The Role of Planning Tools as Strategies for Combating Childhood Obesity

Jacquelyn Coats
Clemson University, coats.ja@gmail.com

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“It is unreasonable to expect that people will change their behavior easily when so many forces in the environment conspire against such change.”

-Institute of Medicine, 2008.
The failure of traditional health models to successfully combat childhood obesity is apparent when considering its sustained prevalence in the United States. Childhood obesity rates have tripled over the past three decades and health officials recognize the need for integrative strategies in order to reverse the trend (CDC, 2010). The historical roots of planning and public health offer a potential venue for collaborative strategies to address the macro level factors that affect community health. This thesis examines how planning tools have been adapted to incorporate health strategies, whether or not such methods are sustainable, and what relationships are essential for the creation and implementation of such strategies. Using a mixed methodology, this research asks and answers the following questions: “What strategies are planners using to address community health?” and “How active are planners throughout the Southeast in deliberately implementing such strategies?” The initial hypothesis is while planners may touch on community health through broader means, there is a lack of plan and strategy specificity and implementation in addressing community health concerns through traditional planning tools. In order to successfully adapt planning tools to address community health, collaboration between key stakeholders is needed: planners and public health officials. Articulation of stakeholders’ roles as well as the overall structure of such methods will enable planners to serve a more active role in the creation of health strategies.
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INTRODUCTION

The topic of health and specifically, Americans’ lack of health is of growing concern within various professional fields. As national childhood obesity levels are documented as reaching “epidemic” proportions, governments, both at the local and at the federal level, are beginning to take action and recognize the importance of cross-agency cooperation in order to reverse this trend. Currently, more than one in six children in the United States is obese (Figure 1), three times the rate of childhood obesity in the 1970s (CDC, 2010). Obesity during childhood has been associated with numerous adverse effects including a variety of health complications such as hypertension, atherosclerosis, metabolic syndrome, cardiovascular disease, type 2 diabetes, sleep disorders and several types of cancer, as well as psychological effects such as stigmatization, discrimination, depression, and emotional trauma (Mokdad et al., 2001; Freedman et al., 2007; Frieden et al., 2010). These health consequences of childhood overweight and obesity add to the burden of healthcare costs, with the annual U.S. obesity attributable medical expenditures averaging an estimated $147 billion in 2007 dollars (Rudd Center for Food Policy and Obesity, 2010).
In examining the reasons for such disparities and the underlying causes linked with childhood obesity, researchers have determined that individual, household, and neighborhood social and built environmental characteristics have significant influences on human behavior (Frank et al., 2003; Singh et al., 2010). The ways that cities, suburbs, and towns are designed and built impact the people who work, live, and play in them. Various environmental factors influence individual behavioral choices on a daily basis, specifically: neighborhood crime and safety; access to recreation facilities, outdoor parks and playgrounds; vehicular traffic congestion; the proximity and prevalence of grocery stores, fast-food outlets, convenience stores, and restaurants; and exposure to media promoting unhealthy food choices. In modern America, the environments in which the majority of
children spend their time, the dominant forms of development in this country for
the past fifty years, are significant contributors to this problem. Psychosocial,
hereditary and genetic factors do play a role in determining an individual’s
susceptibility to chronic disease such as obesity, but such factors do not fully explain
consumption and physical activity patterns.

Current research trends acknowledge the significance of the environment
among the multiple levels of determinants influencing nutrition and physical
activity, advocating for a more systems-based strategy in order to comprehensively
approach and adequately combat childhood obesity. In order to achieve the
maximum potential impact on population health, it is necessary for programs to
address the environmental factors that are linked to obesity. Interventions that
alter existing socioeconomic conditions and the social and built environment so that
people’s default choices are healthy ones require broad societal change (Frieden et
al., 2010). Public health officials, in coordination with governmental and
nongovernmental organizations, can implement many of these interventions and
have the ability to reach the broadest population. In contrast, a more individual-
based approach often promotes clinical interventions and counseling that have
limited population impact. Urban planners have significant influence over the
development and land use patterns that affect population health, and therefore have
the potential to serve a vital role in addressing this issue.

The literature review begins by presenting the roles of urban planners and
public health officials as examined through a history of city planning and public
health programs in the United States. Information on the current state of childhood obesity within the United States is then addressed; specifically exploring environmental contributors linked to the behavioral patterns of increased caloric intake and decreased physical activity. Potential approaches to combating childhood obesity are then examined, with a particular focus on strategies within the jurisdiction of urban planners. This literature review provides the background needed for understanding the relationship between land use and behavioral health as well as identifying what programs and strategies are relevant to address childhood obesity and whether urban planners are utilizing such programs as tools within their communities.

**SHARED ROOTS OF PLANNING AND PUBLIC HEALTH: A BRIEF HISTORY**

*Chronological Themes*

At one time, the disciplines of public health and urban planning were closely aligned. The fields of planning and public health emerged in the 19th century in response to the harmful effects of rapid industrialization and urbanization, particularly infectious diseases (Duhl, et. al, 2002; Melosi, 1999; Porter, 1999). As solutions to the city’s negative externalities were investigated, the work of both fields was connected through programs that addressed infectious disease, sanitation, housing, and social reform. Three chronological themes evolved within both professions’ responses to real or perceived urban crises:

1. Physical removal and displacement of wastes, diseases, infrastructure, and “pathogenic” populations.
2. Scientific rationality used as justification for the creation and implementation of new policies, programs, infrastructure, and professional credibility.

3. Moral environmentalism as the foundational theory supporting the role of physical design in altering social conditions (Corburn, 2009, pg. 27).

The aforementioned themes significantly contributed to the development, evolution, and resulting division of the fields of public health and planning.

**The Unifying Issue of Congestion and the Sanitary City (Pre-20th Century)**

During the latter half of the 19th century, rapid industrialization gave way to both internal and external migration to urban centers. The resulting population concentration coupled with non-existent basic services hindered quality of life for individuals lacking in economic means, with such consequences as: overcrowded housing; inadequate ventilation and lighting; noxious industrial human and animal wastes; and outbreaks of infectious diseases such as typhoid, cholera, yellow fever, and tuberculosis (Porter, 1999). The need to control disease was first manifested through the efforts of sanitary reformers who advanced the idea that the physical evils of the city (disease, crime, slums) were the tangible results of the moral evils associated with the genetic defects of the lower classes, primarily African-Americans, immigrants, and the poor (Hall, 2002; Porter, 1999). Regardless of such pioneering research as Edwin Chadwick’s 1842 *Report on the Sanitary Conditions of the Labouring Population in Great Britain* which documented the social inequalities associated with mortality rates and lead to the British Public Health Act of 1848, it was not until the last decades of the 19th and early 20th century, that most cities
within the United States acknowledged the magnitude of large-scale infrastructure improvements in advancing living conditions for all residents and preventing the spread of disease (Corburn, 2009, pg.38).

Sanitarians argued that the development of municipal sanitary sewers and drinking water systems necessitated the creation of urban and regional bureaucracies to provide long-term financing, land condemnation powers, a centralized administration, and police powers, as well as the “experts” (engineers, scientists, physicians, planners, and administrators) needed to drive such a vision (Frank et al., 2003; Hall, 2002). During this era, physical and social planning were linked with public health goals through such methods as the Sanitation Survey, as used in Memphis in 1878 after a yellow fever outbreak killed over 5,000 citizens (Porter, 1999). Such surveys were used to describe the physical conditions of a geographical location in order to determine the location of diseases and environmental conditions that contributed to disease.

By the end of the 19th century, environmental health planning and physical planning emerged as fields that used physical intervention and dilution to respond to urban health crises. The driving principles being the physical removal of environmental obstructions such as garbage, waste, waste-water, and slum housing, as well as the socially undesirable in order to provide a healthy, orderly, and moral urban environment-solutions embedded in White middle-class values. The urban planning agenda that reshaped the American industrial city through the use of local
government's newly delegated police powers assumed that an improved environment led to improved behavior and therefore health.

**Mechanization and Standardization of the Professions (Early-20th Century)**

As scientific knowledge became more advanced and more influential, the focus of public health shifted from controlling the physical environment to exploring means by which illnesses could be prevented. By the beginning of the 20th century, public health ideology began to shift from investigating ways to improve urban infrastructure to laboratory investigations of disease management of microbes and inventions focused on specific immunization plans (Porter, 1999; Frank et al., 2003; Corburn, 2009). There was a movement towards scientific reasoning as the platform for disease explanation and the drive to develop vaccines to immunize the poor, rather than alter or clean-up their physical environment. During this time, public health focused on such efforts as compulsory vaccinations for school children and chlorination of municipal water supplies (Corburn, 2009). At the same time, organized labor unions began to improve urban living conditions through social safety net guarantees and other workplace specific reforms, further dividing the fields of planning and public health (Frank et al., 2003). The division evolved both externally in the separation of the professions and internally within the profession through creation of specializations and departments.

During this same time, urban planners began to focus on the German “Haussman model” of zoning, which advanced a hierarchical arrangement of land use based on functionality (Hall, 2002). This model favored a separation of
residential areas from other land uses. The basis for the Haussman model was the economic division of functions (e.g. zoning), isolating those function that were deemed unhealthy but necessary (e.g. industry), and regulating the nature of contact occurring between citizens and land use functions. Zoning was a tool seen as “immunizing” urban populations from negative externalities of the economy, such as industrial pollution (Corburn, 2004; Hall, 2002). As the field of urban planning professionally evolved and was legitimately recognized, planners began to frame their work as representing cities that could be built anywhere (e.g. City Beautiful, Garden City, Neighborhood Unit, Chicago School, Concentric Zone Model) and were therefore, universally applicable.

**Scientific Rationality (1930s-1950s)**

During the pre-WWII era, as planners focused more on the larger scale of the built environment, including its beautification and infrastructure advancements, public health officials focused more on the responsibility of the individual in shaping health through the adoption of scientifically-based biomedical model of disease (Corburn, 2009). The biomedical model justified public health officials’ and physicians’ continued focus on the individual hosts of disease, rather than external factors, as the environment was harder to influence (Frank et al, 2003; Corburn, 2009). Public health ignored the social dimensions of disease and emphasized modifying individual “risk factors” reflected in one’s lifestyle such as diet, exercise, and smoking (Melosi, 2000).
During this time, New Deal Programs continued to separate the professions as federal agencies were created to rebuild infrastructure and federal funding for municipal planning and health departments separated (Weir, 2000). The planning profession continued to evolve and search for universal legitimization, using scientific rationality as the justification for physical intervention, focusing on economic development through large infrastructure and transportation projects.

Post WWII, there was a shift within the planning profession, from addressing the harmful externalities that were the result of private market activities in the urban environment, to promoting economic development in the suburban environment (Weir, 2000). This time saw the beginning of urban disinvestment in favor of Greenfield development, white flight, and resource distribution-modeling used as a “scientific” basis for the profession (Hall, 2002).

This trend continued during the 1950s and 1960s through Urban Renewal Programs, institutionalized by the 1949 Housing Act, which purported to rebuild sections of the city and remove downtown blight using the best of modern technology and a scientifically rational design (Fishman, 2000; Hall, 2002). The Federal Housing Administration (FHA) provided the federal insurance on home mortgages that served as the financial catalyst behind land development changes. Beginning in the 1940s, the FHA aggressively targeted suburban homes, rejected the urban grid pattern, and mandated new residential subdivision designs promoting curvilinear streets and cul-de-sacs. As a result of such federally mandated urban design patterns inner city neighborhoods were redlined (Corburn, 2009).
Disinvestment and segregation within the urban core continued, in part due to legislation such as the 1956 Federal Aid Highway Act, which contributed to the widespread destruction of the nation’s poorest neighborhoods in favor of automobile-oriented transportation (Frank et al, 2003; Hall, 2002).

As planners transferred their view to the broader built environment and land use patterns and public health officials turned inwards in favor of the laboratory examination of disease origins, both professions searched for a universal application to legitimize their place. As a result, both professions evolved separately, with separate agendas. Without a unifying concept to serve as a platform, planners and public health officials worked together only episodically around specific issues.

**Moral Environmentalism (1960s-1970s)**

During the latter half of 20th century, the field of public health was dominated by the bimolecular model of disease, attributing morbidity and mortality to molecular level pathogens influenced by individual lifestyles, behaviors, heredity, biology, or genetics (Susser, et al, 1996). Public health continued to move further away from the systemic reasoning behind the distribution of disease at a societal or population level. At the same time, by the 1960s, planners were dealing with widespread social unrest and facing the failures of large-scale public development projects (Corburn, 2009). As communities began to question the “business as usual” land use practices and patterns of urban renewal and suburbanization, advocacy planners began to shift in orientation towards social equity and environmental health concerns, utilizing moral environmentalism, the idea that rational physical
or urban designs can change social situations and conditions, as a theoretical framework (Frank et al., 2003). Influenced by the pioneering works of advocates such as Jane Jacobs and Rachel Carson, there was a brief renewal of grassroots urban planning and public health collaboration that challenged the advancement of science and technology as unequivocal and unquestionable signs of human growth and progress (Corburn, 2009). During this era, strong citizen activism facilitated a reconnection of planning and public health exemplified by such programs as President Lyndon Johnson’s War on Poverty and the creation of Medicare and Medicaid (Coburn, 2004). The creation of the EPA and adoption of the National Environmental Policy Act and Clean Air and Water Acts facilitated the use of environmental impact assessments (EIA) in order to analyze the ecological and human health effects of plans, projects, programs, and policies (Weir, 2000). Functioning as quantitative risk assessments to specifically consider human health effects, EIAs are an early example of a tool with the potential to bridge the public health and planning gap, but have historically lacked focus on chronic diseases treating all populations as equally susceptible while ignoring disproportionate hazardous exposure experienced by certain populations, and limiting the discourse and practice to the experts (British Medical Association, 1998; Steinmann, 2000).

The grassroots activism that reconnected planning and public health on a broad scale was short lived and by the 1970s resources continued to be redirected away from the urban core to suburban neighborhoods through block grants, and the practice of benign neglect was implemented (Corburn, 2009).
**Sprawl and the New Public Health Paradigm (1980s-Present)**

During the 1980s, the Healthy City Movement of the World Health Organization’s European Office was formed with the goal of reconnecting planning and public health through the creation of healthy cities plans. This program highlighted the critical role local government can play in promoting the global health agenda (WHO, 1988). In the United States, the Coalition for Healthier Cities and Communities began during the 1990s with the mission of coordinating city and county health departments to embrace the broad view of health reflected in the healthy cities movement (Corburn, 2009). Although the results of such strategies have varied, the presence of the strategies suggests an effort to promote health equity and a reexamination of the current isolated methods. A social model of health views health as an outcome of socioeconomic status, culture, environmental conditions, housing, employment, and community influences (WHO, 2000). In recent years, the public health community has acknowledged the unsuccessful myopic view of the medical model of health and identifies the necessity for a new public health paradigm, a systemic social model of health. A re-conceptualization for the distribution of disease across populations in order to explain health disparities has energized the field of social epidemiology (Berkman and Kawachi, 2000). The fundamental causes of health disparities are being reevaluated, with the impact of the built environment emerging as a priority to address.

