



Prevalence of master plans supportive of active living in US municipalities

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ABSTRACT

Community planning documents can play an important role in promoting the design and maintenance of walkable communities. This study estimates the prevalence among US municipalities of (1) community wide planning documents and (2) inclusion of plan objectives supportive of active living within these documents.

Data from the 2014 National Survey of Community-Based Policy and Environmental Supports for Healthy Eating and Active Living (CBS HEAL), a survey of local officials, were analyzed ($n = 2005$). Prevalence of comprehensive or general plans, 3 specific plan types, and 3 objectives supportive of active living were analyzed using survey weights to create national estimates.

Overall, 64% of municipalities had a comprehensive/general plan, 46% had a transportation plan, 48% had a bicycle or pedestrian plan and 76% had a land use plan. Of municipalities with a plan, 78% included at least one of the three objectives measured supportive of active living. Differences in presence of plans and objectives were observed by population size of the municipality, urban status, region, and median education.

Helping communities, especially smaller or rural municipalities and those with lower median education levels, create and adopt planning documents supportive of active living may be an important step in creating more walkable communities.

1. Introduction

Being physically active is one of the most important steps people of all ages and abilities can take to improve their health (Physical Activity Guidelines Advisory Committee, 2008; U.S. Department of Health and Human Services, 2008). However, only about one half of adults in the United States and about one quarter of high school students meet the aerobic physical activity guidelines (Office of Disease Prevention and Health Promotion, 2014). The need to increase physical activity levels in the United States through the creation and maintenance of walkable communities has been emphasized in several seminal documents (National Physical Activity Plan Alliance, 2016; U.S. Department of Health and Human Services, 2015).

Community planning documents can play an important role in the design and maintenance of communities supporting active living (Maiden et al., 2017). They can be useful tools in articulating local values and guiding policy-makers' decisions in promoting specific aims important to the municipality, such as creating walkable communities. The link between improved physical activity and planning documents supportive of active living has been established (Evenson et al., 2011; Aytur et al., 2008a; Aytur et al., 2007; Aytur et al., 2011).

A municipality may have one or more plan types that address community design. Master plans (also known as general plans or comprehensive plans) are planning documents that describe the intention and direction for community development (Stair et al., 2008). Plans can also serve as a template to direct resources in an organized, strategic manner (Bostrom et al., 2017), and can direct public policy in terms of transportation, utilities, land use, recreation, and housing (Conglose, 2016). Plans typically encompass a broad range of topics for long-term planning. They can be presented as one large plan or multiple stand-alone plans, such as land use, transportation, and bicycle or pedestrian plans. Plans can identify opportunities for enhancing for walking and bicycling as well as provide design standards for new improvements and maintenance of projects (Ten, 2000; Manson et al., 2002; Taylor, 2015).

Planning documents often include objectives for community growth and development, and may cover a range of topics from food access to economic development (Maiden et al., 2017). Including specific objectives, such as the implementation of a Complete Streets policy, the promotion of street connectivity, or encouragement of mixed-use development within municipal plans, can help focus a community when implementing infrastructure supportive of active living. Complete

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Table 1
Prevalence of reported plans among US municipalities by municipality characteristics, National Survey of Community-Based Policy and Environmental Supports for Healthy Eating and Active Living^a (CBS HEAL).

