

The Surveys Are In! The Role of Local Government in Supporting Active Community Design

Marla Hollander, Sarah Levin Martin, and Tammy Vehige

Background: Recent studies detailing how the built environment affects health have found that land use and community design may have an impact on reducing sedentary lifestyles and increasing physical activity. **Method:** However, there is little information available about the attitudes of local officials and professional staff who often are directly responsible for making decisions about land use and community design. **Results:** This opportunistic study reports findings across five major surveys that investigated healthy community design knowledge, attitudes, and practice among local officials and professional staff. When possible, comparisons and contrasts of survey responses and policy implications are discussed. **Conclusions:** The sharing of these data across professions is an important step toward enhancing collaboration in the fields and in better understanding the needs of local leaders related to active living and healthy community design.

KEY WORDS: active living, environmental policy, healthy community design, physical activity

The connection between the environment and health is well known, although, in recent times, seemingly it has been forgotten. For example, in the 1800s, Frederick Law Olmsted built city parks in the heart of New York City and Atlanta, understanding that city dwellers would benefit from fresh air and open space. Of late, millions of acres of rural land have been transformed into low-density neighborhoods that separate residences, schools, jobs, places of worship, services, and shopping. A growing body of literature shows associations between the built environment, transportation infrastructure, and physical activity.¹⁻⁵ The built environment, which includes urban design, land use, recreational facilities, and available public transporta-

tion, can facilitate or hinder physical activity. Research shows that creating or enhancing access to places for physical activity can improve the physical activity level of residents. Furthermore, it is suspected and currently under review by the Centers for Disease Control and Prevention (CDC) that improving urban design and transportation infrastructure at the street or community level has similar benefits.⁶ On the other hand, an environment with minimal recreational facilities or neighborhood destinations, limited pedestrian facilities and public transportation, safety concerns, or insufficient lighting can hinder physical activity.⁷ Economically, the cost associated with physical inactivity brings new urgency to the seriousness of this problem. In 2000, \$76 billion was spent on direct medical expenses associated with physical inactivity.⁸

Research is being conducted by a wide group of professionals. In September 2003, the *American Journal of Public Health* and the *American Journal of Health*

Work on this investigation was conducted while Ms Hollander was at San Diego State University.

The authors thank Martin Harris, Andrea Lasker, Nadejda Mishkovsky, Marya Morris, Valerie Rogers, Karen Roof, and Jessica Solomon for providing access to survey data and serving as reviewers. We also thank Kate Kraft and the Robert Wood Johnson Foundation for their support in this effort.

Corresponding Author: Marla Hollander, MPH, CHES, MK2 Consulting, 6310 Huntington Dr, Carlsbad, CA 92009.

Marla Hollander, MPH, CHES, is an independent consultant assisting organizations and communities in creating healthy places and spaces. Most recently, Ms Hollander was the founding director of Active Living Leadership, a national initiative supporting state and local, elected and appointed officials in creating healthy community design.

Sarah Levin Martin, PhD, is the cofounder of PEANUT (copyright 2004; Program Evaluation Across the Nation Using Technology). She is currently doing business as PEANUT and serves as the lead evaluator for NikeGO. Dr Martin was a health scientist at the Centers for Disease Control and Prevention in the Physical Activity and Health Branch for more than 5 years.

Tammy Vehige, MEd, CHES, is a doctoral student in the Social and Behavioral Sciences Department at Boston University's School of Public Health, Boston, Massachusetts. Earlier she was at the Centers for Disease Control and Prevention, Division of Nutrition and Physical Activity.

Promotion^{4,5} published special issues to highlight the most recent research on how the built environment affects health, and the *Journal of the American Planning Association*⁹ followed suit in winter 2006. These special issues reveal how a variety of disciplines can transform thinking and join together to embrace the promotion of health through community design.

Public opinion surveys also demonstrate that the American public is supportive of healthy community design.¹⁰ A convenience survey reveals that 78 percent of the Americans supports policies to curb urban sprawl and 77 percent of Americans support making neighborhoods more pedestrian-friendly instead of building new highways.¹¹ A poll commissioned by Smart Growth America in 2000 found that 78 percent of Americans favor “smart growth” and 80 percent of respondents favored more cooperation on growth management among local governments, creating zones for green space and farmland.¹²

Although it is important to understand public sentiments and science connecting land use and physical activity, it may be equally important to understand the attitudes and practice-based needs of local officials responsible for land use and public health activities. The purpose of this opportunistic study is to report the findings across five major surveys investigating healthy community design knowledge, attitudes, and practice among a variety of local officials and to discuss policy implications. The sharing of these data may be an important step toward enhancing collaboration across fields and in better understanding the needs of local leaders and professional staff related to healthy community design.

