social interaction by providing opportunities for physical activity.

Beginning in the late 1980s, the Bootheel and Ozark Health Projects built walking trails in 12 rural, predominately African-American communities in southeast Missouri. Members of the communities were concerned about health statistics showing that African-Americans were suffering from chronic diseases at higher rates. The trails were funded with seed money from Saint Louis University and the state department of health. Because these communities had few sidewalks or other options for walking, researchers wanted to see if providing new access to walking options could have some effect on reducing the rates of these diseases. Local coalitions of community and business groups initiated the process in each community; in most cases, city and county officials were directly involved in the coalitions and eventually provided local funds.

In one case, the trail built by the Bootheel Health Project in Dunklin County needed to be repaved with asphalt when the original rock paving began to degrade. The local coalition again took the lead, even reviewing bids from contractors. The local government then stepped in to take care of the actual contracting and put up approximately half of the funds required. Saint Louis University researchers performed several follow-up studies on the 12 communities, and found that access to the trails has increased the amount of walking that people engage in. The effects have been particularly encouraging for women in many of the communities.
and 2001, only 36 percent of new single-family detached homes were built on lots of less than one quarter acre. The median lot size for new detached houses during this time period was 0.42 acres.30 Houses built on such large lots are often unaffordable to low- and moderate-income households. Allowing homes on small lots (as well as multifamily dwellings) can reduce housing prices. When oriented toward the street with consistent setbacks, such dwellings can also increase the pedestrian character of a neighborhood by creating a “street wall” that makes the environment interesting and comfortable to walk through.

Accessory dwelling units (ADUs, sometimes known as “granny flats”) can also increase options for living in active living communities by making it possible for older adults to live on the same property with their family, but with a greater degree of independence. Many communities permit ADUs through their zoning codes. Some require that the resident of the ADU be a relative of the property owner, while other local governments take a less restrictive approach.

Mix land uses. Meanwhile, suburban jurisdictions that now have a larger share of a region’s affordable housing stock can diversify their mix of land uses, bringing neighborhood-scale retail, restaurants, and other services within walking distance of residences. This mix of uses within walking distance is particularly important for residents who cannot afford cars, or for whom even frequent transit trips are a financial burden. Local governments can start by looking at their comprehensive plans and their zoning ordinances and by identifying areas that are underserved by retail. Depending on market conditions and the resources available to the jurisdiction, localities may consider targeting such areas for tax incentives or abatements, technical assistance, and other programs.

Link good urban design to redevelopment. In communities where there is large-scale abandonment, or where land-intensive uses such as strip shopping centers have been the norm, there is an opportunity to create the conditions for economic development that both revitalize these communities and serve active living goals. Local governments can assist by assembling land and turning it over to developers who incorporate pedestrian-friendly design into their developments. Cities such as Portland, Oregon, and Richfield, Minnesota, have shown leadership by mixing subsidized housing together with market-rate housing in redevelopment efforts. In the best of these housing developments, the affordable units are physically indistinguishable from the market-rate units. Good urban design in underserved areas is important not only in terms of economic development and promoting physical activity, but also as a symbol of the local government’s belief that underserved populations deserve high-quality housing and amenities.

E. Transportation Infrastructure

Thus far, this report has touched on some specific methods for ensuring that pedestrian and bicycle infrastructure
can promote active living for vulnerable populations. This section takes a broader look at how transportation infrastructure can promote active living and support other equity goals.

Target repairs and maintenance. As noted in the introduction to this guide, pedestrian injuries and fatalities often disproportionately affect lower-income and minority communities. Anecdotal evidence from residents of predominately low-income and minority neighborhoods consistently suggests that streets and sidewalks in disrepair, wide intersections, and poorly designed and controlled crossings are factors in these incidents. In the South Bronx, community activists led by the advocacy group Transportation Alternatives identified five of the most dangerous intersections for pedestrians and came up with a list of recommendations for improved design. The intersections were all in high-poverty neighborhoods that have large percentages of minority, foreign-born, and non–English-speaking residents. The New York City Department of Transportation (DOT) has made repairs to these intersections; now Transportation Alternatives is asking the DOT to apply the same design principles at dangerous intersections citywide.

Provide transit routes that go where people need to go. Many communities are turning to mass transit as a way to relieve traffic congestion, improve environmental quality, and spur economic development. But transit can also be used as part of a strategy to encourage active living and meet the community’s goals for equity. When comparing alignments and station locations and design, city managers, transit officials, and planning staff should consider, for example, whether an alignment that serves auto-oriented development will meet the community’s goals as effectively as one that serves walkable neighborhoods.