At the same time, within the planning field, multi-disciplined activists have begun to organize around the need to address the consequences associated with
land use and development patterns over the past 50 years, providing the opportunity for collaboration between public health and planning professionals. The consequences of sprawl, including the impact on the natural environment (land use, traffic congestion) and the link of chronic disease and sedentary lifestyle can serve as a framework for future collaboration.

In 1900, the leading causes of mortality were infectious and communicable diseases such as pneumonia and tuberculosis. Now, the leading causes of mortality are not caused by bacteria or viral infection, but by routine behavior and daily habits (Frank et al., 2003). The urban solutions that were implemented decades ago to help solve public health problems now contribute to these health risks and the onset of chronic disease. The universal tools developed by planners in the early twentieth century in order to promote the legitimization of their profession as well as the health, safety, and welfare of the public are the same tools that are contributing to an environment that promotes unhealthy habits. The evolution of such development regulations into legal prescriptions for auto-dependent and sprawling environments highlights a widening divergence between their intent and the resulting consequences of physical inactivity and unhealthy eating.

**CHILDHOOD OBESITY TRENDS: THE CURRENT STATUS**

**Obesity Defined**

Childhood overweight and obesity have reached epidemic proportions, affecting all major demographic and socioeconomic groups in society, and are major public health problems nationally and globally. The terms overweight and obesity
are clinical terms that refer to conditions of excess body weight, relative to stature, and specifically, adipose tissue (Ogden et al., 2006). The definitions have been based on various parameters such as skinfold thickness, weight for age, weight for height, or body mass index (BMI) for age (Ogden et al., 2006). Obesity occurs when the amount of calories consumed is greater than the amount of calories used, causing the body to store fat. The development of obesity in childhood and subsequently in adulthood involves interactions among multiple factors that may shape daily diet and physical activity behaviors. These factors are individual (i.e., beliefs, attitudes, cultural experiences, taste preferences, and dietary intake habits), environmental or communal (i.e., homes, schools, food availability and cost, built environment), societal or macro (i.e., cultural norms, advertising and food marketing, social networks, technological developments, economic, public policy), and physiological (i.e., intrauterine and early life “programming”, appetite and satiety mechanisms and regulation, adipose tissue metabolism, genetic predisposition) (Schonfield-Warden and Warden, 1997).

**Obesity Trends**

In the United States, childhood overweight and obesity has more than tripled in the past 30 years (National Center for Health Statistics, 2004). The prevalence of obesity among children aged 6 to 11 years increased from 6.5 percent in 1980 to 19.6 percent in 2008 and among adolescents aged 12 to 19 years, obesity increased from 5.0 percent to 18.1 percent (Ogden et al., 2010; National Center for Health Statistics, 2004). According to the 1999-2002 NHANES survey, not only have the
rates of overweight increased, but the heaviest children in a recent NHANES survey were markedly heavier than those in previous surveys (NHANES, 2002).

**Children and Obesity**

Epidemiological research has identified various factors that contribute to childhood obesity: individual, community, societal, and physiological. For the purpose of this research, physiological factors such as genetics and hereditary are acknowledged, but are not closely examined due to the jurisdiction of the planning profession. The combination of sedentary lifestyles with other risk factors such as improper diet leads to overweight and obesity in children. As technological and societal advances have decreased the need for physical activity on a daily basis and increased the availability and affordability of calorically dense foods, modern individuals are exposed to unhealthy environments from a young age. Time constraints have pushed physical activity into the realm of leisure and healthy food preparation and consumption to those who have sufficient accessibility, resources and knowledge.

**Food Consumption**

Over the past thirty years, healthy food has become relatively more expensive and processed caloric dense food has become more affordable (Brownell and Frieden, 2009). Agricultural subsidies strongly influence what is produced and therefore what is available. Federal agriculture policy helps to determine which crops and animals US farmers produce, the prices of those crops, and subsequently which foods processors, distributors, and retailers ultimately make available to
consumers (Institute for Agriculture and Trade Policy, 2006). For the past 50 years, US farm policy has been increasingly directed towards driving down the price of farm commodities, such as corn and soybeans. At the same time, prices for fruits and vegetables have steadily increased. Within the US, the real cost of fresh fruits and vegetables have risen approximately 40 percent in the past 20 years, while the real costs of refined, caloric dense foods have declined (Institute for Agriculture and Trade Policy, 2006).

Low commodity prices have in turn, influenced investment by the food industry as low prices increase investment in a particular crop (e.g., corn and soybeans), encouraging the food industry to develop uses for these cheap commodities, such as added sweeteners and oils (USDA, 2002; Institute for Agriculture and Trade Policy, 2006). As these highly processed foods can be produced at very low cost, they generate a significant profit for the food industry, creating an incentive to market such foods rather than less refined, healthier foods. Consuming food and beverages high in energy density but low in overall nutritional value, such as foods with high sugar or fat content, is associated with weight gain and obesity (Ledikwe et al., 2006). As a prime contributor to weight gain and obesity, sugar-sweetened beverages comprise nearly 11 percent of children's total caloric consumption, with each additional daily serving of sugared soda increasing a child's risk of obesity by 60 percent (Wang et al., 2008).

As the food industry has the potential to significantly gain from societal consumption patterns around subsidized foods, the market for promotion of such
food is an essential component influencing dietary habits. Children are continually exposed to extensive marketing and promotion of food items (Committee on Communications, 1995). As studies have shown that young children are unable to distinguish ads from programs, the branding of foods with popular media characters has become a customary tool for shaping children’s consumption patterns and preferences (Liebert, 1988). Research has shown that completely eliminating exposure to food advertising on television could reduce obesity prevalence among US children ages 6-12 by an estimated 15 percent (Veerman et al., 2009).

The current model of agricultural production on both national and global scales encourages a more concentrated version of food production, processing, and distribution into the hands of a few corporate powers, with the result of vertical integration (Pothukuchi, 2004). This contributes to a market-based approach of food distribution, with the financial bottom line often surpassing community needs. The lack of available fresh food venues in economically poor areas often referred to as food deserts, leads to dependence on fast food restaurants and small neighborhood convenience stores which often have higher prices as well as considerably more processed and less healthy food options in comparison to larger supermarkets in suburban areas (Brown & Carter 2003). A study by the University of California at Los Angeles found that low-income people spend three times more of their disposable income on food than middle-income people (Brown & Carter, 2003). Limited food options create patterns of hunger and poor nutrition with
adverse health effects such as obesity, diabetes, hypertension, heat failure, strokes, and cancer (Pothukuchi, 2004).

**Physical Activity**

As active living has become separate from daily lifestyle choices, from work to transportation, the challenge lies in identifying where and when the promotion of physical activity is optimal. Leisure activities provide an opportunity for the promotion of physical activity. All youth ages 6-19 should get sixty minutes of moderate-to-vigorous daily activity (US Department of Health and Human Services, 2008). Currently, an estimated two thirds of youth do not get the recommended amount of daily physical activity and a quarter of adolescents do not achieve this level on any day (Eaton et al., 2008). Reducing sedentary leisure behavior, such as watching television and playing video games, is another important factor in combating childhood obesity. Almost half of children ages 8-16 watch at least three hours of television per day, two thirds of teens and 30 percent of children under age three have televisions in their rooms (Crespo et al., 2006). Children's weight increases with daily TV viewing time, and TV viewing in childhood and adolescence is linked to overweight in adulthood, primarily related to increased consumption of unhealthy food and exposure to food ads while watching (Crespo et al., 2006; Hancox et al., 2004).

As another potential venue for the promotion of physical activity, schools can have significant impact on child and adolescent behavioral patterns. Physically, schools are model locations for activity before, during, and after school hours.
Unfortunately, children today spend less time in structured physical education programs that provide opportunities for moderate-to-vigorous physical activity than in the past, due in part to budget constraints and pressures to focus resources on improving academic skills (US Department of Health and Human Services, 2008; Symons et al., 1997; Lee et al., 2007). Active transportation to school such as walking or cycling and formal physical education instruction has decreased, with an approximate 13 percent of school-age children reporting biking or walking to school (Nader et al., 2008; McDonald, 2007). The built environment and perceptions of built environment safety partially contribute to physical activity in children (presence of sidewalks, bike lanes, parks, playgrounds).

**Documented Effects of Childhood Obesity**

Obesity is associated with a number of adverse health and social consequences in children and adolescents. Obese children are more likely than non-obese children to be diagnosed with medical conditions such as increased rates of hypertension, type 2 diabetes, joint and bone disorders, and mental health disorders (Cruz et al., 2005; Freedman et al., 1999). Obese children are more likely to be stigmatized and bullied by peers leading to mental health disorders. Children treated for obesity are three times more expensive for the healthcare system and are two to three times more likely to be hospitalized than the average insured child (Whitaker et al., 1997). Obese children are also likely to incur future medical costs because obese children often remain obese as adults. A study published in the *New England Journal of Medicine* found that after age six, the probability of an obese child
being an obese adult at the age of 25 was more than 50 percent and a recent CDC study found that the probability of an obese adolescent (age 16-17) being an obese adult (age 37-38) was 80 percent for boys and 92 percent for girls (Whitaker, et al., 1997; Wang et al., 2008).

**APPROACHES TO COMBAT CHILDHOOD OBESITY**

There is a need for a comprehensive and coordinated national effort across multiple sectors and using multi-component interventions in order to effectively turn our society from one that encourages obesity to one that promotes health and supports healthy behaviors. A national effort should include changes to agriculture, transportation, and education policy, which can significantly influence the nutrition and physical activity environments, and interventions that occur in both clinical and community settings. Practicing health professionals recommend targeting specific behaviors to prevent and reduce childhood obesity including: increasing consumption of fruits and vegetables; reducing consumption of energy dense food; reducing consumption of sugary beverages; increasing physical activity; and reducing time spent in sedentary leisure activities (Singh et al., 2010). Health researchers advocate the promotion of a systematic policy approach in order to reduce the prevalence of obese and overweight children, including such specific measures as:

- Providing increased opportunities for physical activity by improving the existing trail/path system, sidewalks, and creating bike trails, playgrounds, and recreational facilities;
- Increasing access to healthy foods in socioeconomically disadvantaged neighborhoods by encouraging the development of grocery stores and other venues such as farmers’ markets;
- Launching educational or media campaigns that encourage parents to limit adolescents' television viewing and other recreation screen time;
- Enhancing programmatic resources for surveillance, monitoring and prevention intervention research on obesity (Singh, 2010).

The growing interest in the link between the built environment, behavioral choices, and ultimately overall health provides an opportunity for city planners to collaborate with public health officials. Acknowledging the importance of individual relationships among planners, public-health professionals and elected officials can help create the momentum for collaboration. As there is not one solution to the obesity “epidemic”, there is an opportunity for both public health and planning practitioners and researchers to promote variety of strategies from which to address the problem.

Conventional methods by planners and public health officials have focused on decreasing obesity levels by exclusively examining the opportunity for physical activity; however, recent research examining the accessibility of healthy foods highlights the need for strategies that address both caloric intake and energy expenditure (Laraia et al., 2004; Chung and Myers 1999; Kaufman and Pothukuchi 2000; Morland, Wing, and Diez Riux 2002). As the current state of childhood obesity levels is a result of an energy imbalance (more energy is being consumed than
expended through physical activity), sustainable strategies must address both elements. The traditional notions of planning encompass land use, transportation, community facilities, housing, and parks and open space, while public health officials traditionally address health in relation to physical activity, the natural environment, public safety, pollutants, and epidemiological issues related to such topics as mortality, obesity, and respiratory diseases (Ison, 2000). Within the planning framework lies a variety of opportunities to utilize traditional planning methods as well as evolving planning methods to address childhood obesity.

**Comprehensive Plans**

As a policy framework, the comprehensive plan can help to facilitate decisions about health and the built environment. When integrating health into comprehensive planning, there is not one single formula that planners must follow. Although comprehensive plans must work within the state and local regulations that often require a consistent set of elements, this method provides flexibility to communities, allowing them to make decisions based on community resources and public priorities. The comprehensive plan has the potential to serve as an avenue, linking traditional planning practice such as land development and community design with health themes such as physical activity and healthy eating (Schively, C. & et al, 2007). The literature identifies four approaches to incorporate health into comprehensive planning:

- The comprehensive plan update through which full integration of a concept, such as health is applied to each section of the plan. Beginning in 2004, King
County, Washington’s Comprehensive Plan (KCCP) prioritized public health through a minor plan update, a series of corrective amendments, revision of codes and ordinances, and the creation of separate health-related plans (Schively, C. & et al, 2007). Specifically addressing the relationship between obesity and physical activity, the KCCP states:

“The percentage of King County residents who are overweight or obese has risen rapidly since the late 1980s. Evidence suggests one major reason for rising obesity is the lack of physical activity. Growth patterns in suburban areas, which discourage walking and promote a reliance on private auto use, have contributed to this public health problem. Communities that feature many land uses, higher housing density, sidewalks and street connections and nearby services encourage physical activity such as walking or bicycling” (King County, 2004).

Physical activity and health are mentioned throughout the KCCP, but receive particular attention in the Urban Communities and Transportation chapters. The overall focus of the plan is on increasing outdoor physically-active transportation (King County, 2004).

- The amendment of an existing comprehensive plan through the addition or revision of selected elements, without revising the entire document. Approaches can include adding short text amendments, such as defining health to include a broader range of issues that are addressed in the current plan. Drafting supplemental sections of full elements can be a useful way to address health in a manner that responds to local concerns. The City of Richmond, California recently added a Health and Wellness Element to their
General Plan that specifically addresses the link between public health and community design (City of Richmond, 2009). The new element was added to the General Plan after the City completed a health impact assessment of existing land use policies, proposed new goals and policies related to public health, and community outreach (City of Richmond, 2009).

- The revision of existing health codes and ordinances. This approach focuses more on the implementation side of comprehensive planning, such as revising a community’s zoning ordinances, subdivision regulations, planned-unit development requirements, design standards, and other implementation tools. Here, such tools as pedestrian overlay zones, non-motorized circulation standards, and park dedication requirements may be used to translate comprehensive plan policies into action. In 2007, the City of Minneapolis, Minnesota amended their Food Code of Ordinance, creating the Minneapolis Staple Foods Ordinance. The Minneapolis Code of Ordinances Chapter 203.20 (c) states that all licensed grocery stores “must offer for sale food for home preparation and consumption, on a continuous basis, at least three (3) varieties of qualifying, non-expired or spoiled, food in each of the following four (4) staple food groups, with at least five (5) varieties of perishable food in the first category and at least two (2) varieties of perishable food in all subsequent categories: Vegetables and/or fruits, meat, poultry, fish and/or vegetable proteins, bread and/or cereal, and dairy products and/or substitutes” (City of Minneapolis, 2007).
• The creation of a separate, health related plan. Many communities create separate plans, such as a Downtown Master Plan or a Bicycle Master Plan, that go beyond the required comprehensive plan elements. Such plans may be related to issues specific to the community, focus on sub-areas of the community, or respond to issues of public concern. These thematic plans often influence the decisions made in the overarching comprehensive plan, and in some cases are adopted as an extension of the comprehensive plan. In 2008, Pierce County, Washington coordinated a community planning process in order to create the Pierce County Community Action Plan for Active Living and Healthy Eating, or PC-CAP (Tacoma-Pierce County, 2008). As a community action plan, the PC-CAP provided specific recommendations in order to impact eating and physical activity behaviors as well as identifying specific sectors responsible for such actions, and creating an implementation team (Tacoma-Pierce County, 2008).