● Methods

In 2004, Active Living Leadership, a national program supported by the Robert Wood Johnson Foundation, sponsored a survey of two partner organizations: The International City/County Management Association

(ICMA) and the National Association of Counties (NACo). The American Planning Association (APA), National Environmental Health Association (NEHA), and National Association of County and City Health Officials (NACCHO) conducted similar surveys of their membership.

This investigation on the role of local governments in community design seeks to inform various partners and other external groups of concurrent surveys in the field with the hope that common themes could be assessed. In doing so, before data collection, Active Living Leadership fostered sharing of survey tools among organizations to better enable future joint analysis by using similar survey questions. Scientists at the CDC assisted in developing methods to conduct a joint assessment of findings.

Survey respondents

Survey respondents were derived from five different professional membership organizations: ICMA, NACo, NEHA, NACCHO, and APA. See the Appendix for association descriptions. Table 1 summarizes survey methods and response rate for each organization.

International City/County Management Association

The ICMA survey included 12 questions. The survey assessed the level of importance of physical activity opportunities and the degree to which local governments encourage or provide these opportunities, the factors associated with achieving active living communities, the actions that could be or have been taken to address health problems related to physical inactivity, and community barriers in promoting active living behaviors.

In February 2004, ICMA distributed a paper version of the survey to chief administrative officers in municipalities (cities, towns, townships, villages, etc) with populations 10 000 and above. A second mailing followed in March 2004. Of 3 246 municipal representatives surveyed, 959 responded, for a response rate of 29.5 percent.

TABLE 1 ● Survey methods and response rate

Association	Number of questions	Methods (mailing vs telephone)	Number of contacts	Number of respondents	Response, %
ICMA	12	Mail	2	959	29.5
NACo	12	Mail, fax, and e-mail	3 ^a	128	15.8
NEHA	8 ^b	Online survey	3	409	18
NACCHO	15	Online survey	3	395	30
APA (2003)	20	Online survey	1	1 000 ^c	N/A ^c
APA (2004)	15	Online survey	3	543	27

Abbreviations: APA, American Planning Association; ICMA, International City/County Management Association; NACCHO, National Association of County and City Health Officials; NACo, National Association of Counties; NEHA, National Environmental Health Association.

^aSurvey recipients received the survey via few multiple channels at random intervals to increase response rate.

^bThe full survey had 34 questions, 8 of which pertained to land use and health.

^cThe APA targeted 1 000 responses in a 10-day period and did not include responses over the target number or past the 10-day period.

National Association of Counties

The NACo survey was identical to that of the ICMA survey. The NACo mailed or faxed the survey to county officials (795) in February 2004. Notices for an identical Web version of the survey were sent out in the NACo newsletter in March 2004. The survey was addressed to chief elected officers with instructions to pass it on to the most appropriate staff person. Survey responses were accepted by fax, mail, and electronically. Senior managers completed the majority of the surveys. Survey responses were received from 128 counties, ranging in size with a population from less than 10 000 to those in excess of 1 million. Responses were received from 38 states that represent nearly all regions of the country. The overall response rate was 15.8 percent.

National Environmental Health Association

In March 2004, the NEHA distributed its National Environmental Public Health Tracking and Land Use Planning questionnaire. The 34-question survey asked a variety of questions including those investigating activity focus, data-sharing needs and practices, surveillance programs, and of land use, planning, and public health issues. This study analyzes data from the eight land use and public health issue questions. These questions focused on importance, involvement, barriers, resource needs, communication between the planning and public health fields, and funding.

In March 2004, a broadcast e-mail containing a link to an online survey was sent to 2 274 NEHA members. After two reminders approximately 3 weeks apart, the response rate was 18 percent with 409 respondents from 42 continental states. Most respondents served communities of 25 000 to 100 000 residents.

APA 2003

The APA survey in 2003 included 20 questions. The survey asked respondents to describe their jurisdiction and to address policy-making and public opinion programs and commitments to support physical activity land use: smart growth, zoning and subdivision regulations, public improvements, and information needs. The purpose of the survey was to measure planners' attitudes, opinions, and the current practice regarding the relationship between planning and community design and its effect on the public's ability to incorporate physical activity into daily life as a means of combating obesity, overweight, and related health problems.

In March 2003, a broadcast e-mail containing a link to an online survey was sent to approximately 20 000 individual members of the APA who are classified as working as planners for municipal or county jurisdictions. The APA had a targeted number of responses of

1 000. Completed surveys were tallied over a 10-day period until 1 000 usable responses had been received, after that no additional results were tabulated; hence, a response rate cannot be calculated.

