

# Municipal Officials' Perceived Barriers to Consideration of Physical Activity in Community Design Decision Making

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**Context:** Built environment-focused interventions and policies are recommended as sustainable approaches for promoting physical activity. Physical activity has not traditionally been considered in land use and transportation decision making. Effective collaboration with non-public health partners requires knowledge of their perceived barriers to such consideration.

**Objective:** This analysis sought to (a) establish prevalence estimates of selected barriers to the consideration of physical activity in community design and layout decisions and (b) describe how barrier reporting by public health officials differs from other municipal officials among a wide range of job functions and departments in a geographically diverse sample.

**Design:** A Web-based survey was conducted among municipal officials in 94 cities and towns with populations of at least 50 000 residents in 8 states. **Participants:** A total of 453 municipal officials from public health, planning, transportation/public works, community and economic development, parks and recreation, city management, and municipal legislatures in 83 cities and towns responded to the survey. **Main Outcome**

**Measures:** Five barriers to consideration of physical activity in community design and layout were assessed. **Results:** The most common barriers included lack of political will (23.5%), limited staff (20.4%), and lack of collaboration across municipal departments (16.2%). Fewer participants reported opposition from the business community or residents as barriers. Public health department personnel were more likely to report the barriers of limited staff and lack of collaboration across municipal departments than other professionals. They were also

more likely to report lack of political will than city managers or mayors and municipal legislators. **Conclusions:** Barriers to increasing consideration of physical activity in decision making about community design and layout are encouragingly low. Implications for public health practice include the need to

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strategically increase political will despite public health staffing constraints and perceived lack of collaboration with relevant departments such as planning and public works/transportation.

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The built environment has been described as “. . . the sum total of what we design and construct in the places we live, work, go to school, and play—from streets and highways to houses, businesses, schools and parks.”<sup>1(p9)</sup> As evidence accumulates on the association between the built environment and physical activity,<sup>2-6</sup> environment- and policy-focused interventions have been increasingly recommended as cost-effective, sustainable approaches for promoting physical activity.<sup>7-11</sup> The built environment as it affects physical activity is shaped largely by land use and transportation factors,<sup>12</sup> which in turn reflect a complex mix of decision making at national, state, and local levels. Public health concerns such as lack of physical activity have not traditionally been considered in built environment decision making.<sup>13</sup> Recommendations for modifying policy and built environment to promote physical activity include collaboration with local- or municipal-level officials responsible for areas such as transportation and land use changes<sup>8-11,14</sup> but contain little guidance on how public health practitioners should work with such partners. In addition, little is known about how municipal staff and elected officials view such collaboration or how they might share planning priorities.

Effective transdisciplinary collaboration between public health and other municipal officials requires knowledge of attitudes and beliefs, including perceptions of barriers to the consideration of physical activity in community design decision making and how they differ among municipal officials from diverse sectors.<sup>15</sup> Understanding these barriers can inform future targeted approaches and interventions aimed at promoting collaborative built environment initiatives. Of the research on public officials' views on physical activity and public health,<sup>16-23</sup> only 4 studies to date examined barriers at the municipal level.<sup>20-23</sup> Inadequate funding (staff and infrastructure projects) is a well-established barrier. Other barriers that have been identified include lack of political will/low prioritization, lack of collaboration among departments, staffing challenges, and community opposition. Limitations of these analyses include samples of a single discipline, a single geographic area, and professional association members. There is a need to further characterize barriers perceived by a range of municipal staff and officials including public health personnel, who are being encouraged to involve themselves in often unfamiliar policy processes.<sup>8-10</sup>

This analysis sought to address the following research questions among a sample of municipal officials representing a wide range of departments and job functions from geographically diverse areas: (a) What are the prevalence estimates of selected barriers to the consideration of physical activity in community design and layout decisions? and (b) How do barriers reported by public health officials differ from those of other municipal officials who are involved with built environment decision making?

## ● Methods

This study was a collaboration among institutions participating in the Centers for Disease Control and Prevention-funded Physical Activity Policy Research Network. The study was coordinated by the University of Massachusetts Medical School with investigators from 7 other Physical Activity Policy Research Network-affiliated universities. The protocol was approved by the institutional review boards at all these institutions.