A community's selection of approach will likely be based on a number of factors, including: staff and financial resources available; political and public support for integrating health into the plan; and the date and organization of the existing plan (Heath, 2006). Communities are also influenced by existing guidelines related to comprehensive plan content, yet there remains a great deal of flexibility in how the community addresses such requirements and the extent to which they provide additional content. The comprehensive plan can be used as a mechanism to influence and shape community-scale urban design and land use regulations,
policies, and practices that can be effective in increasing healthy food accessibility
and opportunities for active living (Heath et al., 2006). The comprehensive planning
process also presents an opportunity to engage the public in health issues.

**Zoning Ordinances**

Access to healthy food and facilities that provide opportunities for physical
activity are identifiable characteristics of the built environment, and therefore
constitute a potentially useful and effective venue through which public policy can
affect population health. The regulation of land use by local governments is a
function of their legitimate exercise of the police power, which grants state
governments the authority to make and enforce limits of the general security,
health, safety, and welfare of its citizens (Schilling et al., 2005). As land
development trends favored suburbia throughout the past 60-plus years, the decline
of the traditional neighborhood development within a “mixed use” model has been
the result of market preferences enabled by a strict adherence to Euclidean zoning.
The consequences of such land use separation have been a dramatic altering of the
landscape, transportation modes, and overall behavioral patterns. From a design
standpoint, the disconnection of residential street networks had favored the cul-de-
sac over the grid system (Sallis et al., 2006). Conventional development is
characterized by a hierarchy of roads and uses, with low-traffic residential roads
feeding into higher-speed arterials along commercial corridors that hinder
walkability as well as a separation of zones that rarely take livability standards
(proximity to home, work, school, etc.) into account (Sallis et al., 2006).
Common sense dictates the need for children to be provided places where they can be physically active on a regular basis. Although a lack of physical activity cannot be causally attributed to community design due to the problem of self-selection, research acknowledges the link between environmental factors and physical activity (TRB, 2005; Institute of Medicine, 2006). Particularly for children, research has highlighted the importance of proximity to active recreation facilities for children’s overall physical activity, finding that “children and adolescents with access to recreational facilities near their homes are more active than those without such access” (Sallis et al., 2000). It is significant to note that thus far, contrary findings have been based on parental reports rather than direct observation (Sallis et al., 2002). Facility accessibility is dependent on the proximity to children’s schools and homes, how costly they are to use, and how easily they can be reached as well as perceptions of route and facility safety (Sallis et al., 2006). Research has found fewer recreational facilities such as parks, sports fields, and trails in low-income neighborhoods as compared to affluent neighborhoods, highlighting the need to address recreational equity issues (Estabrooks et al., 2004). Encouraging mixed use zoning to increase recreational facility, residential, commercial, and school proximities is one strategy to increase the opportunity for physical activity in coordination with purposeful design features such as sidewalks, bike lanes, and way-finding signs.

Research suggests that limited access to food retailers, particularly chain grocers, has played an influential role on dietary quality (Wrigley et al., 2002). A
number of states and local communities have started to experiment with different types of policy initiatives, all of which are aimed at eliminating the geographical disparities in access to food. Recent policy proposals include the use of zoning laws to create a healthier food environment (Mair, et al., 2005). Zoning restrictions can limit the number or density of fast-food establishments, ban fast food outlets and/or drive-through services, establish buffer zones between schools and recreation areas and businesses such as fast food restaurants, convenience stores, and mobile food vendors (Mair et al., 2005). In 2008, the Los Angeles City Council approved a measure to place a one-year moratorium on the opening of new fast food establishments in several south Los Angeles neighborhoods with high fast food density and high obesity. Defining fast food as, “[a]ny establishment which dispenses food for consumption on or off the premises, and which has the following characteristics: a limited menu, items prepared in advance or prepared or heated quickly, no table orders, and food served in disposable wrapping or containers,” the new law gave city planners time to assess the best use of minimal remaining land in these neighborhoods for the creation of a healthier food environment as well as attempting to draw grocery stores and sit-down restaurants to the area (Strum et al., 2009). Evidence that greater density of fast food outlets is associated with increased obesity, suggests that zoning regulations are worthy of further study (Li et al. 2009).

Restrictions on fast-food establishments alone are one-sided and not sufficient in altering consumption trends to an extent that would affect obesity levels. Recent
policy proposals include the use of zoning laws to create a healthier food environment by providing incentives for chain grocers as well as mobile food vendors to operate in underserved areas and providing incentives for existing food retailers to offer healthier products (Chen and Florax, 2010). Alternative policy proposals that have been implemented include monetary incentives to existing food stores to stock healthy food items through “Healthy Corner Store” initiatives and the financial support and subsidization of farmers’ markets and other venues to facilitate access to fresh fruits and vegetables (Burtness, 2009). Another strategy to promote healthy eating includes provisions for urban agriculture. Defined as the growing, processing, and distribution of food and other products through intensive plant cultivation and animal husbandry in and around cities, zoning measures for urban agriculture can be found throughout the United States in cities such as Seattle, Washington where at least one garden per 2,500 households is required (Bellows, Brown, & Smit, 2005). The success of these types of interventions depends on the policymaker’s ability to identify communities most at need for a particular type of policy intervention.

Assessment Tools

Health Impact Assessment

The Health Impact Assessment (HIA) serves as a tool to increase partnerships and communication between public health professionals and planners and other decision makers to improve the health of the population. According to the World Health Organization (WHO), a HIA is a combination of procedures or methods by
which a policy, program, or project may be judged as to the effects it may have on
the health of a population (WHO, 2000). Countries using HIAs include: Canada, New
Zealand, Australia, Thailand, United Kingdom, Ireland, Sweden, and the European
Union. Within the United States, local health departments have begun implementing
HIA’s and analyzing policies ranging from living wage ordinances to housing
developments to transit changes.

As an HIA serves as a tool to evaluate the health impact of any project or policy,
a refined HIA could be used to assess elements within traditional planning
jurisdiction including: development decisions; comprehensive plans; school sitings;
and land uses. Possible state legislation could give local public health agencies and
planning department’s technical assistance and grants to use HIAs for the evaluation
of land use planning decisions in their communities (Dannenberg et al., 2006).

Steps to conduct an HIA include: screening to identify policies or projects for
which an HIA would be appropriate; scoping to identify which health impacts
should be assessed and which populations are affected; assessing the magnitude,
direction, and certainty of health impacts; reporting of results to decision makers;
and evaluating the impact of the HIA on the decision making process (Dannenberg
et al., 2006). The methods for conducting HIAs are similar for place-based projects
such as new residential developments, public policies such as subsidized mortgages,
and planning processes such as transit system expansion. HIAs may include both
policy and project components, such as zoning revisions needed to allow transit-
oriented development to be built. The HIA model could serve as a communication
tool between local health departments, planners, and community decision-makers, enabling the latter to consider improved designs and programs to favor health promotion or minimize adverse effects on health (Figure 4).

Figure 2: The Health Impact Assessment
Source: www.euro.who.int

Although current policies may have substantial impacts on public health, imprecise policy wording or inconsistent implementation (e.g. frequent use of variances) can impede quantifying changes in associated health outcomes. Projects and policies typically affect geographical regions and populations for which it is easier to define potential health outcomes, identify stakeholders, and collect baseline data (Danneberg et al., 2006). As health-related data may not be available for smaller geographical areas (e.g. a specific neighborhood) or demographic
populations (e.g. a minority ethnic group) affected by a project, the HIA can be used to evaluate a diversity of characteristics affected by a project or policy.

Currently in the United States, the National Environmental Policy Act allows the assessment of health impacts within the environmental impact assessment (EIA) process in the context of physical environmental changes (Steinemann, 2000). In practice, such assessments are usually limited to physical and chemical hazards (e.g., pollution of water may lead to gastrointestinal illness) and exclude socio-behavioral factors not mediated by toxicological mechanisms (e.g., construction of walking trails may lead to increased physical activity) (Steinemann, 2000). Although conducting an HIA through an existing regulatory practice such as an EIA would ensure legitimacy and use, regulations that broaden the required scope of EIAs would face political and legal challenges as well as funding issues. In contrast, a voluntary HIA would still serve to inform a planning agency, but implementation would be less litigious and more politically acceptable (Steinemann, 2000).

HIA practitioners need better health information systems, knowledge of health impacts, and access to previous HIAs as models. Decision makers need clear information on the kinds of health impacts expected and measures to alleviate these impacts. As of 2009, over 50 HIAs had been conducted in the United States such as Portland, Oregon’s SE 122nd Avenue Pilot Project, which used a HIA to assess the feasibility and implications of integrating health into a specific neighborhood plan that examined the distribution of healthy eating and active living environmental supports in low-income neighborhoods (City of Portland, 2010). Practical HIA
guides developed in Canada and Europe could be adapted for use in the United States (Kemm et al., 2004).

**Healthy Development Measurement Tool**

Similar to the Health Impact Assessment, the Healthy Development Measurement Tool (HDMT) is a comprehensive evaluation metric to consider health needs in urban development plans and projects. Measurable indicators and development targets provide information about the ways in which health is impacted by a proposed development project and focuses attention on ways that development can improve population health (San Francisco Department of Public Health, 2005). By providing measures and criteria for development, it allows those involved in policy and decision making to make more informed choices between trade-offs. As a result, the HDMT may provide an additional means to support greater transparency in the development process. Intended to encourage voluntary efforts to improve health-oriented development, the HDMT identifies a range of actions that could also reduce the costs associated with problems such as vehicle injuries, obesity, asthma, diabetes, representing an innovative approach to public health practice in that it provides tools and methods to assess health in land use planning (Corburn, 2009).

Created by the San Francisco Department of Public Health through the Eastern Neighborhoods Community Health Impact Assessment (ENCHIA) process that analyzed how development in several San Francisco neighborhoods would affect the social and physical environments that are most important to health. The
HDMT was a response to intense development pressures throughout that region during the housing boom during the first decade of the 21st century (Corburn, 2009). The eighteen-month ENCHIA process resulted in a number of outcomes including identifying the need to integrate much of the data and policy research into a tool to support evidence-based and health-oriented planning and policy-making.

The HDMT has been designed for several potential purposes identified in the table below (Table 1). Members of the ENCHIA Community Council envisioned that City agencies could use the HDMT in comprehensive planning and in plan and project review. For example, to evaluate land use development plans, one can assess how the expected outcomes of development projects or policies affect the community health indicators, or whether a plan achieves development targets. The HDMT can be used by anyone who has data on the outcomes of a project, plan or policy, including planners, developers, government agencies, and community residents and organizations. To date, twelve applications of the HDMT have been completed, with five applications within the San Francisco area and seven applications throughout the nation (San Francisco Department of Public Health, 2010).
<table>
<thead>
<tr>
<th>USERS</th>
<th>APPLICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Agencies (e.g., Planning, Public Health, Redevelopment, Parks and Recreation, Public Works, Transportation)</td>
<td>• Use checklist as a screening tool to evaluate projects, identify benefits and needs for improvement, and develop recommendations for improvement.</td>
</tr>
<tr>
<td></td>
<td>• Evaluate the merits and health impacts of development projects and plans.</td>
</tr>
<tr>
<td></td>
<td>• Use the indicators to assess baseline neighborhood conditions and identify priority needs.</td>
</tr>
<tr>
<td></td>
<td>• Identify a set of monitoring indicators to evaluate the impact and measure the progress of community plans.</td>
</tr>
<tr>
<td></td>
<td>• Inform design choices and to demonstrate benefits of projects.</td>
</tr>
<tr>
<td>Neighborhood Planning Groups</td>
<td></td>
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<td>Resident-Initiated Planning Groups</td>
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<td>Developers</td>
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</tbody>
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Table 1: The Healthy Development Measurement Tool  
Source: www.thehdmt.org

Although the HDMT can be tailored to a project-specific basis, at the basic level it is comprised of a set of metrics to evaluate the extent to which land use plans, projects, or policies will advance human health. The HDMT can be broadly categorized into six elements, including: Environmental Stewardship; Sustainable and Safe Transportation; Public Infrastructure; Social Cohesion; Adequate and Healthy Housing; and Healthy Economy (Corburn, 2009). Each element is organized internally by content into a set of Community Health Objectives in the form of a checklist with targeted benchmarks (Figure 3). The HDMT example further breaks down each objective to include the following resources:

- Community Health Indicators which include site specific data and maps to provide baseline data;
“Healthy Development” Targets which include development criteria to be used to assess whether urban development plans and projects help achieve community health objectives;

Policy and Design Strategies providing a list of potential actions that can be taken by project sponsors or policy makers to achieve development targets in the checklist and advance community health objectives;

Health-based Rationales includes research that describe the nexus between community health objectives and physical and mental health (Corburn, 2009).

The value of the HDMT is that it focuses on broadening the range of social, economic, and environmental resources needed for health on a population level. It does so by recognizing a range of resources needed for optimal health at the societal level and identifying measurable and actionable ways to meet those needs through urban development. It combines quantitative analysis of health indicators with a qualitative assessment of whether plans and projects meet HDMT development targets (Corburn, 2009).
Health Development Measurement Tool: Organization

**Health-based Rationale**
Grocery stores are a necessary resource for healthy food access and consumption.

**Baseline Data**
Use of GIS maps to illustrate the proportion of population that lives within a 1/2 mile of full service food outlet.

**Healthy City Element**
Public Infrastructure

**Community Health Objectives**
Ensure access to daily goods and service needs (healthy foods).

**Measureable Indicator**
Households within 1/2 mile from full-service grocery store.

**Development Target**
For residential uses, is the project within a 1/2 mile of a full-service food outlet?

**Policy/Design Recommendations**
1) Use public benefits funding to support business assistance for full-service food outlet, or
2) Improve pedestrian, bike, or public transportation services to existing food markets.

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**Figure 3: HDMT Organization**
Source: www.thehdmt.org
School Environments

Schools represent a universal vehicle through which children’s behaviors can be influenced. As most youth attend school and spend a large portion of their days in school, this environment represents a significant opportunity to encourage physical activity and healthy nutrition. Currently, considerable barriers hinder the typical school’s capacity to serve as a health-promoting venue. Such barriers include: land use trends influencing school siting practices; the influence of school siting on students’ transportation mode choice to and from school; the prevalence of highly processed, nutritionally depleted, and densely caloric foods and beverages in school-sponsored vending machines, student stores, snack bars, and a la cart lines located in school cafeterias; and the lack of adequate time devoted to physical activity through structured physical education and recess (Schively, C. & et al, 2007).

The following paragraphs address school-based strategies that present opportunities for planning collaboration.