APA 2004 and NACCHO

The survey instrument was designed collaboratively by the APA, the NACCHO, and representatives from the CDC. The questions to each recipient group differed only with respect to the audience being addressed, either planners or public health officials. The survey included 15 questions and asked about the jurisdiction the respondents served; their feelings about the connections between planning, land use, and public health; collaborations to improve health and safety; policies, goals, and objectives that address public health; and technical assistance and educational tools.

In June 2004, the APA sent a broadcast e-mail containing a link to an online survey to 1 317 NACCHO members and 2 003 APA members. Given the disparate membership structures of the APA and the NACCHO, an e-mail was sent to all 1 317 members of the NACCHO classified as individual members who work for a local health agency; whereas, for APA, a random sample of 2 003 recipients was selected from a total e-mailable population of 21 452 individual members who work for a local planning agency. E-mail recipients who did not respond immediately on receiving the first broadcast e-mail containing the survey link were sent a reminder e-mail within 48 hours; recipients who had still not responded 7 days after the first e-mail were sent a second reminder. In total, 938 usable responses were received: 395 from NACCHO members (30% response rate) and 543 from APA members (27% response rate).

Statistical analyses

The authors at the CDC received a copy of the questionnaires and the raw data (Excel spreadsheets, stripped of identifiers) from the collaborating organizations. They independently reviewed the surveys and found common themes and common items and compared their findings to reach a consensus for each theme and item. The common themes were barriers to addressing physical activity, technical assistance needs, promotion of walking and bicycling through urban design, and other actions taken, as represented in Tables 2–5, respectively. The wording in the first column of the tables is highly representative of the survey wording. The only items deemed to be questionable in terms of grouping (ie, related) are given as footnotes. After the questionnaires were examined, the data were exported to SAS, Version 9 (Cary, North Carolina), and analyzed. Percentages and 95 percent confidence intervals (CIs) were calculated for each survey response of interest.

TABLE 2 ● Barriers to addressing physical activity, in percentage (95% CI)

	NACo (<i>n</i> = 128)	ICMA (<i>n</i> = 959)	APA (<i>n</i> = 361)	NEHA (<i>n</i> = 409)	NACCHO (<i>n</i> = 368)
No political will to support	18 (11–25)	0	...	29 (25–33)	...
Physical activity is a nondepartmental issue	32 (24–40)	27 (24–30)	0	...	0
Priorities do not include physical activity	33 (25–41)	38 (35–41)	35 (30–40)	20 (16–24)	29 (24–34)
Collaboration	12 (6–18)	0	10 (7–13)	...	...
Infrastructure	23 (16–30)	25 (22–28)	...	18 (14–22)	...
Funding, staff, resources	72 (64–80)	66 (63–69)	59 (54–64) ^a	38 (33–43)	77 (73–81) ^a
Knowledge	17 (10–24)	18 (16–20)	41 (36–46)	23 (19–27)	40 (35–45)
No barriers	2 (0–4)	0	0	8 (5–11)	0

Abbreviations are explained in Table 1.

^aAverage of two questions, one assessing funding and one assessing staff resources.

Significant differences were determined by nonoverlapping CIs.

● Results

Importance of physical activity

Among planners, 27 percent of respondents indicated that physical activity was an important issue; city and county elected (NACo) and appointed (ICMA) officials felt it was more important (45% and 55%, respectively).

The same three surveys also asked the respondent's perception of the level of importance physical activity has for the residents. Less than one third of planners assumed that residents perceived physical activity as important, whereas two thirds of city and county officials assumed that residents perceived physical activity as important.

Barriers

Barriers to addressing physical activity within the discipline are summarized in Table 2.

The largest barrier for all organizations is inadequate funding or staff resources. Having no political will to

support it was a barrier for 18 percent of NACo respondents and 29 percent of NEHA respondents; it was not assessed by the APA or the NACCHO in 2004, although in 2003, 25 percent (95% CI, 22–28) of APA respondents cited it as a barrier. Close to one third of NACo and ICMA respondents cited that physical activity was a nondepartmental issue; this was not a barrier for either the APA or the NACCHO, although the year before (2003) 40 percent (95% CI, 36–44) of APA respondents believed it was a barrier. Lack of knowledge is a barrier for approximately 40 percent of APA and NACCHO respondents; this is less of a barrier among respondents of the other organizations.

Technical assistance needs

Most surveys assessed what the needs of the respondents were to address physical activity in their discipline. The identified needs are summarized in Table 3. As shown, needs were fairly similar across three survey groups, but NEHA respondents expressed less of a need in most areas. For example, 50 percent or more of NACo and ICMA respondents cited that sample policies and programs would be helpful in comparison with only 17 percent (95% CI, 14–20) of NEHA respondents.