### Target population

The target population for this study was elected and appointed municipal officials from 94 cities with 50 000 residents or more (according to the 2010 Census) in 8 states (Colorado, Georgia, Hawaii, Kansas, Massachusetts, Missouri, North Carolina, West Virginia). Departments of planning, community development, economic development, public works, transportation, engineering, parks and recreation, neighborhood services, and public health were selected. County public health departments were identified for cities and towns with no municipal or unified city/county health department ( $n = 57$ ). City/town managers, mayors, and municipal legislators (city council members, aldermen, commissioners, selectmen, and policy staff) were also targeted.

The Municipal Yellow Book ([www.leadershipdirectories.com](http://www.leadershipdirectories.com)), a proprietary database of officials in US municipalities with at least 60 000 residents, was the primary source of contact information for cities of this size. Current census data were used to identify cities with populations of 50 000 to 60 000 residents in the included states. Municipal Web sites were searched to ascertain contact information for officials who met study criteria and to supplement missing contact information for larger cities.

### Survey development

This analysis used a subset of questions from a larger survey of municipal officials' attitudes, beliefs, and

behaviors with respect to built environment public policies. Recognizing that physical activity is not a traditional consideration in decision making about community design and layout, survey development was guided by Diffusion of Innovation theory.<sup>20,24</sup> The process included (a) key informant interviews with 5 officials (mayor, city economic development officer, 2 state legislators, and bicycle/pedestrian planner) and 2 academicians (political science and economics) to explore community built environment decision making and importance of political and public support; (b) systematic literature review to identify existing measurement items corresponding to relevant Diffusion of Innovation theory constructs; (c) investigator consensus whether an existing item should be included verbatim or modified slightly or new items developed; (d) cognitive interviews of the draft survey with 4 individuals representing planning, transportation, and community development to ensure comprehension and relevance; (e) programming in Qualtrics ([www.qualtrics.com](http://www.qualtrics.com)); and (f) pilot testing of the final Web-based, 43-item survey with research staff and 7 individuals representing economic development, planning, transportation, and public health and subsequent final revision.

### Survey administration

Personalized e-mail invitations describing the study purpose and containing a survey link were sent to work e-mail addresses. Invitations were sent by the respective site investigator except North Carolina (invitations came from the coordinating institution). Invitees from 6 states were informed that after survey completion they could enter a raffle for 1 of 10 \$25 gift cards (2 states do not allow raffles). A consent section ensured confidentiality and provided investigator contact information for the respective state and the coordinating institution. After 1 week, all nonresponders who did not actively refuse via e-mail or telephone received 1 e-mail reminder. Up to 3 telephone reminders were made to nonresponders over a 5-week period in June/July 2012, terminating once contact with the target individual was made or ineligibility confirmed. Survey links were resent upon request, and invitations were sent to replacements for individuals no longer working for or representing the municipality plus a small number of new contacts suggested by target individuals or department staff during telephone reminders. Reminder calls were conducted by staff at the respective university for all states except North Carolina, for which the coordinating institution made calls.

### Measures

*Barriers* selected for inclusion in this survey were 5 constructs found to be important in previous research,<sup>20-22</sup>

deemed potentially amenable to intervention, and confirmed in our developmental work. These included limited staff, lack of collaboration among departments, lack of political will, opposition from the business community, and opposition from residents. The measures were developed by the investigative team. For each question, items were worded "To what extent do you believe '[BARRIER]' prevents physical activity from being considered in decision making about community design and layout in your community?" Responses were rated on a 5-point Likert scale (not at all, a little, somewhat, very much, extremely). Because few respondents provided responses on the extreme ends of the scale, each item was recoded into a 3-category response corresponding to weak or no barrier (not at all or a little), somewhat a barrier, or strong barrier (very much, extremely). A summary measure, in which the 5 barriers (using the 5-point scales, scored 0-4) were summed such that higher scores indicate greater barriers experienced, was also created (range 0-20). *Position of respondent* was assessed by 2 questions that classified job function and department. These variables were recoded into a single variable with 7 categories (Table 1). *Covariates* are also listed in Table 1.