The location of schools (school siting) impacts the ability of students, parents, teachers, and administrators reach by walking or bicycling. The trend to build schools on the fringes, where they are hard to walk or bicycle to is a consequence of the relatively low cost of land in the suburbs or undeveloped areas, the ability to purchase and “build big” on large swaths, and the aging of neighborhood schools (Lee et al., 2008). There is also a disincentive to retrofit or renovate schools due to the two-thirds rule, which states that if the cost of fixing a school exceeds a certain percentage of new construction costs, a new school must be built (Lee et al., 2008).
A small number of states, including Arizona, Florida, and Maine have made efforts towards healthy school siting practices (Lee et al., 2008). In 2007, the Environmental Protection Agency (EPA) announced a grant program to document and analyze state level school siting policies that create barriers to walking or biking to school, and to help overcome challenges to health, smart growth, and environmental quality (EPA, 2010). At the state level, policies can require school districts to partner with local government, community residents, and city planners to develop community-centered schools in smaller sites. Another strategy is to remove acreage requirements, which hinder opportunities to build smaller schools in communities that are within walking distance from students’ homes. At the federal level, school facilities planning guidelines could promote or require consideration of health impacts (e.g., air quality and physical activity) and the preservation of neighborhood schools (Lee et al., 2008).

The U.S. Department of Health and Human Services and other health experts recommend at least 60 minutes of age appropriate physical activity daily for children (Safe Routes to School, 2010). Researchers have become increasingly interested in understanding the relationship between walking and bicycling to school and student health; current findings indicate a positive relationship between active travel to school and higher levels of physical activity (Tudor-Locke et al., 2001). Thirty years ago, 60 percent of children living within a two-mile radius of a school walked or bicycled to school. Currently, less than fifteen percent of children walk or bicycle to school, twenty-five percent commute by school bus, and well over
half are driven to or from school in vehicles (SRTS, 2010).

Safe Routes to School (SRTS) is a national effort intended to reverse these trends by funding projects that improve safety and efforts that promote walking and bicycling within a collaborative community framework. The Safe Route to School National Partnership, representing more than 300 organizations and governmental agencies, was established to make the best use of available federal SRTS funds, to remove policy barriers to walking and biking to school, and to provide information, resources, and models to state and local agencies. SRTS can also serve as a framework or starting point for complete streets through the support of campaigns such as safe routes to health care, transit, food, and parks (Lee et al., 2008). An evaluation of the SRTS program in Marin County, California found a 64 percent increase in walking and a 114 percent increase in cycling to school (Staunton et al., 2003). By ensuring that children can walk and bicycle to school safely, including SRTS non-infrastructure activities, and infrastructure improvements to provide sidewalks and bicycle plans, the opportunity to promote healthy physical activity habits at a young age presents a venue to continue such healthy practices into adulthood, giving physical activity a role not just in leisure activities, but also in transportation.

Schools not only provide the opportunity for children to be physically active, they also significantly influence nutritional consumption habits. Approximately 30 million children eat a school lunch five days a week, 180 days a year, and research has linked the availability of fruits and vegetables in school lunches with children’s’
overall consumption of fruits and vegetables (Vallianatos et al., 2004). Currently throughout the majority of public schools within the United States, students are exposed and encouraged to buy unhealthy foods and beverages from a variety of venues. Even students who choose not to purchase such foods are subjected to a barrage of advertising that encourages them to make poor nutritional choices while building brand loyalty to soda and junk food manufacturing (Ashe et al., 2007). Programs such as the National Farm to School Network developed from the desire to support community based food systems, strengthen family farms, and improve student health by reducing childhood obesity. Beginning in the late 1990s, Farm to School programs have spread from approximately 400 in 2004 to over 2,000 in 2009, throughout 40 states (USDA, 2010). Currently lead by eight regional agencies, national staff, and supported in part by a $2.4 million grant from the W.K. Kellogg Foundation, Farm to School is a Comprehensive Program that teaches students about the “path from farm to fork, and instills healthy eating habits” to combat rising childhood obesity rates (USDA, 2010). The Farm to School Program provides a venue to combat childhood obesity by addressing eating habits through nutritional educational programs that encourage healthy eating as well as providing healthy meal options in schools (Vallianatos et al., 2004).

**SUMMARY**

Over the last three decades, obesity rates in the United States have doubled in adults and tripled in children and adolescents, and reports now indicate that approximately one-third of children and adolescents and two-thirds of adults are
either overweight or obese (Ogden, et al., 2006). As most Americans continue to believe that weight is an issue linked almost exclusively to personal responsibility, it is not without a coordinated, collaborative effort from multiple venues that childhood obesity will be adequately addressed (Trust for America’s Health, 2010). Current obesity rates and the complex factors influencing behavioral adaptation demonstrate the need for cooperative strategies to address childhood obesity. Planners have the opportunity to address childhood obesity through the adaptation of traditional planning tools. This research will examine established and emerging strategies that are being incorporated into planning practices that address community health and childhood obesity; determine how active Southeastern city planners are in purposely engaging in such practices; and in general, gain a greater understanding of the relevant themes that influence the establishment of such strategies. This project will attempt to answer the following research questions:

1. What strategies are planners using to address community health?
   - Which strategies address healthy food access? Physical activity opportunities?
   - Do such strategies specifically target childhood obesity?

2. How active are planners throughout the Southeast in deliberately implementing such strategies?

METHODOLOGY

Over the past three decades, obesity has increased among all racial, ethnic, and income groups (Ogden, et al., 2006). This is particularly concerning given
obesity’s link with numerous chronic health conditions, including diabetes, stroke, heart disease, high blood pressure, and some cancers. Planners have the opportunity to address childhood obesity through coordination with public health officials, as well as policy and land use tools.

**Framework**

The objectives of this research were to examine established and emerging strategies being incorporated into planning practices that address community health and childhood obesity, determine how active Southeastern city planners are in purposely engaging in such practices, and in general, to gain a greater understanding of the relevant themes that influence the establishment of such strategies. In order to gather a diverse data set and achieve these objectives, a two part mixed methods research design based in grounded theory was employed. Basing the methodology on the grounded theory approach, which identifies reality as a socially constructed and constantly negotiated phenomenon between people, necessitates the sample population to be small scale and focused and the methods to be adaptable (Corbin and Strauss, 2007; Morse and Richards, 2002). Employing grounded theory was particularly useful throughout the two part mixed-methods approach in which the interview results informed the survey construct as themes emerged from the interviews.

Methods included primary data collection using two different methods: focused interviews and an online survey. The focused interviews were conducted to determine established strategies incorporated into planning practices that address
community health and to inform the survey construction. The interview research design included open-ended questions as well as unplanned prompts to facilitate theme emergence. The identified themes helped to inform the online survey, specifically targeting planners throughout Southeastern cities to determine whether or not planners were actively addressing community health and if not, what barriers prevented them from doing so. Data collection was employed using two identified measurement devices: the semi-structured interviews of health officials and planners from communities with established health plans and strategies, and the semi-structured survey conducted with Southeastern city planners in communities with populations greater than 25,000 people. Data analysis included both qualitative interview analysis and quantitative survey analysis. Qualitative methods were used to provide an in-depth analysis of the interviews based in grounded theory in order to determine emerging themes. Quantitative methods were used for descriptive information about the planning perceptions of community health and the built environment, the presence of a health plan or health strategies, and perceived barriers to the implementation of such strategies.

**Focused Interviews**

**Purpose**

Focused interviews were the first technique in this research project. The interviews were designed to determine what types of strategies are being implemented, how such strategies are structured and funded, and which parties are
involved. The information gathered from the interviews was done so with the purpose of informing the second technique in the research project, the survey.

**Grounded Theory Approach**

Grounded theory was used to inform the interview methodology. This approach facilitated the determination of the interview population size, interview format development, interview implementation, and interview analysis. As the purpose of the interviews was to understand the process of adapting planning to include community health aspects, as well as how planners and health officials play a role in that process, the use of grounded theory was appropriate to develop a hypothesis specific to this particular process in order to inform the survey construct.

**Interview Guide and Development**

The semi-structured interviews utilized a conceptual guide to ensure that certain topics, elements, patterns, and relationships were covered in the interview process. The interview process utilized prepared questions and all interview participants were asked the same general questions, not necessarily in the same order and some questions were supplemented with unplanned probes. Adjustments to the conceptual guide were made by probing interviewees for further elaboration on answers. The interview questions were loosely derived from Glaser’s “Six C’s”: Causes, Context, Contingencies, Consequences, Covariances, and Conditions as well as identified themes of program involvement derived from the literature: Staffing, Financial Resources, Program Governance, Political and Public
Support, and Date and Organization of Existing Plans and Strategies (Corbin and Strauss, 2007; Morse and Richards, 2002; Heath et al., 2006). A copy of the interview questions can be found in Appendix B.

**Interview Population**

The initial population scope was determined using a set of criteria for components and organizations identified in the literature:

- Strategy in place for at least one year, and
- Strategy utilizes collaborative planning process involving city planners, health officials, and program staff.

Additional subjects were gathered through a snowball interview process. The list of potential interviewees was generated through academic contacts and internet searches. To ensure an appropriate broad range of perspectives were included, communities throughout the country were identified. As shown in Table 2, nine communities were identified.
<table>
<thead>
<tr>
<th>Program Name</th>
<th>Location</th>
<th>Planner</th>
<th>Health Official</th>
</tr>
</thead>
<tbody>
<tr>
<td>LiveWell Greenville*(pilot run)</td>
<td>Greenville, SC</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Tri-County Health Department</td>
<td>Denver, CO</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Minnesota SHIPS</td>
<td>Minneapolis, MN</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Shape-Up Somerville</td>
<td>Somerville, MA</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Richmond General Plan</td>
<td>Richmond, CA</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Healthy Eating Active Living Program</td>
<td>King County, WA</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Oregon Public Health Institute</td>
<td>Portland, OR</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Department of Physical Activity and Nutrition</td>
<td>Tacoma, WA</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Healthy Communities</td>
<td>Philadelphia, PA</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

**Table 2: Focused Interviews**

Initial interviews for each of the nine communities were conducted with a program, county, or city health official. In order to identify other health strategy participants, particularly city planners, interviewees were asked, “Is there anyone else to whom I need to speak with in your community?” A list of additional interview candidates was then generated, with eight out of the nine communities having at least one planner participate in an interview. It was significant to have interviews from both health officials and city planners in order to gain an appropriate perspective on the process of implementing coordinated health strategies.
**Recruitment**

After population contacts were determined and interview questions were finalized, a recruitment email was sent to the respective contacts to describe the project and request candidate participation. A copy of the recruitment letter can be found in *[Appendix B]*. A follow up request letter was sent two weeks after the initial recruitment letter. Upon agreement to the interview, each candidate responded affirmatively with a schedule of possible interview times and a contact phone number.

**Interview Analysis Process**

Interviews ran from November 2010 through January 2011. Assumptions were made that each interviewee would answer each question honestly. Each interview was completed over the phone and lasted between 25 and 55 minutes. An audio recording was made, and key word notes were taken during each interview. Each recording was transcribed verbatim and then utilized in comparison against the key word notes. The initial interview was reviewed with the broad question of “What is the situation?” in order to determine emerging themes. All subsequent interviews were coded in comparison to the themes identified in the first interview. Individual responses were analyzed and coded for themes or core categories with a high frequency of mention. Simultaneously, potential rationales, or memos were created along with core-category identification which helped to identify potential connections between categories. Interviews were analyzed until saturation
occurred, at which point the analysis was sorted and a master spreadsheet organized by themes was created in order to analyze the data as a whole.

**Online Survey**

**Purpose**

As recent research examining the geographical distribution of childhood obesity found that youth throughout the Southeast are more likely to be overweight and obese than any other region, this population is of particular interest (Singh et al., 2010). Researchers have determined that such geographic disparities can be attributed to individual, household, and neighborhood social and built environment characteristics accounting for more than 40 percent of state variance in childhood obesity and overweight *(Table 3)* (Singh, et al, 2010). Although geographical variability has yet to be fully explored, environmental factors such as crime, access to recreational facilities, outdoor parks and playgrounds, vehicular traffic congestion, fast food outlets, and media promoting unhealthy food choices can significantly affect behavioral choices and population health. When considering the sprawl-like design often associated with development patterns over the past half-century, one could hypothesize that newer development, such as is found in the Southeastern Region, could contribute to population health.
States with Highest Obesity Rates (2003-2007)

<table>
<thead>
<tr>
<th>State(s)</th>
<th>Obesity Rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mississippi</td>
<td>33.80%</td>
</tr>
<tr>
<td>Alabama tied with Tennessee</td>
<td>31.60%</td>
</tr>
<tr>
<td>West Virginia</td>
<td>31.30%</td>
</tr>
<tr>
<td>Louisiana</td>
<td>31.20%</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>30.60%</td>
</tr>
<tr>
<td>Kentucky</td>
<td>30.50%</td>
</tr>
<tr>
<td>Arkansas</td>
<td>30.10%</td>
</tr>
<tr>
<td>South Carolina</td>
<td>29.90%</td>
</tr>
<tr>
<td>Michigan tied with North Carolina</td>
<td>29.40%</td>
</tr>
</tbody>
</table>

Table 3: States with Highest Obesity Rates
Source: Singh et al., 2010

Survey Population

In order to determine how active planners throughout the Southeast are in implementing identified community health strategies, an internet based survey was conducted with the population scope based on three factors (Table 4):

- Southeastern city as defined by the U.S. Census;
- Population>25,000 in order to provide demographic diversity; and
- City Planners employed as listed under APA membership and/or municipal website.
Both Florida and West Virginia were been identified as potential outliers due to the number of cities that meet the scope criteria. As such states have the potential to significantly skew the data based on survey response levels, those states were not included in the survey. According to the U.S. Census, a total of 292 cities within the Southeast have a population of 25,000 or greater. After removing the outlier states of Florida and West Virginia, a total of 201 Southeastern cities comprised the targeted population. As a contact list for this population was unavailable, Internet searches for every community, phone calls, and searches through the American Planning Association’s member directory were used to find the planners’ email contacts. The final population with available email addresses came to a total of 183 community planners (Figure 4). A list of states and number of contacts for each state can be found in Appendix C. The states of North Carolina, Georgia, and

<table>
<thead>
<tr>
<th>STATE</th>
<th>CITIES&gt;25,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>19</td>
</tr>
<tr>
<td>Arkansas</td>
<td>19</td>
</tr>
<tr>
<td>Georgia</td>
<td>28</td>
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<td>Florida</td>
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<td>Louisiana</td>
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<tr>
<td>Kentucky</td>
<td>13</td>
</tr>
<tr>
<td>Mississippi</td>
<td>14</td>
</tr>
<tr>
<td>North Carolina</td>
<td>32</td>
</tr>
<tr>
<td>South Carolina</td>
<td>16</td>
</tr>
<tr>
<td>Virginia</td>
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<tr>
<td>West Virginia</td>
<td>5</td>
</tr>
<tr>
<td>Tennessee</td>
<td>26</td>
</tr>
</tbody>
</table>

**Table 4: Eligible Southeastern Cities**

Source: US Census
Tennessee had the highest percentage of contacts, while Kentucky, Louisiana, and Mississippi had the smallest percentage of contacts.