TABLE 3 ● Technical assistance needs, in percentage (95% CI)

	NACo (<i>n</i> = 128)	ICMA (<i>n</i> = 959)	APA ^a (<i>n</i> = 660)	NEHA (<i>n</i> = 409)	NACCHO
Sample policies, programs, zoning codes	59 (50–68)	50 (47–53)	...	17 (13–21)	...
Best practices/case studies	55 (46–64)	42 (39–45)	48 (44–52)	21 (17–25)	...
Increased training/education	42 (33–51)	28 (25–31)	46 (42–50)	32 (27–37)	...
One-stop shop			75 (72–78)	32 (27–37)	...
Data and statistics	36 (28–44)	24 (21–27)	30 (27–33) ^b	23 (19–27)	...
Access to local experts, funders, and community groups	38 (30–46)	31 (28–34)	...	19 (15–23)	...
Network to peers	17 (10–24)	12 (10–14)	27 (24–30)	17 (13–21)	...
New tools	...	...	43 (39–47)	19 (15–23)	...

Abbreviations are explained in Table 1.

^aAPA 2003 data; not assessed by APA 2004 or NACCHO.

^bAverage of local data on current conditions regarding residents' health and physical activity levels and local data on current conditions regarding residents' access to parks trails and other recreational facilities and academic articles that provide evidence of the relationship between community design and physical activity.

TABLE 4 ● Promote walking and bicycling through urban design, in percentage (95% CI)

	NACo (<i>n</i> = 128)	ICMA (<i>n</i> = 959)	APA 2003 (<i>n</i> = 660)
Implement zoning to support active living	20 (13–27)	40 (37–43)	17 (14–20) ^a
Locate schools in walkable neighborhoods	16 (10–22)	35 (32–38)	16 (13–19) ^b
Require streets to be designed with pedestrians in mind	24 (17–31)	46 (43–49)	55 (50–60) ^c
Developed a system of parks and trails incorporating neighborhood parks	39 (31–47)	54 (51–57)	33 (28–38) ^d
Introduced initiatives that link biking, walking, health, and community design	68 (60–76)	69 (66–72)	55 (50–60) ^e

Abbreviations are explained in Table 1.

^aRevised zoning to increase density to increase alternative modes of travel.

^bUse trails to connect common destinations such as neighborhoods and schools.

^cRequire sidewalks in new residential areas; related question: 14 percent have connectivity plans that decrease block size and the number of cul de sacs to increase multiple routes of travel.

^dRequire recreation or open space be set aside in new subdivisions.

^eCreate walkable communities as a smart growth policy.

NEHA respondents were additionally asked about sample zoning codes, and 13 percent (95% CI, 10–16) responded affirmatively. Approximately a quarter or less of respondents thought networking with peers would be helpful (APA 2004 and NACCHO did not assess).

Promote walking and bicycling

Table 4 highlights actions taken by survey respondents that directly address active living and community design. Three of the surveys asked specific questions about the policies that promote walking and biking. The most reported policy already implemented among

the three organizations (NACo, ICMA, and APA) was introducing initiatives that link biking, walking, health, and community design (68% NACo, 69% ICMA, and 55% APA). (The APA asked the question differently; see Table 4.) ICMA respondents consistently answered that several of the listed active living actions could be, or were being, undertaken by their local government more often than NACo respondents. Related, but not identical, questions were assessed by the APA in 2003; affirmative responses range from 14 percent (have connectivity plans that decrease block size and the number of cul de sacs to increase multiple routes of travel, not shown in the table) to 55 percent (require sidewalks in new residential areas and create walkable communities

TABLE 5 ● Other actions

	NACo (<i>n</i> = 128)	ICMA (<i>n</i> = 959)	APA (<i>n</i> = 361)	NEHA (<i>n</i> = 409)	NACCHO (<i>n</i> = 368)
Collaboration with					
Planners/developers			...	50 (45–55)	57 (52–62)
Public health			36 (31–41)	...	...
Parks and recreational facilities			54 (49–59)	14 (11–17)	55 (50–60)
Public works			48 (43–53)	...	52 (47–57)
Transport			49 (44–54)	17 (13–21)	26 (22–30)
School			31 (26–36)	...	81 (77–85)
Public safety			42 (37–47)	...	64 (59–69)
Engineering			32 (27–37)	...	20 (16–24)
Bike/pedestrian injury prevention			23 (19–27)	...	45 (40–50)
Citizen advisory group			6 (4–8)	...	14 (10–18)
Local officials			...	59 (54–64)	...
Implement					
Programs for PA	...	...	27 (22–32)	19 (15–23)	75 (71–79)
Walk to school	8 (3–13)	0	20 (16–24)	9 (6–12)	12 (9–15)
Plans consider					
PA/health	18 (11–25)	0	(8–36)	47	(4–25)
Safety	23 (16–30)	0	(20–84) ^a	...	...
Open space required in subdivisions			33 (29–37) ^a		
Preserve open space			66 (62–70) ^a	23 (19–27)	

Abbreviations are explained in Table 1.