The MAX Yellow Line extension in Portland, Oregon, is a good example of a transit project that incorporates both active living and equity concerns. The light rail project runs along Interstate Boulevard, through a number of diverse neighborhoods in north Portland with a history of economic hardship. Many of the neighborhoods were already relatively pedestrian-oriented, and local businesses were dependent on foot traffic for customers. TriMet (the regional transit agency) made sure that existing businesses were not unduly impacted by the construction of the project. And design of the project included a number of pedestrian safety features, including crosswalk countdown signals and diagonal crosswalks at the station access points.

Create safe routes to transit. As the above example highlights, it is important to make transit accessible for pedestrians and bicyclists—of all ages and abilities—to make certain that it works for all users. This is particularly important for transit facilities that serve populations with low car ownership and high walk/bike-to-transit rates.

Decision makers can review the layout, location, lighting, and connectivity between existing neighborhoods, new developments, and rail stations to increase safety, shelter, and convenience. For example, New Jersey Transit has received an $810,000 Transportation and Community System Preservation grant to upgrade pedestrian and bike connections between commuter rail stations and the surrounding townships.

Local governments can also make sure that bus stops are in safe, welcoming, and convenient locations. Sometimes, this can be accomplished by taking simple steps such as moving a stop closer to a striped crosswalk, as Montgomery County, Maryland, has done. Other strategies, such as adding shelters, adding or widening sidewalks, carving out bus bays, or implementing traffic calming measures on busy streets with bus service can also be considered. The city of Phoenix regularly reviews all bus stops for safety and accessibility, paying particular attention to making all of its bus stops wheelchair-accessible. TriMet in Portland has also developed criteria for pedestrian crossings at bus stops, including issues such as presence of sidewalks, illumination, and the number of recent pedestrian collisions. In one case, the agency removed 27 stops that failed these safety criteria from a state highway. TriMet and the Oregon Department of Transportation are working together to build new sidewalks along this corridor.

Many communities have also installed bicycle racks on buses to provide options for bicyclists when terrain or weather becomes difficult.

North American communities can also look abroad for examples. According to transit expert Robert Cervero, “the seamless interface of bicycle paths and pedestrian ways with major bus and rail lines” is a major factor in the high transit-mode share of many European and Latin American cities. Bogotá, Colombia, and Copenhagen, Denmark, stand out as cities that make transit easily accessible on foot or bike. Indeed, designers in Copenhagen have been able to extend the length that a typical pedestrian is willing to walk to transit from an average of a quarter-mile to at least six-tenths of a mile.

F. Economic Development

Economic development is a key part of active living, because development generates the destinations that attract walkers and bicyclists. By including economic development in an active living framework, managers can answer not only the question “how do people get around?” but also “where are they going?” and “would
they want to walk there in the first place?” And economic development is critically connected to equity concerns as well, because it provides an opportunity to build wealth in parts of the community that face economic hardship.

For an economic development strategy to fully enable healthy lifestyles, it should include developing options for healthy food choices. Many low-income and minority neighborhoods are underserved by groceries and restaurants, and this lack is often a sore point for residents. Organizations such as Social Compact (www.socialcompact.org) have analyzed urban neighborhoods and found that there is often untapped buying power that new businesses can take advantage of.

Revitalize main streets. Many older neighborhoods may have “Main Street” business districts that at one time were lively pedestrian places. Some of these have fallen on hard times due to business turnover, deteriorating streetscapes, or poorly maintained facades. Such neighborhoods are prime candidates for receiving technical assistance from programs such as the National Main Street Center, which often partners with local governments.38

Make brownfields redevelopment pedestrian-friendly. Other neighborhoods may have abandoned industrial sites that have sat idle because of concern over potential contamination. Due to federal legislation passed in 2002, and thanks to a large national network of stakeholders concentrating on this issue, many of these sites (commonly known as brownfields) are now being returned to productive reuse. When redeveloped with new shops, offices, and even housing, these projects can turn sites that were barriers to walking into new extensions of the surrounding neighborhood. Even when reused for new industrial activity, these sites can help encourage active living if local governments create community design guidelines, such as screening parking and loading docks. Because brownfields are often located in neighborhoods with low-income and minority populations, residents often raise concerns about environmental justice and gentrification. By acting as the coordinator for the various stakeholders involved, local governments can address neighborhood concerns and ensure that brownfields redevelopment fits into a community vision.