![Survey Contact Population](image)

**Figure 4: Final Survey Population**

Figure 5 displays the community populations of contacts for the survey. Most contacts were planners in communities with populations between 25,000-50,000 people, which range from small town to small city. Relative to other contacts, there were few metropolises (500,001 or greater) and few larger cities (250,001-500,000). This distribution may be helpful in examining information regarding the role of community size in health planning. Population categories were determined by the U.S. Census Metropolitan Statistical Area (MSA) definitions.
Survey Guide and Development

In order to increase response rate for surveys, social response theory was used in constructing questions. Social response theory focuses on appealing to audiences in multiple ways, and emphasizes utilizing more mutually supportive response inducing factors in an attempt to appeal to different types of respondents that exist within a survey population (Dillman et al., 2009). The overarching idea is that people’s voluntary actions are motivated by the return these actions are expected to bring from others; people participate when the perceived benefits outweigh the costs. This theory examines the idea that response rate will increase based on various factors, including: providing information about the survey, highlighting the
importance of participation; appealing to the norm of social tendencies by asking for help or advice; showing positive regard by personally addressing contacts and providing various ways in which people can respond or ask questions; the use of verbal appreciation and tangible rewards offering thanks and knowledge of financial incentives in advance; and establishing trust by offering to send a copy of the final document to participants.

To ensure a higher response rate and to limit length, demographic questions were minimized to ask only pertinent information. Each respondent was meant to interpret survey responses the same way, therefore the survey was tested by a group of peers and planning colleagues. The questions were adjusted to incorporate suggested changes and improve flow and understandability. A copy of the surveys can be found in Appendix C. The survey comprised 25 to 36 primary questions designed to elicit four principal kinds of information:

- Demographic information enabling identification of the respondent’s geographical location and within the professional planning hierarchy;
- The respondent’s own attitudes and perspectives regarding the built environment, planner roles, and community health;
- The respondent’s assessment of planning institutional and local government attitudes, perspectives, and capacities regarding engagement in community health planning; and
- The basic structure and collaboration involved in community health planning if so involved.
The survey included multiple choice answer and open response questions. Most questions allowed the respondent to contribute supplemental, unscripted feedback.

*Survey Implementation*

The online survey tool, Survey Monkey, was used to conduct the surveys. After population contacts were determined and survey questions were finalized, a recruitment email was sent to the respective contacts to describe the project and request the planners’ participation. A copy of the recruitment letter can be found in Appendix C. A link to the survey was included within the email. The participants were given three weeks to complete the survey and two email reminders were sent each week after the initial email. In total, the survey ran for four weeks during February, 2011.

*Threats to Validity: Response Rate*

The internet-based survey response rate is a threat to validity of the findings. The mode of survey measurability affects response rates, with recent studies showing an increase in internet-based response rates compared to paper-based response rates (Dillman et al., 2009). Although internet-based surveys have a significant time cost upfront though online survey entry, paper-based surveys have a larger monetary cost in mailing materials and postage. Due to the budgetary constraints of this project, an internet-based survey mode was the most cost effective and efficient in regards to data analysis collection.
SUMMARY OF FINDINGS

Interview Results

The interview analysis resulted in the identification of six themes and two subthemes, including: language; political will; collaborative leadership; tools; evaluation; sustainability of strategy including the two subthemes of structure and funding.

Language

Planner respondents, who were more likely to regularly work with both elected officials and the public at large, tended to use more broad generalizations when discussing community health in relation to the built environment. They also seem to use phrases that have a positive connotation to them, most commonly: quality of life; healthy eating and active living; and sustainability. Health officials are more likely to use specific terms such as chronic disease and obesity. Health officials were also more likely to express frustration with the vague language that can be associated with the overall political process, expressing concern over the lack of specificity when planners and/or elected officials referred to community health related initiatives.

- [T]he city avoids using the term obesity and instead uses the term health benefits, or active living, or active transportation. I think in the Mobility Master Plan, we talked about Health Benefits, but didn’t use the term obesity...I’m not aware of the City specifically targeting obesity as such...it more housed in quality of life terms, that having people on the streets, walking instead of
using their vehicles, is more considered a quality of life issue here, and the health benefits are partnered with that.

- It was really us [health officials] going to them [city officials], saying, “You said you wanted to do healthy comprehensive planning, what did you mean by that?” For example, the city wanted to do a non-motorized transportation master plan, we said, “Well, what about including land use elements in that? And look at healthy food access?” The response was often hesitant or no at first, but we pushed and said, well, you will add these elements. You need to look at the interconnectedness of all of these things. We’re not putting you on the hook to have any outcomes related to this, but you will examine it, and we think that you’ll find that you’ll get some good information and outcomes, if we look at this in a more holistic approach.

One possible explanation of planner lack of specificity is lack of health-specific training. Planners often come from a variety of backgrounds such as geography or public administration, where it is unlikely to find health-related training. City planners are more likely to be used to working with the political machine of city council and other elected officials, where there is a need to utilize more neutral terms in order to garner needed support. The implementation of plans takes a significant amount of time from conceptualization to institution. Plans can be waylaid by a change in political climate or the loudest constituent in the public meeting. In contrast, public health officials and non-profits may not have such experiences.
Political Will

Two opposing trends emerged in regards to the political will behind planning and community health: its presence or absence. Communities where interview respondents mentioned the presence of strong political will, most commonly through mayors or city council, were more likely to have an integrated process addressing such matters (i.e. consistent partnering between departments). In contrast, cities that did not necessarily have a strong political will supporting the strategies were more likely to be concerned with the sustainability of their initiatives, particularly in the immediate future. Such municipalities also were less likely to have made significant progress in the institutionalization of health strategies or to have established a consistent working relationship with various city departments, instead working with city departments on a more sporadic basis. Health officials within such communities were more likely to express frustration with the political process of institutionalizing health strategies.

- Particularly with the Comprehensive Plan...it’s at the point where it is such a political process, it doesn’t really matter, because politically, they are going to do what they want to do when they get all the information from us [health officials].

- It [institutionalizing health strategies] seems like a no-brainer, but sometimes it is hard to convince the decision makers who engage that if there is no hard evidence, so, that why we engage the planners. Once you’ve engaged the planners, they are the ones who are doing the direct planning, so if you can
motivate and educate them, we have had a few workshops where we’ve invited planners, one for health and how planners can influence the built environment from physical activity standpoint, and one for the food environment, so we could start engaging them in that conversation. When you get to the elected officials level, they like the research, but hopefully by the time you get to that point, you have so much buy in from these other organizations, that it’s easy to make your case, especially if you are educating the elected officials along the way.

As more political leaders are jumping on the “health” bandwagon (for example, many interview respondents cited the initial interest from such leaders in recent times to be more food centered, such as increasing food access through community gardens and farmers markets), such cities are making the vague notion of increasing community health as part of an improved quality of life campaign. Such initiatives are often marketed in universal terms in order to appeal to a broad audience. The presence of political will supporting health strategies from the “top” may encourage departments to break down the traditional silos of government and work together on a more regular basis.

**Collaborative Leadership**

Interview respondents identified the initial goal of forging collaborative relationships with city planners in order to educate decision makers within city government as to the role of physical health as a chronic disease prevention strategy
and as a mechanism to grow programs at the governmental and municipal level.

Interview respondents frequently identified the need to break down departmental silos and the importance of consistent cross-department collaboration. The most common methods for doing so included: creating commission or taskforces within the planning department that included health officials; health official run workshops to educate planners and other departments-essentially creating a common language and establishing working relationships; and targeting relationships with individuals that can affect policy change and environmental systems change.

- **Well, it didn’t happen overnight. When you talk to planners, eventually they get the instinctive relationship between public health and planning, but quite frankly, unless you fund the advocates to keep showing up at all the meetings, and develop policy alternatives, synthesize the research, and put that in a clear way, nothing is ever going to change. So, if it's all done on a sporadic, purely voluntary basis, then, agencies are going to continue making decisions the way they've always made them, so, from my perspective, providing a cohort of amnesty organizations with the resources or the staff time to be able to participate in the policy process has been critical.**

- **[T]wo years ago this community was very ‘siloed’ in its approaches, so there were no partnerships or collaborations, people kind of did their own thing and were trying to tackle the problem independently. You had city planners interested in health and were maybe touching on health, maybe or maybe not intentionally, the same could be said for people in the hospital system, in how**
they were addressing obesity, in terms of how they were addressing obesity, it was very ‘siloed’. What has happened with the grant and the subsequent action plan is that people came together and we identified county-wide goals and infrastructure in order to achieve those goals. So, the readiness is increasing the more we are reaching out and cross-collaborating the more people become interested, especially the more success we have, people are more willing to jump in because they know their time will matter.

Involving planners and city officials in a non-threatening way, through the use of a familiar tool such as a Comprehensive Plan revision is an easy way to gain the support of planners, who more regularly work with the decision makers such as city council.

**Strategy Tools**

Planners are more likely to be involved in the institutionalization of health and wellness strategies into city policies through the use and adaptation of traditional planning tools. In contrast, health officials’ roles vary depending on the current evolution of health strategies in programs. Newer strategies are often characterized by specialization such as targeting specific populations, while more established strategies serve as an umbrella organization, with programmatic and implementation aspects working as branches, with an overall focus on policy institutionalization. The most common tools for policy implementation included: the revision of Comprehensive Plans with specific health aspects; the creation of
specific Master Plans (Transportation Plans, Mobility Master Plans, Neighborhood Plans, and Climate Action Plans); specific zoning codes and ordinances (Complete Streets Ordinances, Urban Agriculture Zoning, development agreements, joint use agreements); data analysis tools such as GIS mapping (coordination with public health data to coordinate census data and health disparities); and the adaptation of traditional health evaluation tools such as Health Impact Assessments (HIA) for area plans and proposed developments. The tools used to address community health through planning range from broad (Comprehensive Plans) to more narrow (HIAs for specific developments). Communities with more established strategies were more likely to have varied methods to address community health, both broad and narrow.

- *That has been a big debate, should it [referring to the Community Health Element within a Comprehensive Plan] have its own chapter, or should it be integrated into every chapter...it’s just so much easier for people to departmentalize things, so now Health and Equity are guiding principles that surround the whole process. I think we will end up seeing both inspirational guiding principles, a specific chapter, and I think we’ll see health incorporate into other elements as well.*

- *The way the zoning codes are on the books now, there are no incentives for developers to provide/ensure fresh food or a market in commercial or mixed use spaces. So the new codes provide a floor area ratio and/or height incentives, depending on what neighborhood you are in, as incentives to*
provide a fresh food market which is defined in a certain way in the codes, however much space is taken up by that market is not taken up or counted towards your maximum, so essentially your maximum buildable area. We have also specified uses for both Farmers’ Markets and Urban Agriculture within the zoning codes. So they are permitted, with some exceptions, in all residential and commercial districts.

The use of more traditional planning tools with an added health focus can be attributed to the evolution of the health strategies from a more specific, programmatic focus to a more comprehensive focus in order to institutionalize health considerations within city-wide policies. As health officials create working relationship with planners and other city departments, it may make sense logistically at this point to use traditional planning tools such as the comprehensive plan that planners, city council, and elected officials are more familiar with to address health issues through small adaptations, with room for future adaptations.

**Evaluation Methods**

Interview respondents identified the challenge in determining the success of health strategies and many highlighted the need for a reevaluation of the scope of success as population level behavioral changes can take decades to show statistical change and progression. There was a lack of uniformity in the methods of evaluations used, but most common included the identification of the number of physical changes made to the environment (i.e., increased miles of bike lanes and
sidewalks, increased number of food outlets, etc.) and analysis done using a combination of health and traditional census data to determine priority areas for changes. Health officials were more likely to mention the challenge of shifting the overall focus of city officials such as planner and council members from individual behaviors to health determinants when looking at the big picture of community health.

- I guess, one of the questions we have really mulled over is how can we measure success if we are trying to address community health issues throughout an entire community, and that takes decades, and what is an appropriate measurement? We don’t necessarily have that answer, but what we do, is count the physical and environmental changes that we can point to so we can show we are moving in the right direction. So, we can point to how many miles of bike lanes we’ve created, how many streets are complete, how many farmers markets we have, what our school food service program is offering-the amount of interventions we have in place.

The lack of uniform evaluations and the varying ways to measure success can be attributed to the evolving process of the institutionalization of community health strategies. The long term effects of such changes will take years to provide quantifiable data at the population level, a fact that can prove to be a barrier to implementation measures and funding in general. Health officials were more likely to draw a comparison to anti-tobacco campaigns, while many planners compared it the amount of time it has taken the nation to develop such land use patterns. Either
way both parties identified the need for time in order to measure the effectiveness of built environmental change on community health.

**Sustainability: Structure**

Established health strategies at the institutional level can be characterized by inter-governmental coordination among departments, the most common being between city planning departments, transportation departments, and local health departments on a broad scale. On a more programmatic or project-specific scale, the parks and recreation department and public works are prevalent. For more specific projects, such as revising a Comprehensive Plan or revising an ordinance through the creation of Complete Streets Policy, stakeholders from a variety of governmental and non-governmental (NGO) and community-based organizations are often involved. In particular, both health officials and planners cited the need for collaboration amongst various departments and the challenge of breaking down traditional departmental silos:

- **The truth is that there are a lot of constraints for this type of work, health and the effects of environmental changes are hard to quantify, but it is common sense that the underlying issues is important and needs to be addressed in a new way, what health practitioners have been doing, on their own, is not working. Not that changing the built environment is the magic bullet, because there isn’t one, but it will take a joint effort, from a variety of fields, in order to change behaviors and therefore obesity and health.**
One of the biggest ones [challenges] is getting people to work internally. So, if they have to look at a development of a bike/ped plan, a Complete Streets Ordinance, a Healthy Food Access Plan—they have to work across departments. Parks works with parks, planners work with planners, and no one talks to the public works department unless they have to, and this approach really requires that they have a team where everyone is represented.

There has been overwhelming evidence in the health realm that links the built environment to health determinants. Although causation is challenging to quantify, recent health statistics show that programmatic and educational health components are have not been successful at the population level, and Americans are becoming more obese each year on a national level. Therefore, there is an identified need for collaboration among various departments that affect the built environment. As the fields of planning and public health evolved throughout the twentieth century, there was a need to departmentalize and to create specializations within each field in order to promote each field’s legitimacy. Such specialization created silos within local governments, and contributes to the challenge of addressing the multi-faceted problem of community health.

**Sustainability: Funding**

Funding sources for community health based initiatives, both at the programmatic and at the institutional level, have yet to reach a uniform, sustainable basis. Instead, cities and programs are competing against each other for a limited supply of grant funding, most commonly through federal stimulus initiatives such as
Communities Putting Prevention to Work, and through health-based organization initiatives such as the Robert Wood Johnson Foundation’s Healthy Kids Healthy Communities. A few, more established initiatives with significant political support are beginning to see partial matching through city general funds, but this is rare. On an institutional level, funding is more commonly directed towards the planning of community health initiatives, focusing on the establishment of such strategies at the policy level, as well as forming essential relationships among planners and health officials. On the programmatic level, funding is more commonly used for the actual implementation of program goals and initiatives, but these are more likely to be limited in scope and partnerships. Respondents cited concerns for the sustainability of health strategies based on a lack of consistent funding.