^aAPA 2003 (*N* = 660).

as a smart growth policy). In 2004, APA and NACCHO respondents were asked specific questions regarding their review of subdivisions plans. Differences in responses related to active travel were significant: review subdivision plans for pedestrian connections to common destinations (68% APA vs 8% NACCHO) and pedestrian safety (64% APA vs 13% NACHHO).

Other actions

The questionnaires assessed an array of other actions. Where possible, comparisons are shown in Table 5.

Collaboration

A common action taken by the APA, NEHA, and NACCHO survey respondents was collaboration between disciplines (collaboration was not assessed by the ICMA and the NACo). As shown, more health officials (NACCHO and NEHA) indicate that they collaborate with planners and developers than planners (APA) who indicate they do with public health officials. More planners (49% [95% CI, 44–54]) and NACCHO (26% [95% CI, 22–30]) respondents collaborate with transportation than do NEHA (17% [95% CI, 13–21]) respondents. Also, more planners (54% [95% CI, 49–59]) and NACCHO (55% [95% CI, 50–60]) respondents collaborate with parks and recreation departments than do NEHA (14% [95% CI, 11–17]) respondents. Not shown in the table, about one third of ICMA (35% [95% CI, 32–38]) and NACo (33% [95% CI, 25–41]) respondents partner with nonprofit local business and community organizations. Similarly, 39 percent (95% CI, 36–42) of ICMA respondents and 31 percent (95% CI, 23–39) of NACo respondents facilitate collaboration among governmental departments. Also not shown, NACCHO and APA respondents (2004) who serve on the following entities: local planning commission (12% and 4%, respectively), zoning board of appeals (3% and 1%, respectively), and bicycle and pedestrian advisory committee (11% and 7%, respectively). NEHA respondents present information to other agencies (45%), participate on planning boards or attend meetings (21% and 37%, respectively), participate in development of land use plans (28%), and participate in community visioning process (27%). Note that 64 percent of APA 2003 respondents undertook visioning processes of community workshops that included discussions of community design, resident mobility, and physical activity.

Implementing physical activity programs

For implementing physical activity programs, 75 percent of NACCHO respondents answered affirmatively (see Table 5). All five organizations assessed walk to

school efforts, and approximately 10 percent of each organization other than ICMA (0%) reported implementing these programs.

Pedestrian safety

Pedestrian safety measures are summarized in Table 4. The planners appear to be most involved than the other organizations. For example, in 2003, more than 80 percent used pedestrian crossings, pavement stripping, and varied pavement for the purpose of pedestrian safety.

Other

Other items not shown in the table are notable. All assessed one or more questions related to education and/or advocacy: 25 percent (95% CI, 17–33) of NACo respondents and 16 percent (95% CI, 14–18) of ICMA respondents educate school officials on active living; 28 percent (95% CI, 20–36) of NACo and 36 percent (95% CI, 33–39) of ICMA respondents report introducing active living into public dialogue. In 2004, 7 percent (95% CI, 4–10) of APA respondents and 15 percent (95% CI, 11–19) of NACCHO respondents conducted trainings on pedestrian safety. Among NEHA respondents, 45 percent (95% CI, 40–50) present information to other agencies, officials, or community, and 34 percent (95% CI, 29–39) testify at planning/zoning meetings.

Diverse questions assessed one or another aspect of financing. Of planners, 63 percent (95% CI, 59–67) increased funding for trails, bikeways, and other nonmotorized forms of transportation; 2 percent (95% CI, 0–4) of NACo respondents used revenue-raising methods to fund public health programs (0% of ICMA).

● Discussion

America is facing an epidemic of obesity and related health problems. Recent research indicates that the built environment does have an impact on physical activity levels.^{1,2,4–7,9,13} As a result of findings from such studies, local officials are beginning to invest in connecting community design issues and health priorities into land use policy.^{14,15} For instance, the *Seattle Times* recently reported that King County has taken on such actions as creating health impact checklists for new development projects and is actively supporting mixed-use development that encourages more active transportation.¹⁶ The following discussion focuses on

- key survey findings, including collaboration opportunities, barriers, and technical needs of respondents related to healthy community design and active living;

- policy implications related to survey findings; and
- future suggestions for discussion, practice, and research related to healthy community design attitudes and practices of local officials.