Examples of successful brownfields redevelopment projects that have incorporated active living include parks and trails projects undertaken in the Slavic Village neighborhood of Cleveland and the Arborela de Vida project in Albuquerque. Arborela de Vida is a new neighborhood development on a former sawmill site. When finished, the development will have more than 100 homes, along with commercial and light industrial uses, a community center, and a park, plaza, and community gardens, all on a 27-acre former sawmill site. The Sawmill Community Land Trust built the development with assistance from the city, which acquired and rezoned the site.39

Partner with businesses. Businesses are key partners for local governments trying to promote active living for all populations. Many businesses are now seeing that promoting an active lifestyle results in more productive employees with fewer health costs. And local governments can help employers incorporate equity into their active living strategies by working with business to ensure that employees on alternative shift schedules or engaging in

Targeting Pedestrian Infrastructure for Economic Development—Corktown, Detroit

Local governments often target infrastructure improvements not only to catalyze new private investment in underserved areas, but also to improve access to existing businesses. Infrastructure that specifically supports walking and bicycling can be a highly effective way of meeting both goals. The types of infrastructure that support active living—sidewalks, bikeways, and street furniture, to name a few—often work to create an appealing atmosphere that attracts new businesses. And as more visitors to a neighborhood get out of their cars and walk, they are often more likely to make purchases at businesses they would not have noticed before.

Economic development was the motivating factor behind the efforts of the Corktown Citizens District Council (CCDC) to create a network of sidewalks in the Corktown neighborhood of Detroit. Corktown is Detroit’s oldest neighborhood, and like much of central Detroit, has experienced its share of crime and abandonment. According to CCDC administrator Kelli Kavanaugh, when Tiger Stadium closed in 1999, neighborhood leaders saw an opportunity to support a new mix of residences and local businesses. One of the first needs identified by residents was to build sidewalks that would be both attractive and provide safe walking paths up Michigan Avenue, which was notoriously pedestrian-unfriendly.

The neighborhood group proposed and gained approval for seven blocks of brick-paved sidewalks, along with traditionally designed iron streetlights. The Michigan Department of Transportation (MDOT) and the city of Detroit’s Department of Public Works have supported the community initiative throughout the process, and MDOT provided federal Transportation Enhancement dollars to fund the project. The project will cost $7.6 million when completed. In an innovative arrangement, the CCDC will be responsible for maintenance of the sidewalk. The neighborhood has also set its sights on creating a greenway to provide residents with access to the Detroit River and other nearby neighborhoods (currently cut off by a light industrial park).

reverse commutes are well served by public transportation and pedestrian and bicycle infrastructure.

Business improvement districts (BIDs) often partner with local governments to fund improvements such as sidewalks, lighting, bike racks, and wayfinding signage. And some businesses hold important roles in particular communities and can be sources of health information. For example, barber shops have been successfully used to provide African-American men with information about heart disease in localities such as Genesee County, Michigan.  

G. Kids and Schools: An Important Focus for Local Active Living Initiatives

Schools are an important focus for local active living initiatives for several reasons. They provide venues for educating children about leading active lifestyles, and they serve as community assets that impact surrounding neighborhoods. Important considerations for local governments include understanding the impact of schools on land use, how schools can serve as community centers, and the role of schools in fostering active living opportunities for youth.

Understand the impact of schools on community design. Schools have a profound impact on community design. School siting decisions, for example, influence the extent to which youth both near and far are able to walk and bicycle as part of daily routines. Locating schools at the fringes of a community can perpetuate “school sprawl” and necessitate trips to school by bus or private automobile. Siting schools as part of the neighborhood fabric and near residential areas can create opportunities for active living and can reduce the costs of school transportation.

Ensure that schools serve as community assets. Schools are community assets that can foster active living opportunities for the surrounding community. A joint-use agreement between a school district and another public or private entity, in which common elements—such as facilities, land, and utilities—are shared, can meet a community’s needs for programs and services and also reduce costs of school construction. If done right, a joint school-park, for instance, will save valuable land, money, and time. It will promote active living by creating a site within walking distance to residential areas that provides opportunities for physical activity.

Improve school zone safety. A striking number of school children are hit by cars within a few blocks of school. Moreover, pedestrian injuries account for 61 percent of pediatric trauma admissions to U.S. hospitals and are second only to cancer as the leading cause of death for children between the ages of 5 and 9 years old. To promote active living without the associated risks, attention to school zone safety and safe-routes-to-school initiatives are critical.

Incorporate active living education in the school curriculum. Schools are also valuable messengers of the active living message. School curricula, for example, can include attention to health considerations and advocate the importance of regular physical activity to maintain good health. Schools also can play a role in promoting safe walking and bicycling by including traffic safety and bicycling skills in the curriculum (see also the description of the bicycle education program in Philadelphia schools, as described on page 8). Finally, schools may provide a way to reach at-risk parents by sending home key messages through children and encouraging parents to practice more active lifestyles themselves.