### Statistical analysis

Analyses were performed using SPSS version 20. Descriptive statistics were first computed. The frequency distributions of each barrier were computed for the full sample and stratified by position. Chi-square statistics were used to test for differences. Multinomial logistic regression models were run to assess the association between job position and each barrier. Models compared participants from public health (referent) to each of the other positions on whether each barrier was (a) somewhat a barrier versus weak or no barrier or (b) strong barrier versus weak or no barrier. Two sets of multivariable models were computed. The first set adjusted for all covariates and the second set excluded variables for which there was more than 5% missing data (fiscal affiliation, social affiliation, race/ethnicity). Only the second set of models is presented, as the results of the models did not differ. The association between job position and the sum of all 5 barriers on the original 5-point scale (possible values 0-20, with greater scores indicating more barriers) was examined using multivariate linear regression models.

## ● Results

### Study sample

Initially, 1845 individuals were identified and invited to participate. An additional 32 individuals were

**TABLE 1 • Description of the Study Sample (N= 453)**

Characteristic	Percentage of Sample
Position	
Public health	8.4
Planning	9.9
Transportation/public works	14.3
Community/economic development	13.7
Parks and recreation	13.5
Mayor/city manager	10.6
Municipal legislator	29.6
Gender	
Female	29.5
Male	70.5
Race/ethnicity	
White	78.7
African American/black	10.0
Mixed race or other race	5.6
Prefer not to answer	5.9
Education	
High school degree or less	7.8
Some college/technical training	32.6
College degree or higher	59.5
Do you live in the city in which you work?	
Yes	78.3
Walk or bike for transportation in the past week	
Yes	36.2
On social issues do you consider yourself . . .	
Liberal	38.2
Moderate	24.7
Conservative	30.2
Other/Prefer not to answer	7.0
On fiscal issues, do you consider yourself . . .	
Liberal	16.9
Moderate	26.7
Conservative	50.4
Other/prefer not to answer	6.1

identified as eligible participants during survey administration and sent e-mail invitations. One hundred four original invitees were deemed ineligible because they no longer worked for or represented the municipality, had a current job function that did not match inclusion criteria, the department was no longer under municipal control, or individuals could not be confirmed as employees (eg, phone disconnected, name not recognized). The final number of invited individuals was 1773, of which 461 (26%) representing 83 municipalities completed the survey. An additional 8 individuals were excluded from this analysis because they reported working in combined municipal departments (eg, public works and planning), resulting in a final analytic sample of 453 (Table 1).

## Barriers reported

The most commonly reported barrier to consideration of physical activity in community design and layout decision making was lack of political will (23.5%), followed by limited staff (20.4%), lack of collaboration across municipal departments (16.2%), business community opposition (14.6%), and resident opposition (10.2%). Table 2 describes the distribution of the 5 barriers stratified by job position. The mean summary barrier score was 7.2 (SD = 3.6).

## Association of position with individual barriers

Table 3 presents the results of the adjusted multinomial logistic regression models. Mayors/city managers and municipal legislators were less likely to report *lack of political will* as a strong barrier than were those in public health departments, with a trend toward a similar association for those in economic or community development. Respondents in planning, transportation/public works, and community/economic development, mayors/city managers, and municipal legislators were less likely to report that *limited staff* was a strong barrier than public health professionals. Respondents in transportation/public works, community/economic development, and parks and recreation, mayors/city managers, and municipal legislators were less likely to report *lack of collaboration among departments* as a strong barrier than were those in public health departments. There were no differences between public health officials and those from other departments with respect to reporting *opposition from the business community* and *opposition from residents* as strong barriers.

## Association of position with barriers summary

There were also differences by position in the barriers summary score in the multiple linear regression models. Compared with those in public health, those in planning (beta estimate [ $\beta$ ] = -1.69; 95% confidence interval [CI] = -0.14 to -2.30), transportation and public works ( $\beta$  = -2.83; 95% CI = 0.08 to -3.27), economic and community development ( $\beta$  = -2.30; 95% CI = -0.87 to -3.73), parks and recreation ( $\beta$  = -1.66; 95% CI = -0.31 to -3.12), mayors and city management ( $\beta$  = -3.27; 95% CI = -1.76 to -4.77), and municipal legislators ( $\beta$  = -3.0; 95% CI = -1.69 to -4.13) reported fewer barriers.