Results from the five surveys suggest that local officials from diverse perspectives have an interest in physical activity and healthy community design, although the extent to which these disciplines place emphasis varies. It is encouraging to find that professional organizations serving these professionals show interest in learning more about potential member roles and in supporting activities to address physical inactivity.

Several of the findings suggest that there is an interest in more cross-discipline communication and dialogue. Lawyers and researchers alike recognize the weighty importance of collaboration and mention an array of disciplines that include transportation planners, urban planners, architects, landscape architects, public health officials, environmentalists, pedestrian and bicycling advocates, developers, business leaders, and others.¹⁷⁻¹⁹ The general findings from these surveys indicate that although many local officials support healthy community design, active living, or physical activity programming, they are not fully aware or informed of the actions, attitudes, and perceptions of like-minded groups of professionals who have roles in the design of community. For instance, more than 50 percent of ICMA members responded that physical activity/active living was an important community design issue, but they did not mention that their plans considered health or physical activity. Also of note, planners seem to underestimate the value that residents place on physical activity. Yet, there is a growing body of consumer research suggesting that a large percentage of Americans support making neighborhoods more pedestrian friendly.¹⁰⁻¹² Less than one third of APA respondents assumed that residents perceived physical activity as important. It was further noted that planners were less likely to collaborate with public health officials in comparison with public health officials who were to collaborate with planners. Also, less than 50 percent of APA members collaborate with transportation professionals, and even fewer NACCHO and NEHA members do (<30% and <20%, respectively). On the other hand, more than half of APA and NACCHO members collaborate with parks and recreation departments, which relates to another policy-oriented suggestion to improve active living; that is, providing parks and protecting open space.¹⁷ Although many professional and political leaders are supporting aspects of healthy community design, better communication and insight among and between disciplines are needed.

Information sharing across various disciplines could address some of the technical assistance needs and bar-

riers. Public health officials can educate city and county officials on the aspects of the built environment that affect physical activity, and thereby better health. Planners and environmental protection professionals can inform health officials about feasible and appropriate design. And public health, planning, and environmental protection professionals can inform local officials about promising healthy community design practices. As additional efforts improve the built environment, it is important to document and share these experiences with others.

In addition to the need for communication among local leaders and professionals, it is necessary to connect the efforts of local leaders with state and federal policy makers. For instance, according to the National Conference of State Legislators, the state legislature plays an important role in encouraging walking and biking through state policy approaches and programs such as safe routes to schools, incentives for mixed-use development, and the integration of biking and walking amenities into highway projects.²⁰

Not deeply probed in any of the discussed surveys, the issue of current zoning laws and ordinances as barriers to healthy community design is real. Current zoning creates barriers to physical activity by separating land uses, creating automobile-dependent communities, perpetuating large lot development, overlooking the importance of human scale, and preventing connections between origins and common destinations. By using routine physical activity as a proxy for healthy community design, we can see that many of the respondents do not connect their healthy design practices with physical activity directly. Although public health played a central role in establishing zoning laws in the early part of the 20th century, it has played almost no role in maintaining or changing zoning laws in the past half century.¹⁷ From a policy perspective, it appears the time has come for public health to reestablish this role.

The public health community needs to consider a shift from the communicable diseases model, which was the impetus for discrete zones, to a focus on reducing chronic diseases, which require community design that offers a mix of land uses. In doing so, it may be time for policy changes that revamp current zoning laws to enable healthier places for today and promote a healthier lifestyle. To make this happen, professional associations and public health representatives, such as those queried, will need to testify before state and local governments.¹⁷ According to the NEHA survey, 34 percent of members have testified at planning or zoning meetings; other surveys did not assess this question directly, although as mentioned, all participated in advocacy or education to some degree.

Policies and legal action will help overcome barriers including old zoning laws and other barriers such

as lack of funding, staff, and resources. Two recent publications^{13,18} suggest particular policy actions and legal avenues to support more active lifestyles. One suggestion is to adopt laws and policies that work to revitalize existing communities by encouraging the reuse of buildings and land and promoting more efficient pedestrian-oriented development patterns in new communities. This suggestion would lead to a more compact, mixed environment reflecting older city designs. The scientific basis for such policy, which has been proposed by Berrigan in his study, used age of housing as a marker for urban design. The study found that adults who lived in homes built before 1946 and from 1946 to 1973 (most often characterized as walkable and mixed-use neighborhoods) were significantly more likely to walk 1+ miles 20 or more times per month than those who lived in homes built after 1973.²¹

Although all organizations cited the lack of funding, staff, or resources to address physical activity and healthy community design as major barriers, we also found encouraging results that suggest the recent availability of new resources. With the recent reauthorization of the federal Transportation Equity Act for the 21st Century (TEA-21), a larger proportion of dollars are allocated for nonauto modes of travel; for example, pedestrian and biking trails, safe routes to schools, and Complete Streets programs.