H. Food Access: Linking Active Living, Nutrition and Economic Development

An active living strategy will be most successful if it is combined with initiatives to improve residents’ access to healthy foods and a focus on the connections among “food environments,” the built environment, and economic development.

In many low-income communities, numerous barriers to healthy eating work against the potential health benefits of active living. Particularly in low-income urban neighborhoods, individuals without cars may lack access to healthy and affordable foods within walking distance or within an easy ride by public transportation. To meet their grocery needs, many residents may rely on smaller, convenience-oriented markets that tend to offer fewer healthy foods (such as fruits and vegetables), fewer options in general, and higher prices than larger supermarkets.

One analysis of 19 cities found that areas with the lowest incomes had 30 percent fewer stores per capita than areas with the highest incomes.

Moreover, many low-income neighborhoods are characterized by a prevalence of fast food establishments that offer the kinds of low-cost yet high-fat and high-calorie foods that contribute to obesity and overweight. In addition, other factors—a perceived lack of time to cook healthy meals, the high price of fresh produce relative to other foods, and the infrequency with which residents can travel to markets in other neighborhoods that sell healthy foods—all add to the difficulty of balancing active lifestyles with healthy diets in some communities.

From an active living perspective, the lack of nearby supermarkets intensifies the number of trips made via
public transit or automobile versus the ability to reach supermarkets on foot or bicycle. In a survey of urban food stamp participants, for example, 29 percent reported shopping at grocers outside their neighborhoods. Their biggest complaints were the lack of stores close by and high prices. They cite transportation barriers as a reason for making only one large shopping trip per month, a practice that limits their ability to eat fresh fruits and vegetables and other perishable foods. Moreover, from a neighborhood and economic development perspective, if residents end up spending their money outside of their own neighborhoods, it will not encourage local investment and economic development.

Local governments can address food access issues as part of an active living and equity strategy by providing incentives to grocers and other food businesses to locate in underserved communities, by ensuring that these businesses fit into pedestrian-friendly streetscapes, and promoting community gardens and farmers’ markets.

V. IMPLEMENTATION
A. Funding

Local governments can fund active living projects and programs from a variety of sources. This section focuses on sources for funds for active living projects, including construction of infrastructure, hiring staff, and administering programs and services.

Infrastructure: Because active living focuses on making it possible for people to make trips by foot or by bicycle in lieu of other modes, transportation funds are a logical source for financing active living infrastructure. Two federal laws have prompted major changes in the way transportation projects are planned, funded, and constructed—the 1991 Intermodal Surface Transportation Efficiency Act (ISTEA) and its successor, the 1998 Transportation Equity Act for the 21st Century (TEA-21). (The “equity” in TEA-21 refers more to an equitable distribution of gas tax receipts among the 50 states than it does to the equity issues raised in this report.)

ISTEA created, and TEA-21 reauthorized, a number of distinct programs to provide federal money for various transportation needs. Most of the programs authorized under these laws can fund bicycle and pedestrian projects. However, some of the programs are not used to their full potential.

ISTEA and TEA-21 have advanced the inclusion of equity concerns into transportation planning. ISTEA requires “early and continuous” public involvement in transportation planning and requires metropolitan planning organizations (MPOs) to comply with Title VI of the Civil Rights Act. People of color, low-income communities, and people with disabilities have used these requirements to ensure that their concerns are part of the process.

Most of these programs are administered in each state by the state departments of transportation (DOTs) and are supplemented with state funds. Therefore, it is important for local government managers to work closely with their state DOTs to ensure that funding for bicycle and pedestrian projects is available.

As of fall 2004, the U.S. Congress has not reauthorized TEA-21, largely due to debates about the overall funding level. Other issues being considered are whether to provide (or “sub-allocate”) more federal money directly to local governments and MPOs, as well as creating a new program to direct money to increasingly popular “Safe Routes to School” programs.

Other sources of funds for active living infrastructure: There are a great many other sources that local governments may use to fund active living infrastructure. Although not a comprehensive list, potential sources include the following:

- Community Development Block Grant (CDBG) funds and other funds from the Department of Housing and Urban Development are particularly useful for low-income neighborhoods and central cities. CDBG funds have been used to construct sidewalk and streetscape improvements and to encourage small-scale economic development activity in communities across the United States.

- Sales taxes are a commonly used mechanism for funding infrastructure. Sales taxes should be viewed with caution, however, because they are a regressive tax, meaning that they take a greater percentage of income from people with low incomes. In 2000, Alameda County, California, voters passed Measure B, a sales tax increase crafted by the county transportation authority in consultation with a wide array of stakeholders. Advocates for the working poor insisted that because of the sales tax’s inherently regressive nature, it should be used in part to provide significant funding for transit, paratransit, and pedestrian and bicycle safety measures. In Columbia, Missouri, voters approved a 1/4 cent sales tax increase specifically to fund parks and trails.