## Discussion

Given current recommendations on improving land use and transportation processes to increase physical

**TABLE 2 ● Barriers to Consideration of Physical Activity in Decision Making About Community Design and Layout by Position**

Barriers	Economic/Community Development							Chi-square (P)	
	Overall (n = 453)	Public Health (n = 38)	Planning (n = 45)	Transportation/ Public Works (n = 65)	Economic/Community Development (n = 62)	Parks and Recreation (n = 61)	Mayor/City Manager (n = 45)		Municipal Legislator (n = 134)
	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	
Limited staff									31.2 (.002)
Weak or no barrier	47.2	29.0	55.6	46.2	45.2	36.7	68.1	48.5	
Somewhat a barrier	32.4	26.3	35.6	33.9	30.7	41.7	25.5	31.3	
Strong barrier	20.4	44.7	8.9	20.0	24.1	21.6	6.4	20.2	
Lack of collaboration									24.7 (.02)
Weak or no barrier	58.6	32.2	51.1	60.0	57.6	62.3	68.8	65.4	
Somewhat a barrier	25.2	31.6	26.7	26.2	35.5	23.0	25.0	18.8	
Strong barrier	16.2	34.2	22.2	13.9	12.9	14.7	6.3	15.8	
Lack of political will									22.2 (.04)
Weak or no barrier	42.4	26.3	35.6	36.9	41.9	41.0	60.4	46.3	
Somewhat a barrier	28.0	26.3	24.4	29.2	30.7	22.9	25.0	31.3	
Strong barrier	23.5	47.4	40.0	33.9	27.4	36.1	14.6	22.4	
Opposition from the business community									18.4 (.11)
Weak or no barrier	57.6	52.6	42.2	44.6	59.0	60.7	54.2	67.9	
Somewhat a barrier	28.8	31.6	35.6	35.4	31.2	22.2	35.4	20.2	
Strong barrier	14.6	15.8	22.2	20.0	9.8	13.1	10.4	11.9	
Opposition from residents									12.4 (.42)
Weak or no barrier	59.6	52.6	68.9	46.2	64.5	60.7	56.3	63.4	
Somewhat a barrier	30.2	39.5	17.8	38.5	29.0	29.5	33.3	27.6	
Strong barrier	10.2	7.9	13.3	15.4	6.5	9.8	10.4	9.0	

**TABLE 3 • Multinomial Logistic Regression Models<sup>a</sup> of the Association Between Position and Barriers to Consideration of Physical Activity in Decision Making About Community Design and Layout (N = 453)**

	Somewhat Versus Weak or No Barrier AOR <sup>a</sup> (95% CI)	Strong Barrier vs. Weak or No Barrier AOR <sup>a</sup> (95% CI)
<i>Barrier: Limited staff</i>		
Public health	1.0	1.0
Planning	0.63 (0.21-1.84)	<b>0.11 (0.03-0.40)<sup>b</sup></b>
Transportation/public works	0.73 (0.26-2.09)	<b>0.32 (0.11-0.91)</b>
Community/economic development	0.73 (0.25-2.07)	<b>0.36 (0.13-0.98)</b>
Parks and recreation	1.15 (0.40-3.31)	0.42 (0.14-1.20)
Mayor/city manager	0.37 (0.12-1.10)	<b>0.06 (0.02-0.26)</b>
Municipal legislator	0.68 (0.26-1.80)	<b>0.28 (0.11-0.70)</b>
<i>Barrier: Lack of collaboration</i>		
Public health	1.0	1.0
Planning	0.61 (0.21-1.77)	0.49 (0.16-1.46)
Transportation/public works	0.54 (0.20-1.46)	<b>0.29 (0.10-0.86)</b>
Community/economic development	0.79 (0.30-2.06)	<b>0.26 (0.09-0.80)</b>
Parks and recreation	0.43 (0.16-1.19)	<b>0.28 (0.10-0.83)</b>
Mayor/city manager	0.40 (0.14-1.14)	<b>0.10 (0.03-0.43)</b>
Municipal legislator	<b>0.33 (0.13-0.84)</b>	<b>0.28 (0.11-0.72)</b>
<i>Barrier: Lack of political will</i>		
Public health	1.0	1.0
Planning	0.74 (0.23-2.41)	0.69 (0.24-1.95)
Transportation/public works	0.88 (0.29-2.63)	0.61 (0.22-1.66)
Community/economic development	0.76 (0.26-2.22)	0.39 (0.15-1.06)
Parks and recreation	0.55 (0.18-1.69)	0.54 (0.20-1.45)
Mayor/city Council	0.41 (0.14-1.27)	<b>0.14 (0.05-0.44)</b>
Municipal legislator	0.67 (0.25-1.80)	<b>0.30 (0.12-0.75)</b>
<i>Barrier: Opposition from the business community</i>		
Public health	1.0	1.0
Planning	1.46 (0.54-3.98)	1.90 (0.56-6.49)
Transportation/public works	1.37 (0.53-3.52)	1.68 (0.52-5.50)
Community/economic development	0.83 (0.33-2.08)	0.59 (0.17-2.13)
Parks and recreation	0.69 (0.26-1.80)	0.75 (0.22-2.60)
Mayor/city council	1.23 (0.47-3.20)	0.59 (0.15-2.27)
Municipal legislator	0.44 (0.16-1.06)	0.56 (0.19-1.70)
<i>Barrier: Opposition from residents</i>		
Public health	1.0	1.0
Planning	<b>0.30 (0.11-0.87)</b>	1.38 (0.30-2.37)
Transportation/public works	0.92 (0.38-2.27)	2.57 (0.59-11.12)
Community/economic development	0.55 (0.23-1.33)	0.70 (0.14-3.48)
Parks and recreation	0.52 (0.21-1.29)	1.13 (0.25-5.23)
Mayor/city council	0.70 (0.28-1.78)	1.43 (0.30-6.85)
Municipal legislator	0.46 (0.20-1.05)	1.16 (0.28-4.70)