More important, public healthcare professionals might consider lack of funding not as an actual barrier but as an opportunity to pursue nontraditional solutions. The built environment is constantly changing and being developed. According to a 2004 Brookings report, about 50 percent of the built environment needs for the year 2030, accounting for where Americans live, work, and shop, have yet to be built.²² Local governments, including public health officials, have the opportunity to shift current resources to land use policy that enables activity-friendly lifestyles and environments.

Finally, while the technical needs of respondents varied, there were some similarities such as need for increased training and education and the provision of sample policies and case studies. From a policy perspective, it may be helpful for these types of resources to address multiple audiences.

● Study Limitations

Several limitations to this research must be acknowledged. First, the surveys were conducted by the member organizations and the psychometric properties of the survey instruments were not determined. Second, the response rates in general were low, thereby limiting the generalizability of the findings to the larger membership or profession as a whole. The sample size of

the NACo survey ($n = 128$) was too small for reliable estimates; therefore, significant differences between the NACo respondents and others were not detected as often as might have been detected with more stable estimates. Third, although the compared questions were similar across surveys, they were not the same, which leaves room to question comparative results. Nonetheless, the opportunity to compare and contrast five large surveys conducted in the same time frame is quite remarkable and worthy of notice. Finally, there are several other populations for which it would be helpful to compare similar survey responses, such as private sector builders and developers who work with local officials to build and design projects. We hope the reported results will inspire more rigorous investigation and foster communication across disciplines to address the dire issue of physical inactivity in this country.

● Future Direction

It appears that physical activity is being added to the agenda of local officials, probably driven in large part by the obesity epidemic (M. Harris, oral communication, 2005).^{23,24} In June 2005, the US Conference of Mayors passed a resolution in support of a Complete Streets agenda, which would foster a network of trails and transit connecting homes, jobs, schools, shops, families, and friends, and offer on-street pedestrian and bicycling facilities. The mayors urged Congress and the administration to require state transportation departments and metropolitan planning organizations to adopt Complete Streets policies and called on the US Department of Transportation to support such efforts through best practices, technical assistance, and other means. Similarly, a recent resolution from the NACo on haphazard land use and growth included statements about providing more transportation choices to ease congestion, boost economic productivity, and provide more opportunities for walking and cycling. Also, a resolution from the National Black Caucus of State Legislators includes a statement resolving that members rethink the built environment for its health impact in the context of youth obesity prevention and on opportunities for physical activity. Government leaders and other professionals are paying more attention to healthy community design and the role they can play in supporting environments that enable healthy lifestyles. Further research identifying the knowledge, attitudes, and actions of these professionals is needed to inform the development of effective and needed tools and resources that support healthier places and spaces. Furthermore, because local officials act on the needs and desires of their constituencies, additional research is needed to

determine the level of public interest in environmental policy interventions and how active living and healthy community design may help address necessary policy changes.

● Appendix

Association Descriptions

Members of the APA are practicing planners, citizens, and elected officials. The APA is a nonprofit public interest and research organization committed to urban, suburban, regional, and rural planning. The APA and its professional institute, the American Institute of Certified Planners, advance the art and science of planning to meet the needs of people and society.

The ICMA is a professional and educational organization for chief appointed managers, administrators, and assistants in cities, towns, counties, and regional entities throughout the world. Since 1914, it has provided technical and management assistance, training, and information resources to its members and the local government community.

The NACCHO is a national organization representing local public health agencies, including counties, cities, city/counties, districts, townships, and tribal communities. It works to support efforts that protect and improve the health of all people and all communities by promoting national policy, developing resources and programs, seeking health equity, and supporting effective local public health practice and systems.

The NACo is a membership organization serving more than 2 000 counties and representing in excess of 80 percent of the nation's population. With its headquarters on Capitol Hill, the NACo is a full-service organization that provides an extensive line of services including legislative, research, technical, and public affairs assistance, as well as enterprise services to its members.

The NEHA is professional society composed of a diverse group of 5 000 members from city, county, state, and federal government organizations, academic institutions, private sectors, and national organizations. Its programs aim to advance the environmental health field and include meetings and technical workshops, publications, credentialing, the *Journal of Environmental Health*, research and development, and marketing and sales.