- **I see a need for funding on two levels, one is funding for what we do, so really funding the community advocacy to include health principles, the more problematic aspect is the actual public funding to implement the infrastructure that the policies call for. You know, what could happen, is that we arrive at the most wonderful, healthy, Comprehensive Plan possible, but then city could say we have no funding to build the needed infrastructure, the sidewalks, bike lanes, and parks, so the policy just sits on the shelf. So that to me, is the more problematic piece on the funding front.**

- **Sustainability in funding is an issue. I think it’s alot about, when you are trying to change people’s policies [and] practices, it’s hard to get their attention, it’s not that they don’t care, but all of these stakeholders exist to do something else,**
so it’s hard to get them focused enough to get them to make the changes. So, it’s so much slower than you would want.

The response to such funding limitations varied by interviewee classification: city planner or health official. Although there is a uniform concern with the lack of institutionalization of such strategies and therefore a lack of sustainable funding, planners overall seemed more accepting of this challenge, whereas health officials expressed stronger responses. This response divide can be attributed to the cultural differences of the two fields. Traditionally, public health officials have been more focused on the implementation and maintenance of health programs. In contrast, a city planner’s primary role is to facilitate the creation of plans, and although implementation is an important aspect of such plans, enforcement can be characterized as more reactive that proactive.

The cultural divide can also be linked to the nature of each field’s relationship to elected officials. Although health officials may be affected by elected officials’ priorities in regards to overall funding of programs, the field is more removed from the whims of political officials than planners. As planners are more accustomed to the challenges that are associated with the changing structure of elected officials (i.e. mayors, city council members, etc.), they may be more accepting of the process. From plan conception to implementation, planners are well aware of the implementation challenges plans face.


**Survey Results**

The online survey analysis was divided into categories based on survey structure, including: demographic characteristics of respondents; community health and planning perceptions; health risk perceptions; jurisdictional priority of planning for health; and structural specifics regarding the presence of a health plan or health strategies.

**Response Rate**

The online survey was sent to 183 planners or communities, 87 responded, providing a survey response rate of 47.5 percent. Twenty-one addresses bounced back, but phone contact was made with all twenty-one communities and correct addresses were obtained.

**Figure 6** illustrates the complexity of the survey response rate and why the rate threatens the validity of the research. **Figure 6** also displays the separate survey path respondent percentages within the survey. Whether or not the respondents knew if their community had a Community Health Plan or promoted health strategies determined what questions they subsequently answered. Of the 87 total respondents, nine communities skipped the questions related to health plans, leaving a total of 78 total respondents. Only seven communities acknowledged the presence of a separate health plan (eight percent) and 36 communities acknowledged that community health was being addressed through other strategies (42 percent). Thirty five communities (40 percent) acknowledged
that community health was not addressed, and nine communities (10 percent) skipped the questions. As respondents were able to skip questions within the survey, the response rate for each question varies.

Figure 6: Survey Response Rate Flow Chart
Study Limitations

The analysis of results was limited to the response rate, lack of response variability, the inability to control who answered the survey or to verify responses with another form of evidence (e.g. plan or ordinance), and the potential for respondent bias based on interest in the subject. The majority of the following relies on summary statistics that calculate the percentage of respondents for each question and how the response relates to the research question. Where appropriate, the analysis has been broken into responses based on the presence of a specific health plan (Survey Path One), health strategies (Survey Path Two), and neither health plans nor strategies (Survey Path Three).

Survey Responses

Demographics

The survey began by asking demographic questions to record which communities participated in the survey and to ascertain the position title of the respondent. Figure 7 shows the percentage of respondents per state (as defined by the number of respondents out of the total contacted per state). Overall, Tennessee had the highest response rate, with sixteen out of twenty five responses from contacted planners (64 percent), while Mississippi had the lowest response rate, with three out of twelve responses from contacted planners (25 percent). A list of the respondent state locations detailing their specific city locations can be found in Appendix D.
Figure 8 shows the percentage of respondents out of the Southeastern region (as defined by the number of respondents out of total respondents). Overall, Tennessee had the highest representation, with a response rate of 18 percent (16 out of 87), while Mississippi had the lowest representation, with a response rate of four percent (three out of 87).
Figure 8: Survey Response Rate by Region

Figure 9 displays the community populations of the respondents. The majority of those who responded were from communities with populations between 25,000 and 50,000 people (50 percent). Three percent of the communities have populations between 250,001 and 500,000 (three communities), and two percent have populations over 500,001 (two communities). These statistics also correspond with the population profiles of the contacts.
Characterizing those who did not respond to the survey reveals non-response bias. **Figure 10** shows the percentage of non-respondents per state (as defined by the number of respondents out of the total contacted per state). Overall, Mississippi had the highest non-response rate, with nine out of twelve contacted planners as non-respondents (75 percent), while Tennessee had the lowest non-response rate, with nine out of twenty-five contacted planners as non-respondents (36 percent).
Figure 10: Survey Non-respondent Rate by State

Figure 11 shows the percentage of respondents out of the Southeastern region (as defined by the number of respondents out of total respondents). Overall, North Carolina had the highest representation, with a non-response rate of 19 percent (18 out of 96). As the North Carolina had the highest number of planner contacts (32), it is logical that this state would have the highest potential for non-respondents. The remaining states also correspond to the state contact percentages for the survey.
Figure 11: Survey Non-respondent Rate by Region

Figure 12 shows the community populations of planners who did not respond to the survey. As with the regional characterization, the non-respondent community populations also correspond with the contact populations. The majority of non-respondents live in cities with populations between 25,000 and 50,000 (58 percent). The communities within this population range not only corresponded with the contact percentages for the survey, but also could be due to smaller staffs and increased job responsibilities.
The next question asked respondents to identify their health-related planning interests. The answer options were kept mostly neutral and within the traditional scope of planning, with exception of *Active Living, Food Systems* and *Health Impact Assessments*. The purpose of this question was to get the respondents to begin thinking about the various methods one can address planning for health and to identify if there was an interest in the more health-oriented options. The breakdown of choices can be found in Figure 13. Overall, respondents identified with the more traditional planning topics such as *Transportation, Parks and Recreation*, and *Urban Design*. Respondents with a health plan had a higher
response rate to each of the health oriented topics: Active Living (86 percent), Food Systems (43 percent) and Health Impact Assessments (57 percent).

![Health and Planning Related Interests](image)

**Figure 13: Health and Planning Related Interests**

**Community Health and Planning Perceptions**

The next section examined the respondent’s perception of the role planners play in community health, specifically addressing the influence of the built environment on population health. The purpose of this section was to examine to what extent respondents felt they had an impact on the built environment and subsequently how the built environment affects population health. Answers were categorized based on a quantifiable scale, as seen in **Figure 14**.
In the first question, respondents were asked whether or not they agreed with the statement that the way that cities, suburbs and towns are designed impact population health. This question was intended to determine whether or not the respondents had a basic understanding of the built environment’s influence on population health. Approximately 71 percent of respondents from communities with a health plan strongly agreed with the statement and 64 percent of respondents from communities with health strategies strongly agreed with the statement. In comparison, 51 percent of respondents from communities without identified health plans or strategies agreed with the statement. Overall, although the majority of the respondents strongly agreed or agreed with the statements, respondents from communities without identified health plan or strategies were less likely to answer in the agree strongly category and had the only disagree responses. This may be due to the lack of education and awareness of the respondents concerning the subject, as there were no health plans or strategies in those communities.
The next question then addressed whether or not the respondents felt that the built environment was within the scope of planning’s influence. The purpose of this question was to determine whether or not respondents felt that the built environment was within a planner’s power to effect. The breakdown of responses can be seen in Figure 15. Approximately 57 percent of respondents from communities with a health plan strongly agreed that planners have a significant role in shaping the built environment, approximately 46 percent of respondents from a community with health strategies both strongly agreed and agreed, and approximately 46 percent of respondents from a community without a health plan or strategies agreed with the statement. At approximately 6 percent, respondents
from a community without a health plan or strategy were more likely to disagree with the statement. Overall, the majority of respondents felt that planners play a significant role in shaping the built environment.

![Planners play a significant role in shaping the built environment.](image)

**Figure 15: Planner’s Role in Shaping the Built Environment**

The next question addressed the significance of collaboration in successfully creating community health strategies. Based on the interview analysis, collaboration between planners, public health officials, and other actors plays an essential role in planning for health. The breakdown of responses can be seen in **Figure 16.** Approximately 71 percent of respondents from communities with a health plan strongly agreed that collaboration is imperative to creating successful community health strategies, while approximately 50 percent of respondents from a community with health strategies agreed and 46 percent of respondents from
communities without a health plan agreed with the statement. Overall, the majority of respondents agreed with the statement. Although the statistical difference between respondents is slight, communities with health plans and strategies are more likely to identify the importance of collaboration in creating such plans. This can be attributed to their experience in creating such plans.

The final question in the section examined the connection between individual behavioral choices and the built environment. As health strategies to address chronic disease such as obesity have historically targeted individual behavioral intervention without population level success, the purpose of this question was to determine the respondents’ perception as to the influence of macro and community

Figure 16: Collaboration

- Agreement on the importance of collaboration amongst city government, planners, and health organizations in creating successful strategies to affect community health.
levels factors of influence that are more likely to fall within the scope of planning. The breakdown of responses can be seen in Figure 17. Approximately 43 percent of respondents from communities with a health plan both strongly agreed and agreed that the way that cities, suburbs, and towns are designed and built impact individual behavioral choices, while approximately 47 percent of respondents from a community with health strategies agreed and 51 percent of respondents from communities without a health plan agreed with the statement. Approximately 17 percent of respondents without a health plan or strategies felt neutral. As the majority of respondents agreed with the statement regardless of the presence of health plans or strategies, this finding supports the idea that planners are knowledgeable about macro-level environmental factors influencing individual behavioral patterns and overall community health.

![Figure 17: Behavioral Choices and the Built Environment](image)

The ways that cities, suburbs, and towns are designed and built impact individual behavioral choices.
**Health Risk Perceptions**

The next section examined the respondent's perception of health risks. Questions included both the more traditional micro-level health risks associated with health such as chronic diseases and hereditary factors as well as macro-level health risks influencing behavioral patterns such as opportunities for physical activity.

The first question in the section examined the respondents' perception of the role of hereditary factors in population health risks. As health research and strategies have more extensively explored the role genetics play in chronic diseases such as obesity, such factors are more easily identified and linked to individual health. Therefore, this question assumed that respondents would be aware of such factors and identify them as high risk. The purpose of this question was to establish a base understanding of whether or not the respondents were able to identify the biological factors associated with health risks. The breakdown of responses can be seen in Figure 18. Approximately 57 percent of respondents from communities with a health plan identified biological-based factors as having a moderate risk on health, while approximately 42 percent of respondents from a community with health strategies and 49 percent of respondents from communities without a health plan or strategies identified moderate risk. Overall, the majority of the respondents identified such factors as having a moderate to high level of risk for health which supports the concept of planner awareness of more traditional health risk factors.
The next question in the section examined the respondents’ perception of the role of both perceived and real neighborhood crime and safety in population health risks. The purpose of this question was to get the respondents to begin thinking about the more obvious micro-level factors that may influence health. Research has shown that in neighborhoods with higher crime rates, residents are less likely to feel safe outside of their homes, which may discourage physical activity rate within that area (Cohen et al., 2003; Wen et al., 2003, 2006). The breakdown of responses can be seen in Figure 19. Approximately 57 percent of respondents from communities with a health plan identified neighborhood crime and safety factors as having a high risk on health, while approximately 44 percent of respondents from a community
with health strategies and 43 percent of respondents from communities without a health plan or strategies identified moderate risk. Overall, the majority of the respondents identified such factors as having a moderate to high level of risk for health, supporting the concept of planner awareness of more macro-level health determinants.

![Neighborhood crime and safety (perceived and/or real).](image)

**Figure 19: Crime and Safety**

The next question in the section examined the respondents’ perception of the role of access and proximity to recreational facilities, parks, and open space in population health risks. As research suggests that access and proximity to parks and open space influence physical activity patterns, the purpose of this question was
to determine whether or not respondents’ risk perception of more macro level factors such as access varied by the presence of a health plan or strategies (Coombes, et al., 2010 and 2009; Hillsdon, M. et al. 2006). The breakdown of responses can be seen in Figure 20. Approximately 57 percent of respondents from communities with a health plan identified access and proximity to such factors as having a high risk on health, while approximately 39 percent of respondents from a community with health strategies and 42 percent of respondents from communities without a health plan or strategies identified moderate risk. Overall, the majority of the respondents identified such factors as having a moderate to high level of risk for health, with respondents with established health plans being more likely to identify access and proximity as a high risk as compared to other respondents, potentially due to their increased familiarity with macro-level health determinants.
The next question examined the respondents’ perception of the role of access and proximity to food outlets, both healthy and unhealthy, in population health risks. As research suggests that access and proximity to food outlets influence consumption patterns, the purpose of this question was to determine whether or not respondents risk perception of more macro level factors such as food access varied by the presence of a health plan or strategies (Currie et al., 2009; White, 2007). The breakdown of responses can be seen in Figure 21.

Approximately 57 percent of respondents from communities with a health plan identified access and proximity to food outlets as having a high risk on health, while approximately 44 percent of respondents from a community with health strategies
and 40 percent of respondents from communities without a health plan or strategies identified moderate risk. Overall, the majority of the respondents identified such factors as having a moderate to high level of risk for health, with respondents with established health plans being more likely to identify access and proximity as a high risk as compared to other respondents, potentially due to their increased familiarity with macro-level health determinants.

![Access/proximity to food outlets.](image)

**Figure 21: Access and Proximity to Food Outlets**

The next question in the section examined the respondents' perception of the role of vehicular traffic congestion, in population health risks. As research suggests that increased vehicular traffic congestion decreases air quality which is linked with
respiratory illness, the purpose of this question was to determine whether or not respondents risk perception of more macro level factors varied by the presence of a health plan or strategies (Janice et al., 2004; Brauer, 2002). The breakdown of responses can be seen in Figure 22. Approximately 54 percent of respondents from communities with a health plan identified vehicular traffic congestion as having a moderate risk on health, while approximately 44 percent of respondents from a community with health strategies and 43 percent of respondents from communities without a health plan or strategies identified moderate risk. Overall, the majority of the respondents identified as having a moderate to high level of risk for health, with respondents with established health plans and strategies being similarly likely to identify with moderate risk as compared to other respondents, potentially due to their increased familiarity with macro-level health determinants.
The next question in the section examined the respondents’ perception of the role of opportunities for active transportation, in population health risks. As research suggests that individuals who report using active forms of transportation such as walking and biking, are more likely to be physically active, the purpose of this question was to determine whether or not respondents risk perception of more macro level factors such as active transportation opportunities varied by the presence of a health plan or strategies (Ewing et al., 2008; Garden, et al., 2004). The breakdown of responses can be seen in Figure 23. Approximately 85 percent of respondents from communities with a health plan identified the lack of active
transportation opportunities as having a high risk on health, while approximately 42 percent of respondents from a community with health strategies and 49 percent of respondents from communities without a health plan or strategies identified moderate risk. Overall, the majority of the respondents identified as having a moderate to high level of risk for health, with respondents with established health plans being more likely to identify as high risk as compared to other respondents, potentially due to their increased familiarity with macro-level health determinants.