- State and local gasoline taxes also have regressive qualities, although they are often considered less objectionable on equity grounds because they operate as user fees. As a source of funding for active living
Programs Authorized Under TEA-21

- **Surface Transportation Program (STP):** STP funds are available to spend on a wide variety of projects, but of the nearly $50 billion provided to states under this program from 1992 to 1999, less than 7 percent was spent on modes other than highways and bridges. States have the ability to “flex” such funds to nonhighway projects, but many do not take full advantage of this provision.

- **Transportation Enhancements (TE):** TE is a subset of the larger STP. During the 1990s, the TE program was the most popular source for pedestrian and bicycle improvements, providing as much as 75 percent of all bike/pedestrian projects. The National Transportation Enhancements Clearinghouse has a wealth of information on completed projects, the application process, and other particulars of the program.

- **Congestion Mitigation and Air Quality program (CMAQ):** CMAQ provides funding for projects that relieve congestion and reduce vehicle emissions in areas designated by EPA as not in attainment of federal clean air standards. Most pedestrian and bicycle projects comply with the standards for this program. Bicycle and pedestrian coordinator staff positions may also be funded with CMAQ dollars, although some observers suggest that this fact is not widely known, which may have led to reluctance on the part of governments in creating these positions.

- **Transit:** The various transit programs under TEA-21 can also provide funding for infrastructure such as bike racks, as well as the construction of stations that incorporate pedestrian and bicycle access.

- **Safety:** The Highway Safety program sets aside money for all types of safety projects. However, in many states the amount programmed to pedestrian and bicycle safety represents a small percentage of the total—much smaller than the percentage of injuries and fatalities suffered by those travelers.

Funding for programs and services: Many of the programs described in this report, especially those that promote health, can be funded through grants by state departments of health or federal health agencies. The U.S. Department of Health and Human Services, for example, has funded "Steps to a HealthierUS" grants over the past several years. These grants fund a number of local and state government health initiatives, such as the promotion of physical activity and better diets, to the implementation of worksite wellness programs, and the hiring of school health coordinators.

Other sources of funding for local programs include national grant-making institutions like the Robert Wood Johnson Foundation, local community foundations, and local businesses. Local governments are often turning to partnerships with local nonprofit groups that can receive grants from foundations to carry out activities like walking promotion and organizing “Walk to School” events.

B. Regional Issues

Viewed through an equity lens, active living promotion is a regional responsibility for several reasons. As regions increasingly find that their transportation issues are interconnected, many localities that participate in MPOs are collaborating to identify regional solutions to traffic congestion, air quality, jobs-housing balance, and providing transportation services that cross jurisdictional lines. While much of this work has focused on the movement of cars, buses, and trains, pedestrians and bicyclists are also part of the equation.

The responsibility for ensuring active living equity extends beyond a single jurisdiction. Because local governments operate in a regional context, they need to consider not only their own residents, but also other populations who use their services and are part of the same economy. With the dispersion of jobs and services across metropolitan regions, some communities may not house large numbers of low-income people but may house the businesses that employ them. A jurisdiction may not currently have large numbers of foreign-born residents, but may be in a region that is experiencing growth in immigration. While many active living strategies have focused on encouraging physical activity among residents, there are practical reasons for making active living opportunities safe and accessible for all. If, for example, commuters from another locality arrive by transit and must walk along an unsafe thoroughfare to get to their job location, the jurisdiction where the place of employment is located will incur the cost of service responses to injuries and fatalities.

Address the jobs-housing balance and reverse commutes. As noted above in the section titled “Land Use and Equity,” communities that have different housing and employment conditions can take steps to locate new commercial activities closer to housing, and vice versa. This is a reminder that such decisions take place in a regional context and that activities such as cooperative forecasting can provide communities with the basic information to make such decisions rationally. Regions with
well-developed relationships can go further by implementing strategies such as regional economic development plans. After changes to the state Municipalities Planning Code, dozens of local jurisdictions in Pennsylvania are coming together to form “multi-municipal plans” that allow joint planning of regional issues and the sharing of costs and revenues for regional services. These partnerships have also developed model zoning codes for voluntary adoption by participating jurisdictions.

The Jobs Access and Reverse Commute program (JARC) created by TEA-21 can also be used to address reverse commute issues by funding affordable and convenient public transit between urban neighborhoods and suburban job centers. JARC funds were used to implement the “Create a Commuter” bicycling program in Portland, Oregon (page 8).