Abbreviations: AOR, adjusted odds ratio; CI, confidence interval.

<sup>a</sup>AOR: Adjusts for state, gender, education, and live in the city in which you work and walk/bike for transportation in past week.

<sup>b</sup>Items in bold are statistically significant.

activity and reduce overweight and obesity, understanding the perspectives of local policy decision makers is crucial to begin building the needed collaboration with these officials. To our knowledge, this is the first study to assess a representative sample of municipal

officials about their views on consideration of physical activity in local decision making about community design. Overall prevalence of these selected barriers to the consideration of physical activity in community design and planning was encouragingly low.

The highest barrier of political will was ranked as strong by less than a quarter of the total sample. Hollander et al<sup>22</sup> found similar percentages reporting no political will to support active community design among members of county management, environmental health, and planning associations. Higher ratings for this type of barrier were reported by researchers who asked planning directors about officials' support for planning innovations<sup>20</sup> and staff knowledgeable about walking and bicycling about officials' support for projects.<sup>21</sup> It may be that officials respond favorably to more general, health-related language that references process rather than pedestrian and bicycle facilities or specific land use issues.

Our sample reported limited staff to be much less of a barrier than have other reports.<sup>20,21,23</sup> Lack of collaboration among departments was likewise not viewed as a strong barrier among this sample of officials, in contrast to other reports. The need for intergovernmental coordination was 1 of 5 themes identified through a case study exploring implementation of local policies to promote physical activity in Montgomery County, Maryland.<sup>19</sup> Planning directors of midsized cities generally could not say whether their public health department was in support of or opposed innovative land use policies that support active living, which could indicate a lack of collaboration.<sup>20</sup> Resident opposition and business opposition were infrequently reported across job positions, in contrast to other reports.<sup>21</sup> This is encouraging, because leaders will be more likely to support efforts where they perceive at least tacit community support.

There were important differences between public health officials and professionals in other positions in reports of internal barriers. Public health officials were more likely to perceive the following as barriers: limited staff compared to all positions except for parks and recreation, lack of collaboration compared to all positions except for planning, and lack of political will compared to mayors, city councilors, and municipal legislators. Public health officials also had higher overall reports of barriers, as measured by the summary score, than each of the other positions examined. Several explanations are possible for these findings. Local public health departments struggle disproportionately with staff cuts<sup>25</sup> even as calls are made to realign public health funding to match current needs such as increased physical activity.<sup>26</sup> Public health personnel may have greater trepidation about interactions with these other departments because they have less history of interdepartmental collaboration than do other departments,<sup>1</sup> especially planning and public works/transportation. Another possibility is that public health officials are not confident of political will given their experience on other public health issues.