**Figure 23: Active Transportation Opportunities**

The next question in the section examined the respondents’ perception of the role of media promotion, particularly the promotion of unhealthy consumption choices, in population health risks. As research suggests that individuals,
particularly children who are developing consumption patterns and are less likely to be able to differentiate between an advertisement and a television program or movie, are more likely to choose a food based on brand identification, the purpose of this question was to determine whether or not respondents risk perception of more macro level factors such as the media, varied by the presence of a health plan or strategies (Committee on Communications, 1995; Liebert, 1988). The breakdown of responses can be seen in Figure 24. Approximately 43 percent of respondents from communities with a health plan identified the advertisements of unhealthy consumption choices as having both low and moderate risk on health, while approximately 46 percent of both respondents from a community with health strategies and communities without a health plan or strategies identified moderate risk. Although responses varied, the majority of respondents identified media factors as having a low and moderate risk on health, with respondents from communities without health plans or strategies interestingly having the highest identification of high risk, at 23 percent. As such factors fall into the more extreme side of macro level health behavioral determinants, planners may be less familiar with such factors or less likely to identify with such factors.
The next question in the section examined the respondents’ perception of the role of current land use trends in population health risks. As research suggests that post 1950's national development expansion and zoning trends have lead to a separation of land uses and an increased automobile dependency, decreasing opportunities for active transportation and therefore physical activity, the purpose of this question was to determine whether or not respondents risk perception of macro level factors varied by the presence of a health plan or strategies (Ewing et al., 2008). The breakdown of responses can be seen in Figure 25. Approximately 71 percent of respondents from communities with a health plan and 40 percent of
respondents from communities with health strategies identified current land use trends as having a high risk on population health, while approximately 44 percent of communities without a health plan or strategies identified moderate risk. Overall, the majority of respondents identified current land use trends as having a moderate to high risk on health, with respondents from communities with health plans being more likely to identify high risk, potentially due to their increased familiarity with macro-level health determinants.

![Figure 25: Current Land Use Trends](image)

The next question in the section examined the respondents' perception of the role of chronic disease in population health risks. As health research clearly
associates the presence of chronic diseases to population health, the purpose of this question was to determine whether or not respondents risk perception more traditional, or biological and micro level factors varied by the presence of a health plan or strategy and the overall basic health knowledge of the respondents (Mayer, 1965 and 1953). The breakdown of responses can be seen in **Figure 26**. Approximately 71 percent of respondents from communities with a health plan, 72 percent of respondents from a community with health strategies, and 74 percent of respondents from communities without a health plan or strategy identified chronic disease as a high risk to population health. Overall, the majority of respondents identified chronic disease as having a *High risk* on health, supporting the concept of planner familiarity with more micro-level or individual health determinants.

![Figure 26: Chronic Disease](image-url)
Jurisdictional Priority of Planning for Health

The next section examined the health priorities of respondent's jurisdiction. Questions included direct questions regarding the overall importance of community opportunities for health as well as more indirect questions regarding the relationship between planning and opportunities for health. The purpose of such questions was to determine if there would be a difference in responses based on the presence of a health plan as well as examining the potential for response difference based on more specific language as compared to more general or “quality of life” language. Based on the interview analysis, respondents are more likely to recognize quality of life questions, such as resident physical activity, as an important issue, and less likely to recognize the more specific role of planning in increasing health opportunities for residents, particularly in communities without health plans and strategies.

The first question examined the jurisdictional perception regarding the importance of residential physical activity. As health research has linked the lack of physical activity with various health effects such as an increased prevalence of chronic diseases, the opportunity for physical activity is important when considering population health (Currie et al., 2009; White, 2007). The consideration of physical activity has historically not been within the realm of planning; therefore, the purpose of this question was to determine whether or not jurisdictional value of such factors varied by the presence of a health plan or strategies. Based on the interviews analysis, the question wording was purposefully broad in order to
encourage the respondents to link the term physical activity to a broader concept of community health. The breakdown of responses can be seen in Figure 27. Approximately 86 percent of respondents from communities with a health plan and 50 percent of respondents from a community with health strategies identified residential physical activity as a Very important issue, while approximately 46 percent of respondents from communities without a health plan or strategies identified it as a Marginally important issue. Overall, the majority of the respondents identified the physical activity of residents as a Marginally and Very important issue, with respondents from communities with established health plans being more likely to identify with Very important issue, supporting the concept of overall planner familiarity with environmental health determinants.

Figure 27: Residential Physical Activity
The next question examined the jurisdictional perception regarding the importance of residential access to healthy food. As health research has linked the lack of full service food outlets to health inequities such as a greater prevalence of Type 2 Diabetes, the opportunity for healthy food consumption is important when considering population health (White, 2007). The consideration of food access has historically not been within the realm of planning, therefore, the purpose of this question was to determine whether or not jurisdictional value of such factors varied by the presence of a health plan or strategies. Based on the interviews analysis, the question wording was purposefully broad in order for the respondents to link the term *healthy food access* to a broader concept of community health. The breakdown of responses can be seen in Figure 28. Approximately 43 percent of respondents from communities with a health plan identified residential access to healthy food as both a *Very important issue* and a *Marginally important issue* while approximately 57 percent of respondents from a community with health strategies and 60 percent of respondents from communities without a health plan or strategies identified it as a *Marginally important issue*.

Overall, the majority of the respondents identified food access as a *Marginally important issue*, with respondents from communities without established health plans or strategies being more likely to identify with *Not an important issue* at 29 percent, than any other respondent group. As the concept of food access is a more recent subject within the planning field, planners may be less likely to identify with this health determinant due to lack of familiarity and education.
The next question examined the jurisdictional perception regarding the importance of the relationship between planning and the ability of residents to healthy food. More recent planning and health literature has documented the role of planning departments in creatively addressing the challenges associated with the absence or lack of healthy food outlets such as full service grocery stores: from urban agricultural zoning provisions to “Healthy Corner Store Initiatives” (Pothukuchi et al., 1999 and 2000). The purpose of this question was to determine whether or not jurisdictions were able to identify the link between planning and food access conditions and if such factors varied by the presence of a health plan or strategies. The breakdown of responses can be seen in Figure 29. Approximately...
71 percent of respondents from communities with a health plan identified the relationship between community planning and residential access to healthy food as a Very important issue, while 53 percent of respondents from a community with health strategies identified it as a Marginally important issue, and 49 percent of respondents from communities without a health plan or strategies identified it as Not an important issue. As food access research has only recently fallen within the planning realm, the response variability may be based on the respondent familiarity with the subject, with communities with a health plan being more likely to have been educated on or exposed to the topic.

Figure 29: Planning and Healthy Food Access
The next question examined the jurisdictional perception regarding the importance of the relationship between planning and the ability of residents to be physically active. The purpose of this question was to determine whether or not jurisdictions were able to identify the link between planning and opportunities for physical activity, and if such factors varied by the presence of a health plan or strategies. The breakdown of responses can be seen in Figure 30. Approximately 86 percent of respondents from communities with a health plan identified the relationship between community planning and residential physical activity as a Very important issue, while 42 percent of respondents from a community with health strategies identified as both a Very important issue and a Marginally important issue, and 46 percent of respondents from communities without a health plan or strategies identified it as a Very important issue. As physical activity research has been a focus of the planning realm throughout the past decade, it is a concept that may be more familiar to respondents, regardless of the presence of a health plan or strategies.
Figure 30: Planning and Physical Activity

The next question examined the jurisdictional perception regarding the barriers to planning for health. The breakdown of responses can be seen in Figure 31. Approximately 67 percent of respondents from communities with a health plan and 39 percent of respondents from communities with health strategies identified Are an assumed, not a stated goal as a significant barrier. This corresponds with interview analysis, as health officials and health planners in communities with established planning for health methods described frustration with the lack of specificity in language used by government officials and city planners. Approximately, 47 percent of respondents from communities without health planning identified Not regarded as a planning issue as a barrier to planning for
health. As such communities are not actively planning for health, this issue may not fall within their awareness or interest.

Figure 31: Identified Barriers

The final question assessed the extent of collaboration between respondents and other departments and agencies. Based on interview analysis, jurisdictions with more established methods for health planning were more likely to involve planners, public health officials, and community based organizations. The breakdown of responses can be seen in Figure 32. Approximately 86 percent of responses from communities with a health plan identified collaborating with the Public Health Department within the past five years, in comparison to 47 percent of
respondents from a community with health strategies and 31 percent identified respondents from communities with neither. The responses do not correspond with recent research by the American Planning Association’s (APA) Planning and Community Health Research Center, which identified Public Health Agencies as “not involved or having little involvement in the development of public health components for both comprehensive plans and sustainability plans” (Hodgson et al., 2011).

Figure 32: Collaboration

As collaboration was a unifying theme throughout both methods of analysis, a Chi-Square test was conducted in order to ascertain if there is significant
relationship between the variables (Healey, 2009, pp.260-273). The dependent variable was the presence or absence of a health plan or strategy, while the independent variable was the presence of collaboration between planners and public health officials. The null hypothesis (Ho) assumed there was no difference between the presence of a health plan and or health strategy and collaboration among planners and public health officials. The research hypothesis (H1) assumed that the presence of a health plan and or health strategy was affected by the presence of collaboration among planners and public health officials.

The degrees of freedom (df) are equal to the number of categories minus one \([df=(r-1)(c-1)]\), therefore two. The sampling distribution or \(X^2\) critical with an Alpha of .05 is 5.991. As seen in Tables 5-7, the test statistic or \(X^2\) obtained is 7.355896, which falls in the critical region, therefore the null hypothesis is rejected. The observed frequencies are statistically different from the expected frequencies, therefore, there is not independent of the presence of collaboration between planners and public health officials.

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Table 5: Chi Square Raw Data
# Expected Frequencies

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Table 6: Chi Square Expected Frequencies

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<td>18.1476</td>
<td>1.189226737</td>
</tr>
<tr>
<td>24</td>
<td>19.74</td>
<td>4.26</td>
<td>18.1476</td>
<td>0.919331307</td>
</tr>
<tr>
<td>78</td>
<td>78</td>
<td>0</td>
<td>0</td>
<td>7.355895833</td>
</tr>
</tbody>
</table>

Table 7: Chi Square Computation

Path Qualifier Questions

The next question was the first qualifier question to determine whether or not the respondent would continue along: Path One with specific questions aimed towards a community with a separate plan that addresses health; Path Two, with specific questions aimed towards a community with specific health strategies, but not necessarily a separate plan; or Path Three where the survey would be concluded as the respondent identified a no health plan or strategies to address health. The breakdown of responses can be seen in Figure 33. Approximately eight percent of
respondents (seven communities) identified having a specific health plan, while 92 percent of respondents did not identify having a specific health plan (80 communities). Those eight percent of respondents went onto Path One, while 92 percent of respondents went on to the second qualifier question.

![Figure 33: Qualifier One](image)

The second qualifier question was to determine whether or not the respondent would continue along: Path Two, with specific questions aimed towards a community with specific health strategies, but not necessarily a separate plan; or Path Three, where the survey would be concluded because the respondent identified as no health plan or strategies to address health. The breakdown of responses can
be seen in Figure 34. Approximately 42 percent of the total respondents (36 communities) identified addressing health through other methods, while 40 percent of respondents did not identify addressing health through other methods (35 communities). Ten percent of respondents (nine communities) skipped the question. Those 42 percent went on to questions within Path Two while the remaining respondents’ survey was complete.

![Figure 34: Qualifier Two](image)

Path One: Jurisdictions with a specific health plan.

Path One consisted of three questions differing from Path Two. The total number of respondents for path one was seven. Based on the interview analysis, Path One examined the structure of jurisdictions’ health plans, as well as the amount
of collaboration between departments. The purpose of such questions was to examine the types of plans implemented, the types of collaboration necessary for the creation of such plans, as well as how active the respondents were in promoting the health plans.

The first question identified which specific plans contain explicit health themes as related to healthy eating and active living. The purpose of this question was to examine what health promotional plans are already in place and to what extent plans are being adapted to include health concepts. The breakdown of responses can be seen in Figure 35. Approximately 63 percent of respondents identified the Bicycle Master Plan as the vehicle for addressing community health, followed by 38 percent of respondents identifying specific elements within the Comprehensive Plan, Parks and Recreation Master Plan, and Transportation Plans.

The inclusion of provisions for active living and physical activity within transportation plans, transportation elements within comprehensive plans, and recreation master plans seems to be the most common implementation method. Conceptually, including physical activity within the realm of transportation and recreation may be the easiest transition. As physical activity research has been a focus of the planning realm throughout the past decade, it is a concept that may be more familiar to respondents. The responses also correspond with recent research by APA, which identified public health topics were most likely to be addressed in the land use, transportation, recreation and open space, or bicycle and pedestrian elements of the comprehensive plan (Hodgson et al., 2011).
The next question examined the structure of the health plan. The purpose of this question was to identify the level of sustainability within the jurisdiction’s health promotion plan, with the more sustainable plans more likely to be funded and staffed internally. The breakdown of responses can be seen in Figure 36. Approximately 71 percent of respondents identified their jurisdictional health plans as advocacy based, followed by 57 percent identifying grants as funding sources and collaborative staffing through outside agencies. Approximately 43 percent of respondents identified their health promotion plans as being supported by internal staff and 29 percent identified internal resources as funding sources. As health plans are an evolving process within the planning field, advocacy based programs
are often grant funded and staffed outside of the planning department, while policy based programs are more likely to have at least partial internal funding and staffing in order to institutionalize the process.

The next question examined the role respondents played in supporting community health plans and strategies. The purpose of this question was to gauge whether or not the respondents were playing an active or passive role in the creation, implementation, and promotion of health plans and strategies. The breakdown of responses can be seen in Figure 37. Approximately 89 percent of
respondents identified promoting collaboration among key agencies. In comparison, approximately 33 percent of respondents helped to establish programs that address community health. Overall, respondents are more likely to play a passive role than an active role. The responses correspond to the interview analysis, where health officials were more likely than planners to initiate and promote the inclusion of health strategies into plans in the early stages of development.

Figure 37: Respondent Role (N=7)
Paths One and Two: Health Strategy Comparisons

Path Two consisted of eight potential questions that both Path One and Path Two respondents addressed. A total of 43 respondents answered these questions. Similar to Path One questions, the Path Two question construction was based on interview analysis, examining the structure of jurisdiction’s health strategies, funding, department collaboration, evaluations, and targeted population subsets. Results from both paths are displayed throughout the next section.