Create regional networks of trails, bikeways, and open space. Trails, bicycle routes, and parks, just like road networks, are used by residents region-wide and are most useful when they cross jurisdictional lines in a logical, seamless fashion. Regional collaboration is especially important when building trails and routes that pass through multiple jurisdictions. Jurisdictions will need to coordinate planning, the purchase of right-of-way, and the engineering and construction of facilities. Bicycle commuting is becoming increasingly popular as a low-cost, healthful alternative. Because of the aforementioned issues related to job-workplace separation, jurisdictions should cooperate to ensure that bicycle routes are convenient, safe, and as seamless as possible as they cross jurisdictional lines. Parks and other open spaces serve a number of regional needs that go beyond active living, and regional networks of open space enable protection of wildlife habitat and water quality.

Optimize traffic signals at jurisdictional borders. Signalization is also an opportunity for regional cooperation on pedestrian safety. The Metropolitan Washington Council of Governments (MWCOG) has encouraged member jurisdictions to engage in a process called “signal optimization,” which retimes and coordinates traffic signals along key travel corridors. According to MWCOG staff, signal optimization may improve pedestrian safety because it increases predictability at intersections. Signalization also can play a role in dampening the effects of through-traffic in residential neighborhoods.

Take a regional approach to enforcing traffic safety. When all jurisdictions in a region have a common message on enforcing traffic laws, it can have a powerful effect on drivers, pedestrians, and bicyclists. See the sidebar on the Metropolitan Washington Council of Governments’ regional approach to pedestrian safety for one way to address this issue (page 21).

Collect data and communicate information. Data standardization is also a regional issue because it helps neighboring jurisdictions communicate in common terms. For example, some jurisdictions may lump together pedestrian and bicyclist injuries, while others consider them separately. Neighboring jurisdictions should also be aware of the proper points of contact with their neighbors. In one jurisdiction, the department of health may collect injury data; in another, the sheriff’s office may do so. Clear communication about data helps jurisdictions compare “apples to apples” and can better equip managers to measure performance from year to year.

C. Engaging Partners
Experienced managers will readily testify that any successful local government endeavor requires partnerships. Because of the wide range of disciplines involved and the intersection of so many connected issues, this is particularly true for active living, and especially so when equity concerns are at stake. Successful active living projects that take equity into account go beyond traditional public involvement strategies, to engaging the entire community as partners. By this, we mean that community members are consulted about their needs, concerns, and visions. They participate in the creation of policy and the design of infrastructure and public spaces, and they guide private investment.

It is important not to assume what people want. Not everyone will understand or appreciate active living, or they may have higher priorities. In such cases, it is important to identify ways that active living can help the community meet their goals. If active living is seen as a luxury for people with spare time and money, it will fail. If it is seen as improving health and quality of life of individuals and the community, it will succeed.

Partner with community groups. Community groups can be a local government’s greatest resource when implementing active living programs. Not only can community groups help build support for improvements to the neighborhood, they can also act as important “reality checks” and “user-experts” to identify key issues and ensure that the proposed changes will serve the community’s needs. They can further assist in the actual implementation of change, as with the senior citizens who inventoried walking conditions in New York and the many community development corporations that made changes to the built environment.
Find common ground and shared interests. 
Taking an equity approach to active living often means finding opportunities for solutions that serve multiple populations and meet multiple goals. For example, designing ADA-compliant streets, sidewalks, and crossings not only helps the disabled and older adults, but can also benefit bicyclists. And if streets are bicycle-friendly, they may attract more visitors to a neighborhood, thereby benefiting local businesses that might then partner with the community by providing bike racks.

Parks provide places where diverse populations can be active in a variety of ways. Flexible space and programming is important to meet this need. In Washington, D.C., the most used space in Meridian Hill Park is a flat, grassy area that serves at various times as a soccer field, a place to throw Frisbees, and a place to practice juggling. Walkways running along either side have benches for the elderly and others to sit, and they are wide enough to provide a safe place for five-year-olds to practice riding their bikes without training wheels. The park is a common gathering place where Latinos, Anglos, East Africans, African Americans, the very young and the very old, and people of varying economic backgrounds can mingle freely and engage in their own pastimes.56

While it is important to emphasize the opportunity for common ground, it should be acknowledged that different populations have different needs. For example, visually impaired persons find textured pavements to be helpful, while uneven surfaces can present an obstacle for wheelchair users or persons with other motor impairments.57

Use a variety of outreach methods. 
Before any kind of public meeting, it is important to inform and invite community members to ensure that they will be present to participate and be “at the table.” There are pros and cons to various outreach methods. Traditional methods such as public notices in local newspapers actually reach a fairly small segment of the population, given the variety of media Americans use to get information today. Web sites and e-mail notices can be useful, but may be less useful for older adults who are less familiar with technology or low-income persons who do not have access to a personal computer. Methods such as printed newsletters and postcards, door-to-door canvassing and community “walk-through,” and flyers and in-person announcements from officials at community gathering places can be more effective. A frequently heard maxim of people who engage in community outreach efforts is “meet the community where they are.”

