



The Built Environment and the Public's Health

SUMMARY OF RECOMMENDATIONS

- Put the pedestrian first
- Employ walkability strategies
- Support ease of pedestrian movement
- Delineate the pedestrian corridor
- Focus on pedestrian safety
- Encourage mixed-use development
- Regulate connectivity

POLICY BRIEF NO. 1 | FEBRUARY 2011

■ Physical Activity and Health

Regular physical activity benefits both physical and mental health. **Being active can reverse normal aging-related memory loss, delay the development of Alzheimer's and reduce risk factors for such diseases as obesity, heart disease, diabetes and asthma.** It can also decrease stress and anxiety and prevent depression. Yet, despite the proven benefits of regular physical activity, most Americans are not sufficiently active. Inactivity is particularly prominent in rural settings, with rural residents being only half as active as their urban counterparts.^{1,2}

■ What is the built environment and how does it affect physical activity?

The built environment is an important factor impacting physical activity. Availability of recreational resources (parks and trails), land use characteristics (the number and proximity of destinations), neighborhood form characteristics (sidewalks and street lights) and community environment characteristics (community support, aesthetics and crime) are all community aspects that make up the built environment and that affect physical activity.^{3,4,5}

The distance necessary to travel from home to places like schools and grocery stores, the safety of public spaces and roads for pedestrians, the availability and convenience of facilities for physical activity and time spent commuting in cars all contribute to an individual's level of physical activity.⁶

The built environment can provide opportunities for residents to be more physically active, or it can hinder physical activity.

An individual's ability to be physically active depends on the community's safety and walkability. Walkable neighborhoods are characterized by proximity and connectivity. Proximity refers to distance between common destinations, such as homes, schools and shops. Connectivity refers to streets and whether they provide direct routes and safe connections to destinations for pedestrians and bicyclists.⁷

Not only can changes to the built environment improve physical activity, but they can also lower health care costs and encourage economic growth. Increasing physical activity can reduce the prevalence of expensive chronic disease conditions, thus lowering

FORM-BASED CODES IN ACTION

Abbeville, Louisiana reformed its building codes to adopt a SmartCode, a type of **form-based code**. In addition to including images of the intended results, the code includes language such as that in its purpose section, Section 1.2.2: “Neighborhoods and Regional Centers should be compact, pedestrian-oriented, and mixed-use.”¹⁰

PERFORMANCE-BASED CODES IN ACTION

Bucks County, Pennsylvania, was one of the first municipalities in the country to develop a **performance zoning code**. Bucks County adopted its ordinance in order to provide flexibility in the design of residential developments. It provides an excellent example of how to develop a zoning ordinance to achieve a specific objective.¹¹

CONNECTIVITY CODES IN ACTION

The Cary, North Carolina, land development ordinance requires any residential development to achieve a connectivity index of 1.2 or greater, unless the Planning Director determines that this requirement is impractical due to topography and/or natural features. In the event that this requirement is waived, a six-foot wide pedestrian trail must be provided to link any cul-de-sacs within residential developments.

healthcare costs. Parks, and the trails that connect them, are a good financial investment for communities. Increasing open spaces can increase property values, which boosts tax revenues and attracts new home buyers.

■ **A little goes a long way, especially when planning new developments.**

Any increase in physical activity levels can have positive health and economic benefits. It’s important to remember that the built environment is constantly changing. New developments are being constructed, and old ones are being updated. These constant changes provide opportunities to make important changes to the built environment to encourage increased physical activity.

■ **Zoning: What it is, how it hurts and how it can help.**

Zoning laws compartmentalize neighborhoods, designating what can and cannot be built within set bounds. Zoning can encourage physical activity, or it can hinder it. Conventional zoning segregates uses and supports residential subdivisions with “loops and lollipops,” as opposed to grids. This layout forces people to drive on most any trip outside of the subdivision. This can make it difficult, or even dangerous, for those who choose to walk. Many current zoning codes focus on the automobile instead of the pedestrian. Under conventional zoning models, residential and commercial districts are sufficiently far apart that walking to the grocery store or the bank is not a reasonable option, even when pedestrian facilities are provided. **Decision makers should implement requirements that developers consider the pedestrian first when designing new communities or modifying existing ones.**⁸

■ **Alternatives to traditional zoning.**

Form-based codes provide an alternative to conventional zoning codes. Form-based codes first focus on the design of spaces, buildings, and streets, and then on land uses. While conventional codes describe in words what cannot be done in a particular zone, form-based codes use text and images to show what should be done. By giving the developer a clearer picture of the intended result via the code, the final product more closely addresses the needs of the community.⁹

■ **Performance zoning.**

Performance zoning evaluates individual developments based on specific performance measures; this way, the zoning can be tailored to a community’s individual needs. This is accomplished by using a point system. Factors of high importance receive more points, and different types of development need to meet certain point totals. Communities wishing to improve walkability may give more points for factors like sidewalks and shorter block lengths.

■ **Connectivity codes.**

A growing number of municipalities are adopting “connectivity codes” as part of subdivision and land development ordinances, requiring well-connected networks in new developments.

■ **Overlay districts.**

Zoning provisions that allow for overlay districts provide more flexibility than traditional zoning codes. Overlay districts allow for additional regulations in specific geographic areas, thus permitting unique policies to be addressed in specific areas. The benefit is that policy changes can be focused on particular geographic areas. For example, a code could be amended to require new developments to accommodate walking and bicycling through construction of sidewalks and bike paths.