Municipality characteristics	Sample size	Any plan ^b		Presence of a comprehensive/general plan		Percent with type of plan (Either part of a master plan or stand-alone) ^c					
						Land use plan		Transportation plan		Bicycle or pedestrian plan	
		%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
Total	2005	89.0	(87.5–90.3)	63.6	(61.5–65.7)	76.4	(74.5–78.2)	45.9	(43.8–48.1)	47.8	(45.7–50.1)
Population size											
< 2500 persons	715	76.9	(73.6–79.9)	48.6	(44.9–52.3)	61.6	(58.0–65.2)	25.9	(22.8–29.2)	32.4	(29.0–36.0)
2500–49,999 persons	1149	95.0	(93.5–96.1)	70.3	(67.5–72.9)	83.4	(81.1–85.5)	53.2	(50.3–56.1)	53.1	(50.2–56.0)
≥ 50,000 persons	141	100		84.2	(77.0–89.5)	91.7	(85.9–95.2)	86.9	(80.1–91.6)	81.7	(74.2–87.3)
Rural/urban status											
Rural (≤50% urban)	533	74.8	(70.9–78.3)	46.0	(41.8–50.2)	60.3	(56.1–64.4)	23.4	(20.1–27.2)	29.6	(25.9–33.7)
Urban (> 50% Urban)	1472	93.8	(92.3–94.9)	69.6	(67.1–71.9)	81.8	(79.7–83.7)	53.5	(50.9–56.0)	54.0	(51.4–56.5)
Census region											
South	701	83.8	(80.9–86.4)	54.8	(51.1–58.5)	72.0	(68.6–75.2)	41.4	(37.8–45.0)	44.1	(40.4–47.8)
Northeast	231	88.9	(84.2–92.4)	58.5	(52.0–64.7)	77.3	(71.5–82.2)	32.6	(26.8–38.9)	37.5	(31.4–43.9)
Midwest	743	90.8	(88.5–92.7)	64.2	(60.6–67.5)	77.2	(74.1–80.1)	43.6	(40.1–47.2)	49.2	(45.7–52.8)
West	330	97.7	(95.4–98.8)	89.9	(86.1–92.7)	84.3	(80.0–87.9)	76.8	(72.0–81.0)	64.5	(59.2–69.5)
Median education level											
High school graduate	887	82.8	(80.2–85.2)	53.6	(50.3–56.9)	69.2	(66.1–72.2)	32.2	(29.2–35.4)	35.4	(32.3–38.6)
College graduate	1118	93.9	(92.4–95.2)	71.7	(68.9–74.3)	82.1	(79.8–84.3)	57.0	(54.0–59.9)	57.9	(54.9–60.8)
Poverty prevalence											
≥ 20% below poverty level	611	84.9	(81.8–87.5)	58.5	(54.5–62.3)	70.2	(66.5–73.7)	40.4	(36.6–44.4)	45.7	(41.8–49.7)
< 20% below poverty level	1394	90.8	(89.1–92.2)	65.9	(63.3–68.4)	79.1	(76.8–81.2)	48.4	(45.7–51.0)	48.8	(46.2–51.4)
Race/ethnicity											
≤ 50% non-Hispanic White	267	87.6	(83.1–91.1)	63.6	(57.5–69.2)	74.8	(69.2–79.7)	48.1	(42.1–54.1)	46.1	(40.2–52.2)
> 50% non-Hispanic White	1738	89.2	(87.6–90.6)	63.6	(61.3–65.9)	76.6	(74.6–78.6)	45.6	(43.3–48.0)	48.1	(45.8–50.5)

CI: confidence interval.

^a The sample pool of potential respondents was based on the 2007 Census of Governments (COG) files which lists municipalities and townships by state and provides data on community size. Municipalities with population size < 1000 were excluded from the sample pool. In states where there is geographic overlap between municipal and town/township levels of government, the eligible sample pool was modified to avoid double counting of populations covered by both layers of government. Estimates have been weighted to account for unequal probabilities of selection and varying rates of non-response. Population size categories are based on the 2010 Decennial Census.

^b A municipality had “Any plan” if the respondent indicated the presence of at least one of the plans (Comprehensive/General, Land Use, Transportation, Bicycle/Pedestrian).

^c Responses of “Don't Know” ranged from 86 (land use plan) to 133 (transportation plan) for each type of plan and were included with “No” responses.

Streets policies target the streets themselves, and are an approach to make streets and communities safe for all people regardless of age, ability or mode of transportation through their routine design and operation (Carlson et al., 2017). The network of streets can also provide an opportunity to promote active living. Increased street connectivity provides shorter, more numerous routes to destinations through networks with more intersections and fewer dead ends (Berrigan et al., 2010). Proximity to and diversity of destinations can be targeted as well through mixed use development, which can be encouraged through approaches such as zoning changes (Community Preventive Services Task Force, 2016). Including these objectives related to active living in local comprehensive or master plans may help promote walkability within the municipality planning process.

Few studies have investigated the prevalence of plans and objectives to promote active living by municipal characteristics. One study identified plans in California, Missouri, North Carolina and Washington (Steinman et al., 2010) showing communities with pedestrian master plans had a lower median household income, fewer non-whites, and fewer active transit commuters than communities with bicycle master plans. Another study investigated the association of planning documents with sociodemographic characteristics at the county-level in North Carolina, finding variability in activity friendly transportation improvements across county income, metro area status, and race (Aytur et al., 2008b). An additional study in North Carolina identified community characteristics with the prevalence of pedestrian and bicycle

plans (Aytur et al., 2013).

To our knowledge, no study has examined the prevalence of master plans in a nationally representative sample of US municipalities. Identifying characteristics of municipalities with plans and containing objectives supportive of active living can help identify the types of communities where opportunities for improvement exist. The purpose of this study is to first estimate the prevalence of US municipalities with communitywide planning documents (comprehensive/general plans and specific types of plans including land use, transportation, and/or bicycle or pedestrian plan) and to examine how the prevalence differs by municipality characteristics (population size, rural/urban status, census region, median education level, poverty prevalence, and race/ethnicity). Second, among municipalities with any plan, the inclusion of objectives supportive of active living (presence of a Complete Streets policy, promotion of street connectivity, and encouragement of mixed-use development) is examined overall, and by municipality characteristics.

2. Methods

2.1. Data

2.1.1. National survey of Community-Based Policy and Environmental Supports for Healthy Eating and Active Living (CBS HEAL)

CBS HEAL was conducted from May through September 2014 by

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