REFERENCES

1. Ewing R, Schmid T, Killingsworth R, Zlot A, Raudenbush S. Relationship between urban sprawl and physical activity, obesity and morbidity. *Am J Health Promot.* 2003;18(1):47–57.
2. US Department of Transportation, Federal Highway Administration. *Journey to Work Trends in the United States*

and Its Major Metropolitan Areas 1960–2000. Washington, DC: US Department of Transportation, Federal Highway Administration; 2003. FHWA-EP-03-058. (3). Exhibit 3.4 Travel Time to Work: 1980–2000. <http://www.fhwa.dot.gov/ctpp/jtw/jtw3.htm#exh3.4>. Accessed July, 10, 2006.

3. Roberts D, Fuehr U, Rideout V. Kaiser Family Foundation. Generation M: media in the lives of 8–18 year-olds. <http://www.kff.org/entmedia/upload/Generation-M-Media-in-the-Lives-of-8-18-Year-olds-Report.pdf>. Published 2005. Accessed January 31, 2006.
4. Built environment and health issue. *Am J Public Health.* 2003;93:1369–1608.
5. Health promoting community design. *Am J Health Promot.* 2003;18(special issue):1–122.
6. Centers for Disease Control and Prevention. Guide to community preventive services. Physical activity. <http://www.thecommunityguide.org/pa/default.htm>. Accessed January 31, 2006.
7. Saelens BE, Sallis JF, Frank LD. Environmental correlates of walking and cycling: findings from the transportation, urban design, and planning literatures. *Ann Behav Med.* 2003;25:80–91.
8. Pratt M, Macera CA, Wang G. Higher direct medical costs associated with physical inactivity. *Phys Sports Med* 2000;28(63):70.
9. *J Am Plan Assn.* 2006;72(1):1–136.
10. Kirby S, Hollander M. *Consumer Preferences and Social Marketing Approaches to Physical Activity Behavior and Transportation Choices*. Prepared for the Transportation Research Board and the Institute of Medicine Committee on Physical Activity, Health, Transportation, and Land Use. Washington, DC: Transportation Research Board; 2006.
11. Atlanta Regional Commission. *Regional Issues Poll, Winter 2001*. Atlanta: Atlanta Regional Commission; 2001.
12. Belden Russonello & Stewart. National Survey on Growth and Land Development September 2000 for Smart Growth America [online]. www.smartgrowthamerica.com/poll.pdf. Published 2000. Accessed January 31, 2006.
13. Perdue WC, Stone LA, Gotin LO. The built environment and its relationship to the public health: the legal framework. *Am J Public Health.* 2003;93:1390–1934.
14. Steele R, Caperchione C. The role of local government in physical activity: employee perceptions. *Health Promot Pract.* 2005;6(2):214–218.
15. Pryne E. Two studies: urban sprawl adds pounds, pollution. *Seattle Times*. January 25, 2006. http://seattletimes.nwsourc.com/html/health/2002760245_sprawlfeat24m.html. Accessed March 2006.
16. RWJF Active Living Leadership. Healthy community design—success stories from state and local leaders. <http://www.rwjf.org/files/research/storybook.pdf>. Accessed September 2007.
17. Schilling J, Linton LS. The public health roots of zoning. In search of active living's legal genealogy. *Am J Prev Med.* 2005;28:96–104.
18. Pollard T. Policy prescription for healthier communities. *Am J Health Promot.* 2003;18:109–113.
19. Hoehner CM, Brennan LK, Brownson RC, Handy SL, Killingsworth R. Opportunities for integrating public health and urban planning approaches to promote active

- community environments. *Am J Health Promot.* 2003;18:14–20.
20. Robbins L, Morandi L. *Promoting Walking and Biking: The Legislative Role.* Washington, DC: National Conference of State Legislatures; 2002.
 21. Berrigan D, Troiano RP. The association between urban form and physical activity in U.S. adults. *Am J Prev Med.* 2002;23(2)(suppl):74–79.
 22. Nelson AC. *Toward a New Metropolis: The Opportunity to Rebuild America.* Washington, DC: Brookings Institution; 2004.
 23. Resolution urging the federal government to respond to increasing transportation infrastructure threats by supporting a well-funded TEA-21 reauthorization. http://usmayors.org/uscm/resolutions/73rd_conference/resolutions_adopted_2005.pdf. page 174. Accessed August 2005.
 24. National Black Caucus of State Legislators. NBCSL Annual Legislative Conference 2004–2005 Ratified Resolutions. Resolution 05-156; pages 127–128. <http://www.nbcsl.org/resolutions/resolutions05.pdf>. Accessed December 12, 2005.