■ **Complete streets.**

Completing streets is an integral part of making any neighborhood more walkable. The goal is to design with every user in mind – from the driver to the pedestrian to the bicyclist to the public transit passenger. This includes promoting street designs that include ample sidewalks, bike lanes and clearly delineated crosswalks. Also, design features that narrow streets are used as a way to slow traffic. The slower a car is traveling, the less severe the injuries in the event of a crash.¹² By considering all potential users, streets can be made safer for everyone.

In some rural areas, this has been achieved through constructing shared-use paths that run parallel to busier thoroughfares. Pedestrians and bicyclists share the path and can travel free from interference from motorized vehicles. In other rural communities, creating a wide shoulder that can accommodate pedestrians, bicyclists and families with strollers has “completed streets.” When combined with a reduced speed limit, walking along the shoulder becomes a safe and feasible option for rural community residents.

COMPLETE STREETS IN ACTION

Erlanger, a Kentucky suburb, tackled its problem of insufficient sidewalk connectivity through an initiative called *Step Forward*. The goal of *Step Forward* is “to expand and complete the city’s sidewalk system. It is part of a larger program to promote community walkability and active living in Erlanger.” A survey identified all of the missing sections needed to complete a sidewalk loop throughout the city. The estimated cost for all needed sidewalk and crosswalk improvements is \$1.75 million. “Of course, the city doesn’t have that kind of money to complete this kind of project all at once,” said Bill Scheyer, Erlanger’s city administrator, “but now that we have the master plan, we can start chipping away at it.”¹³

In Marquette County, Michigan, the community came together to plan the Naquemanon Trails Network (NTN). “The NTN is the centerpiece of the county’s efforts to use regional cooperation to promote active living. The NTN is a proposed 500-mile interconnected land and water trail system that would provide opportunities for non-motorized transportation, preserve community character, provide recreation and exercise opportunities close to home and link communities to cultural and historical features.”¹⁴

This publication was supported by a grant from the Centers for Disease Control and Prevention (CDC) (3U58DP001987-01S2). Its contents are solely the responsibility of the authors and do not necessarily reflect the official views of the CDC, the Department of Health and Human Services, or the federal government.

RECOMMENDATIONS FOR DECISION MAKERS

- Put the pedestrian first when planning new communities or making changes to existing ones.
- Employ walkability strategies that improve the pedestrian environment.
- Support ease of pedestrian movement and enrich the quality of the public realm by providing appropriate connections in the public right-of-way. Require sidewalks and plan communities in a walkable grid.
- Encourage pedestrian travel by delineating the pedestrian corridor.
- Focus on pedestrian safety. Pedestrian safety is not only safety from automobile traffic, but also from community factors like unattended dogs and crime. Residents should feel safe using walking as a viable mode of transportation. Additionally, pedestrian safety is the primary concern in designing and managing street crossings. Crossings that are safe, easy to use and well-marked support active, pedestrian-friendly environments.
- Modify zoning codes to encourage mixed-use development and more densely laid-out neighborhoods.
- Consider regulations that require greater connectivity in future developments. The community can regulate connectivity by requiring developers to meet connectivity ratios.

References

1. Shores, K.A., West, S.T., et al (2009) Extra-Individual Correlates of Physical Activity Attainment in Rural Older Adults. *Journal of Rural Health*, 25(2), 211-218.
2. Vogel, T. & Brechat, P.H. (2009) Health Benefits of Physical Activity in Older Patients: A Review. *The International Journal of Clinical Practice*, (63)2, 303-320.
3. Berrigan, D. & Troiano, R.P. (2002) The Synthesis Project Policy Brief: The Association between Urban Form and Physical Activity in U.S. Adults. *American Journal of Preventive Medicine*, (23)2S1, 74-79.
4. Doyle, S., Kelly-Schwartz, A., Schlossberg, M., & Stockard, J. (2006) Active Community Environments and Health: The Relationship of Walkable and Safe Communities to Individual Health. *Journal of the American Planning Association* (72)1, 19-31.
5. Ewing, R., Schmid, T., Killingsworth, R., Zlot, A., & Raudenbush, S. (2003) Relationship between Urban Sprawl and Physical Activity, Obesity and Morbidity. *American Journal of Health Promotion*, (18)1, 47-57.
6. Giles-Corti, B., & Donovan, R.J. (2002) Socioeconomic Status Differences in Recreational Physical Activity Levels and Real and Perceived Access to Supportive Physical Environment. *Preventive Medicine* (35)6, 601-611.
7. Pronk, N., Goodman, M., et al (1999) Relationship Between Modifiable Health Risks and Short-term Health Care Charges. *The Journal of the American Medical Association* (282)23, 2235-2239.
8. Zoning Talking Points. Planning for Healthy Places. Public Health Law & Policy.
9. Pedestrian and Bicycle Information Center, available at <http://www.walkinginfo.org/develop/policies-land.cfm>.
10. *SmartCode Complete*. PlaceMakers. <http://www.smartcodecomplete.com/learn/links.html> (accessed Oct. 16, 2010).
11. *Performance Zoning Model Ordinance*. Bucks County Planning Commission (1996) <http://www.smartcommunities.ncat.org/codes/bucks.shtml> (accessed Oct. 16, 2010).
12. *Complete Streets Fundamentals*. National Complete Streets Coalition (2005) <http://www.completestreets.org/complete-streets-fundamentals> (accessed Oct. 16, 2010).
13. *Active Living Leadership* (2004) Healthy Community Design: Success Stories from State and Local Leaders. San Diego State University. Available at: <http://www.rwjf.org/prograomareas/resources/product.jsp?id=14944&pid=1138&gsa=1>.
14. *Active Living Leadership* (2004) Healthy Community Design: Success Stories from State and Local Leaders. San Diego State University. Available at: <http://www.rwjf.org/prograomareas/resources/product.jsp?id=14944&pid=1138&gsa=1>.