Finally, public health personnel who responded to the survey may have actually experienced these barriers in trying to increase consideration of physical activity in built environment decision making.

Our results point to several recommendations for working with municipal officials from different sectors. Strengthening political will to increase consideration of physical activity in community design is clearly the paramount barrier to address, but a nuanced approach is required given variation in perceptions of it. While general appeals to city management and elected officials based on need and even effectiveness may seem a logical approach,<sup>27</sup> it may be less effective at the local level where decision making is less policy-based and more parochial.<sup>28</sup> Practitioners must identify targets and opportunities more strategically on the basis of specific knowledge of their state and local regulatory processes. For example, which municipal legislative committees are relevant and who is on them? What are the appointed land use and transportation boards or committees, and what is the appointment process? What constituent groups already have the attention of that legislator? The gray literature offers resources for more general education on these processes (sources such as ChangeLab Solutions, formerly Public Health Law and Policy, [www.changelabsolutions.org](http://www.changelabsolutions.org)), but practitioners should also seek out state-specific educational opportunities. In Massachusetts, for example, the Citizen Planner Training Collaborative ([www.umass.edu/masscptc/](http://www.umass.edu/masscptc/)) offers certificates in basic land use planning concepts through workshops to increase capacity of local land use planning boards (registration is open to anyone), and the Massachusetts Department of Transportation offers introductory and more technical Complete Streets workshops. Practitioners must also present evidence of local public support for built environment change, echoing what national research surveys have shown.<sup>29</sup> It may be helpful to consider this work as building a social movement,<sup>1,30</sup> whereby the science base is used along with social marketing to effect social norm changes that ultimately result in policy change.

To address staffing constraints, public health departments should prioritize staff efforts on activities in which only municipal employees are allowed to participate (eg, plan review, optional developer meetings prior to public hearings of the land use boards). A previous investigation observed that public health agencies whose leaders prepared their departments most for built environment work were more likely to achieve changes to the built environment.<sup>31</sup> The public health community is broader than municipal or county public health staff. Health care institutions, social service agencies, community-based organizations such as YMCAs, food policy councils, neighborhood

associations, environmental or social justice groups, and educational institutions are increasingly concerned about the built environment. Advocates in turn must develop and implement a system for regular, ongoing participation in the public process for land use and transportation to demand consideration of physical activity: review plans as available, monitor meeting agendas for relevant city committees and boards, testify at public hearings, and submit written comments.

Public health practitioners must cultivate relationships with fellow municipal departments just as they do with traditional community partners, applying the principles of participatory management, coalition development, and community engagement to build awareness, common objectives, and the value of partnerships. Understanding other departments' missions and performance measures and serving as a local resource for best practices and model policies is critical to increase consideration of physical activity in built environment decision making.

This study had several strengths. It took a unique approach by surveying a representative sample across multiple disciplines that affect the built environment at the local level. The multistate sample represented different regions of the United States and urban areas of varying sizes. The study also had several limitations. All data are self-report. Only urban areas with at least 50 000 residents were studied. The low response rate was likely influenced by multiple factors, including busy schedules, survey timing at the end of municipal fiscal year, restricted Internet access or spam filters at municipal worksites, and inaccurate e-mail addresses. Some estimates include large CIs due to small cell sizes, which may be due to homogeneity of respondents within a particular job function or because of limited sample size. As operational definitions of barriers were not provided, respondent interpretation could potentially have impacted results. Finally, not all potential barriers were assessed in an effort to respect officials' time. Barriers included were selected on the basis of a careful review of the available literature and potential amenability to intervention and change. Funding would likely have been a strong barrier with this sample as in previous research, but funding constraints are a fact going forward. Creativity will lie in making progress in spite of this, with funding ultimately an expression of political will.

Integrating public health concerns about physical activity into existing, legally constrained and mandated public processes with a long history of favoring motor vehicles as the default mode of transportation can help achieve more walkable and bikeable communities. Results of this study illuminate the major barriers reported by local actors to the transdisciplinary collaboration that will be necessary for this integration to be suc-

cessful. The data provide the public health community, from health department personnel to advocates, with a new type of evidence to begin translating national recommendations about built environment down to the local level.

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