Consider event location and time. 
Consider the populations you are trying to reach. A daytime meeting at a senior center is a highly effective way to ensure the participation of older adults. Meetings on evenings or weekends, held in familiar neighborhood locations (such as libraries, schools, and churches), are more likely to attract working parents. Keep in mind that many low-income workers work long or nonstandard hours and may hold more than one job. Support services like childcare and food make it easier for these community members to attend.

Use public involvement approaches other than public hearings. 
The traditional public hearing tends to result in formal, one-way communication and can lend itself to grandstanding and little actual dialogue. Local officials may want to consider alternative forms of public involvement, such as roundtables, interactive workshops, and study circles. A common theme among many of these techniques is a collaborative approach to community planning. Particularly in low-income, minority, and other underserved populations, residents may feel that their concerns have been rejected or ignored. A collaborative approach in which local officials approach community members as partners and listen to their concerns, needs, and visions is more likely to build a foundation for positive results.55

Overcome language barriers. 
Many of the successful projects cited in this guide took care to meet the needs of residents who speak languages other than English. This principle applies not only to signage and documentation, but also to including people with limited English proficiency in community meetings. If the local government does not have multilingual staff, consider working with community groups and local media who publish in different languages as intermediaries.

Work through difficult times. 
The Fruitvale Transit Village, frequently cited as a precedent-setting model for creating pedestrian-friendly transit-oriented development in a low-income and predominantly minority community, grew out of community opposition to a parking facility at the Fruitvale Bay Area Rapid Transit (BART) station in Oakland. The process included a number of contentious meetings between BART and community representatives, but by sticking with the public involvement process, reaching out to partners, and being flexible and innovative,59 BART and the Unity Council (the neighborhood group that conceived the transit village project) were able to come through with a mutual win.

The project has transformed a community that lacked services and adequate pedestrian connections to the transit station into an attractive village with an elegant pedestrian
Engaging partners is a continual process. The most important lesson to keep in mind is that engaging partners is a continual process that involves planning, project development, and day-to-day management and service delivery. Public involvement is not an item to check off on a list. A collaborative approach to community engagement may be time-consuming, but it is increasingly being demanded by residents who want to ensure that they will have a continued say in changes that take place. As the Fruitvale Transit Village, the Evergreen Cemetery jogging path, and many other examples demonstrate, continuous public involvement often results in better projects that are fully used and benefit the community. Collaborative approaches ultimately result in greater citizen satisfaction and build a constituency of partners who have a stake in the success of the active living strategies employed in your community.

D. Promoting Awareness

For all of these strategies to work, individuals still need to understand the benefits of active living and good nutrition so that they can make conscious choices to lead healthy lifestyles. For this reason, education and awareness are critical components of an active living strategy. To increase awareness, local governments can employ a number of approaches, including:

- Media campaigns and advertisements on signs and billboards and through promotional materials. (See, for example, the accompanying description of the “Street Smart” campaign in the Washington, D.C. region.)
- Events to promote physical activity, pedestrian safety, and healthy eating, such as a walking campaign (for example, residents in Wray, Colorado, logged their walking miles as part of a community-wide effort to...
“Walk to the Moon”), participating in the national Walk to School Day, pedestrian awareness days, or healthy eating events or campaigns.

- Offering parks and recreation programs, such as fitness classes, community gardening, regular walking groups, etc.
- Partnering with employers, schools, community centers, places of worship, YMCAs, and other community organizations.
- Encouraging people in workplaces and public buildings to take the stairs instead of the elevator.

VI. CONCLUSION

As more local governments embark on efforts to promote active and healthy communities, it is important that they also ensure that the benefits of these initiatives reach all segments of the population. The first step is understanding that many individuals and communities—especially racial and ethnic minorities, people with lower incomes, women, and people of differing abilities and ages—experience disproportionately higher rates of chronic diseases associated with physical inactivity and poor nutrition. At the same time, as the population grows older and more diverse and a new generation approaches adulthood, local governments have an opportunity—and a responsibility—to ensure that all segments of the population fulfill their promise as healthy contributors to civic and economic life.

One step toward fulfilling this promise is identifying and removing the barriers that compromise certain individuals’ ability to live both healthy and productive lifestyles. Because active living is a new concept that has only recently focused attention on the needs of vulnerable populations, both researchers and local governments are in the early stages of identifying approaches to eliminate these barriers. However, some communities across the country (many of which are highlighted in this guide) are proving to be trailblazers in identifying new approaches that may serve as models for the next wave of local governments to emulate. As more local governments adopt and refine these best practices, the country will move closer to the promise of ensuring access to healthy lifestyles for all.

ADDITIONAL RESOURCES


Hobson, Jeff and Julie Quiroz-Martinez. Roadblocks to Health: Transportation Barriers to Healthy Communities. Oakland: Transportation for Healthy Communities Collaborative, 2002.


**USEFUL WEB SITES**

**Affordable Housing Design Advisor**
http://www.designadvisor.org/

**Active Living by Design**
http://www.activelivingbydesign.org

**Active for Life**
http://www.activeforlife.info

**Active Living Leadership**
http://www.activelivingleadership.org

**Active Living Network**
http://www.activeliving.org

**Active Living Research**
http://www.activelivingresearch.org

**Asset-Based Community Development Institute**
http://www.northwestern.edu/ipr/abcd.html

**Center for Community Change**
http://www.transportationequity.org/index.shtml

**Centers for Disease Control and Prevention**
http://www.cdc.gov

**The Center for Universal Design**
http://www.design.ncsu.edu/cud/

**The Funders’ Network for Smart Growth and Livable Communities**
http://www.fundersnetwork.org/

**Pedestrian and Bicycle Information Center**
http://www.pedbikeinfo.org

**PolicyLink**
http://www.policylink.org

**Prevention Institute**
http://www.preventioninstitute.org

**Robert Wood Johnson Foundation**
http://www.rwjf.org

**Transportation and Land Use Collaborative of Southern California**
http://www.tluc.net/

**Transportation Equity and Community Health**
http://www.transcoalition.org/c/teach/teach_home.htm

**The University of North Carolina at Chapel Hill Program for Ethnicity, Culture, and Health Outcomes**
http://www.minority.unc.edu/

**ENDNOTES**


3. Ibid.


8. Ibid.


24 Active Living and Social Equity


22. An excellent example of a local government putting these principles into action is the Contra Costa Transportation Authority Countywide Bicycle and Pedestrian Plan. See http://www.keta.net/CM/hip.htm.


25. Powell and others, “The Relationship Between Community Physical Activity Settings and Race, Ethnicity and Socioeconomic Status.”


28. Ibid. This publication includes a list of municipal park systems that currently have such committees.


31. For example, a study in Washington, D.C., found that the poorest two wards of the city had pedestrian fatality rates far higher than the rest of the city. See D.C. Environmental Network, D.C. at the Crossroads (Washington, D.C.: Friends of the Earth, 2000): 13, 20.


36. This has been done in several localities and metropolitan areas, including Louisville, Kentucky; Washington, D.C.; Lafayette, Indiana; Charlotteville, Virginia; and King County, Washington.


41. For more information on the relationship between schools and land use, see Constance E. Beaumont with Elizabeth Pianca, Sprawl and Heart Disease (Washington, D.C.: Transportation Research Board, 1996) for more information.

42. Jim Romeo, “The ABCs of Mixed Use Schools: Schools, Communities Learn Meaning of ‘Co-location’” Planning (July 1, 2004).

43. For a good example of a local safe routes to school initiative and links to other related resources, visit the Marin County, California, safe route to school Web site at http://www.saferroutestoschools.org.

44. Ronald Cotterill and Andrew Franklin, The Urban Grocery-Store Gap (Storrs, Conn.: Food Marketing and Policy Center, University of Connecticut, 1995), as cited in Jeff Hobson and Julie Quiroz-Martinez, Roadblocks to Health: Transportation Barriers to Healthy Communities (Oakland: Transportation for Healthy Communities Collaborative, 2002).


46. Ibid.


48. Please check http://icma.org/activeliving for more information on strategies to promote access to better nutrition, coming in 2005.

49. The Pedestrian and Bicycling Information Center has an excellent guide that can be used to determine the most appropriate funding source for a wide variety of pedestrian and bicycle projects. See “Choosing the Federal Program That Is Right for the Project” at http://www.walkinginfo.org/pp/funding/gov/index.htm.


52. See http://www.enhancements.org/.


57. The principles of “universal design” can often be helpful guideposts for designing facilities that serve the greatest number. According to North Carolina State University, universal design is “the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design.” See http://design.ncsu.edu/cud/index.html for more information.


59. For example, BART agreed to a complicated land swap that allowed the project developers to assemble enough land to make the project work.