The first question examined specific health measures implemented within the respondent’s jurisdiction. As this question listed 24 answer options including and open ended space, the purpose of this question was to give respondents a comprehensive list of possible health strategies and determine if respondents were implementing more programmatic of policy-based strategies. The breakdown of responses can be seen in Table 8.
Indicate specific measures your jurisdiction has implemented supporting healthy eating and active living. (check all that apply)

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>Path One</th>
<th>Path Two</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete Streets Policy/Ordinance</td>
<td>71.4%</td>
<td>40.0%</td>
</tr>
<tr>
<td>Walkability Audit</td>
<td>71.4%</td>
<td>34.3%</td>
</tr>
<tr>
<td>Open space/parks minimum requirements</td>
<td>57.1%</td>
<td>54.3%</td>
</tr>
<tr>
<td>Development regulations/zoning that discourage sprawl</td>
<td>85.7%</td>
<td>34.3%</td>
</tr>
<tr>
<td>Development regulations/zoning that encourage mixed use, transit-oriented development, and/or traditional neighborhood developments</td>
<td>100.0%</td>
<td>62.9%</td>
</tr>
<tr>
<td>Joint use agreements to provide recreational opportunities</td>
<td>57.1%</td>
<td>28.6%</td>
</tr>
<tr>
<td>Sidewalk requirements for all new developments</td>
<td>71.4%</td>
<td>71.4%</td>
</tr>
<tr>
<td>School siting revisions to increase proximity, connectivity, and/or walkability</td>
<td>14.3%</td>
<td>22.9%</td>
</tr>
<tr>
<td>Safe Routes to School implementation</td>
<td>28.6%</td>
<td>77.1%</td>
</tr>
<tr>
<td>Community Food Assessment</td>
<td>14.3%</td>
<td>5.7%</td>
</tr>
<tr>
<td>Food Access Analysis</td>
<td>14.3%</td>
<td>5.7%</td>
</tr>
<tr>
<td>Food Policy Council</td>
<td>0.0%</td>
<td>5.7%</td>
</tr>
<tr>
<td>Farm to School Program</td>
<td>14.3%</td>
<td>2.9%</td>
</tr>
<tr>
<td>Healthy Vending Ordinance</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Urban Agriculture Zoning</td>
<td>0.0%</td>
<td>5.7%</td>
</tr>
<tr>
<td>Community Garden Programs</td>
<td>42.9%</td>
<td>48.6%</td>
</tr>
<tr>
<td>Healthy Corner Store Initiative</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Soda Tax</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Health-specific Zoning Restrictions (i.e. bans on drive thru’s, restrictions on fast-food outlets within certain square mileage of schools/parks, etc.)</td>
<td>0.0%</td>
<td>2.9%</td>
</tr>
<tr>
<td>Farmers’ Markets</td>
<td>85.7%</td>
<td>71.4%</td>
</tr>
<tr>
<td>EBT at Farmers’ Markets</td>
<td>57.1%</td>
<td>14.3%</td>
</tr>
<tr>
<td>Require restaurants to display nutritional index</td>
<td>28.6%</td>
<td>5.7%</td>
</tr>
<tr>
<td>Promote healthy roadside vending</td>
<td>0.0%</td>
<td>14.3%</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>0.0%</td>
<td>17.1%</td>
</tr>
</tbody>
</table>

Table 8: Health Strategies (N=42)

The strategies listed were then broken down into five categories based on the concept of a health planning evolutionary model, with more basic health planning
strategies having more programmatic characteristics and more advanced health planning strategies having more institutional and policy characteristics. The five identified categories in order of increasing complexity are: Programmatic; Assessments; Collaboration; Zoning and Ordinances; and Policies (Table 9).

<table>
<thead>
<tr>
<th>Planning for Health Identified Strategies: Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Programmatic</td>
</tr>
<tr>
<td>Safe Routes to School</td>
</tr>
<tr>
<td>Farm to School Programs</td>
</tr>
<tr>
<td>Community Garden Programs</td>
</tr>
<tr>
<td>Farmers’ Markets</td>
</tr>
<tr>
<td>Promotion of Healthy Roadside Vending</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

Table 9: Health Strategy Categories
The results of the statistical summary analysis of respondents based on the categorization of implemented health strategies can be seen in Table 10 as broken down by Path 1 and Path 2. The basic statistics support the concept of an evolutionary model in health planning, with Path 1 respondents having higher percentages in all categories, with the exception of the Programmatic category. It was hypothesized that as Path 1 respondents were able to identify a separate health plan within their community, their strategies would be less programmatic focused and more advanced institutionally. In contrast, as Path 2 respondents identified with various health strategies, it was hypothesized that their strategies would be more programmatic in scope.

<table>
<thead>
<tr>
<th>Category</th>
<th>1 (N=7)</th>
<th>2 (N=35)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Programmatic</td>
<td>34.28%</td>
<td>42.85%</td>
</tr>
<tr>
<td>Assessments</td>
<td>28.57%</td>
<td>15.24%</td>
</tr>
<tr>
<td>Collaboration</td>
<td>35.71%</td>
<td>17.14%</td>
</tr>
<tr>
<td>Zoning/Ordinances</td>
<td>57.14%</td>
<td>38.78%</td>
</tr>
<tr>
<td>Policies</td>
<td>7.14%</td>
<td>1.43%</td>
</tr>
</tbody>
</table>

**Table 10: Health Strategy Category Summary Statistics**

As planning for health evolution was a unifying theme throughout both methods of analysis, a Chi-Square test was conducted in order to ascertain if there is significant relationship between the variables (Healey, 2009, pp.260-273). The dependent variable was the type of strategy category, while the independent variable was the identification of a separate health plan (Path 1) or health strategies (Path 2). The null hypothesis (Ho) assumed there was no difference between the
type of strategy and the identification of a health plan or strategy. The research hypothesis \( (H_1) \) assumed that the type of health strategy was affected by the identification of a health plan versus health strategies.

The degrees of freedom \( (df) \) are equal to the number of categories minus one \([df=(r-1)(c-1)]\), therefore four. The sampling distribution or \( X^2 \) critical with an Alpha of .05 is 9.488. As seen in Tables 11-13, the test statistic or \( X^2 \) obtained is 6.232273 which does not fall in the critical region, therefore the null hypothesis is accepted. The observed frequencies are not statistically different from the expected frequencies and the types of strategies implemented are probably independent on the identification of a health plan or a health strategy.

<table>
<thead>
<tr>
<th>Planning for Health Identified Strategies (Raw Data)</th>
<th>Strategy Type</th>
<th>Independent Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Plan Identification</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Path 1</td>
</tr>
<tr>
<td>Dependent Variables</td>
<td>Programmatic</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Assessments</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Collaboration</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Zoning/Ordinances</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>Policies</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Subtotals</td>
<td>53</td>
</tr>
</tbody>
</table>

Table 11: Chi Square Raw Data
### Expected Frequencies

<table>
<thead>
<tr>
<th>Strategy Type</th>
<th>Plan Identification</th>
<th>Path 1</th>
<th>Path 2</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Programmatic</td>
<td></td>
<td>18.2253</td>
<td>68.774704</td>
<td>87</td>
</tr>
<tr>
<td>Assessments</td>
<td></td>
<td>4.6087</td>
<td>17.391304</td>
<td>22</td>
</tr>
<tr>
<td>Collaboration</td>
<td></td>
<td>3.56126</td>
<td>13.438735</td>
<td>17</td>
</tr>
<tr>
<td>Zoning/Ordinances</td>
<td></td>
<td>25.7668</td>
<td>97.233202</td>
<td>123</td>
</tr>
<tr>
<td>Policies</td>
<td></td>
<td>0.83794</td>
<td>3.162053</td>
<td>4</td>
</tr>
<tr>
<td>Subtotals</td>
<td></td>
<td>53</td>
<td>200</td>
<td>253</td>
</tr>
</tbody>
</table>

**Table 12: Chi Square Expected Frequencies**

<table>
<thead>
<tr>
<th>Strategy Type</th>
<th>N</th>
<th>fo</th>
<th>fe</th>
<th>fo-fe</th>
<th>(fo-fe)^2</th>
<th>(fo-fe)^2/fe</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>12</td>
<td>18.23</td>
<td>-6.23</td>
<td>38.8129</td>
<td>2.1290675</td>
</tr>
<tr>
<td></td>
<td></td>
<td>75</td>
<td>68.77</td>
<td>6.23</td>
<td>38.8129</td>
<td>0.5643871</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6</td>
<td>4.61</td>
<td>1.39</td>
<td>1.9321</td>
<td>0.4191106</td>
</tr>
<tr>
<td></td>
<td></td>
<td>16</td>
<td>17.39</td>
<td>-1.39</td>
<td>1.9321</td>
<td>0.1111041</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5</td>
<td>3.56</td>
<td>1.44</td>
<td>2.0736</td>
<td>0.5824719</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12</td>
<td>13.44</td>
<td>-1.44</td>
<td>2.0736</td>
<td>0.1542857</td>
</tr>
<tr>
<td></td>
<td></td>
<td>28</td>
<td>25.77</td>
<td>2.23</td>
<td>4.9729</td>
<td>0.1929724</td>
</tr>
<tr>
<td></td>
<td></td>
<td>95</td>
<td>97.23</td>
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<td>4.9729</td>
<td>0.0511457</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>0.84</td>
<td>1.16</td>
<td>1.3456</td>
<td>1.6019048</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>3.16</td>
<td>-1.16</td>
<td>1.3456</td>
<td>0.4258228</td>
</tr>
<tr>
<td>Subtotals</td>
<td></td>
<td>253</td>
<td>253</td>
<td>0</td>
<td>n/a</td>
<td>6.232273</td>
</tr>
</tbody>
</table>

**Table 13: Chi Square Computation**

The next question identified whether or not jurisdictions had completed health strategy evaluations. The purpose of this question was to determine whether
or not jurisdictions have been creating evaluation metrics for health plans and strategies. Such evaluations provide quantifiable data that can contribute to the sustainability and expansion of community health strategies when used to gain funding and political support. The breakdown of responses can be seen in Figure 38. Approximately 86 percent of respondents from communities with a health plan and 94 percent of respondents from communities with health strategies have not completed evaluations pre- or post-implementation of health plans, strategies, and policies. The responses correspond with recent APA research, where the majority of surveyed planners indicated that they did not use any type of health data, analysis, or evaluations when incorporating health topics into comprehensive plans (Hodgson et al., 2011).

Of the respondents who identified as having completed an evaluation, funding for such evaluations came from outside agencies such as the Robert Wood Johnson Foundation, and the evaluation scope focused on the effectiveness of the strategies not by examining population health, but by identifying the number and type of policy changes and structural changes had been implemented. As population health changes are more challenging to link to specific built environment changes, and such changes take place over a long period of time, planners must necessarily execute more creative evaluation measures. Such a lack of evaluation can also be contributed to a lack of collaborative partnerships between planners and public health officials, where health officials are more likely to have knowledge and
experience with the appropriate evaluation methods such as a health impact assessment.

![Chart: Have any evaluations been done pre- or post-implementation of health strategies?](chart.png)

**Figure 38: Compared Strategy Evaluation (N=43)**

The next question identified the type of contributions granted to jurisdictions planning for health. The purpose of this question was to determine the types of funding and support given to these communities and whether or not there would be a difference in responses from communities with health plans versus communities with health strategies. The breakdown of responses can be seen in **Figure 39**. According to recent research from APA, the top two barriers identified in regards to planning for health were a lack of local government funding and lack of state funding.
government funding. This contradicts respondents from communities with health strategies, which identified Municipal/Local government as a significant financial contributor (21 responses) and in-kind contributor (11 responses). Respondents from communities with a health plan identified both Local organizations (4 responses) and the Public Health Department (4 responses) as a financial contributor and in-kind contributor (7 responses).

![Financial and In-kind Contributions](image)

**Figure 39: Financial and In-Kind Contributions (N=43)**

The next question identified whether or not the jurisdictional health plans and strategies target specific population subsets. The purpose of this question was to gauge the extent of awareness of health discrepancies among more vulnerable
populations such as children, the elderly, minorities, and economically disadvantaged. The breakdown of responses can be seen in Figure 40.

Approximately 71 percent of respondents from communities with a health plan do target specific populations, compared to 31 percent of respondents from communities with health strategies. This may be due to the evolution of health planning and communities with more established health plans having a more comprehensive scope of plans. Overall, respondents from communities with a specific health plan were more likely to target specific populations.

Figure 40: Targeted Populations (N=43)
The follow-up question for those respondents that answered yes to the previous question identified which populations were being targeted. The purpose of this question was to gauge the extent of awareness of health discrepancies among more vulnerable populations such as children, the elderly, minorities, and economically disadvantaged. The breakdown of responses can be seen in Figure 41. Approximately 80 percent of respondents from communities with a health plan do target specific geographical areas.

Figure 41: Identified Population Targets (N=43)
CONCLUSIONS

Interview

The analysis of interview themes and subthemes yielded an evolving model of planning for health. Overall, health planning can be characterized by a progression from a programmatic focus, often targeting specific geographical areas or populations (i.e. children in schools,) to an institutionalization of health policies that target entire populations (i.e. the city). Both planners and public health officials have the power to influence the governmental decision makers that create and implement policy. The transition from program focus to policy focus is critical for garnering political support, an essential factor contributing to the institutionalization of health plans and strategies.

Collaboration between planners and public health officials serves as the foundation of sustainable health planning. Collaboration between these actors functions as catalyst for data and resource sharing as well as providing the educational opportunities to overcome the cultural and language barriers between the two fields. Jurisdictions with more established health plans and strategies have moved beyond these core foundation relationships to include both internal players and external players. The internal players, including departments such as parks and recreation, engineering, and public works contribute to the institutionalization and legitimization of planning for health, while the external players such as community based organizations contribute to public education and the continuation of
programmatic aspects of planning for health. As shown in Figure 42, the more sustainable and “successful” jurisdictions that are addressing health through planning have institutionalized the involvement of all three parties.

**Figure 42: Health Strategy Collaborative Partnerships**

Source: Dr. Sarah Griffin and Jacquelyn Coats

*Survey*

The online survey analysis revealed the presence of health planning occurring throughout the Southeast, be it on a limited scale. Although planners’ perceptions of their role in planning for health as well as the risks associated with
both micro-and macro-level health determinants acknowledges the connection between planning’s ability to shape the built environment and the built environment’s affect on population health, there remains a disconnect between such acknowledgements and the comprehensive implementation of health strategies.

At this point, planners involved in health planning are likely to be establishing the foundational relationships with Health Officials (86 percent), but planners overall are more likely to foster collaboration with departments within their traditional scope of work such as Parks and Recreation (86 percent) and Transportation (100 percent) (Figure 34). The Chi Square analysis of survey respondents’ type of collaboration further supported the findings that the presence of a health plan and or health strategy is dependent on collaboration with public health officials, as the $X^2$ obtained of 7.355896, fell in the critical region of the $X^2$ critical of 5.991 with an Alpha of .05 (Tables 5-7). This data supports the inference that in order to ensure the sustainability of planning for health, planners will need to branch out of the typical governmental department silos and establish key relationships with health officials.

Although the implementation of health strategies is limited in the Southeast, there is evidence that such strategies are already falling in a pattern of evolution similar to the jurisdictions from the interviews. The types of strategies being implemented by planners from jurisdictions with specific health plans versus health strategies differ in type to an extent (Table 8). Such differences may be accounted for when considering the evolution of health planning from a program based model
to a policy-based model. Communities with a defined health plan may be more likely to pursue policy-based strategies such as zoning and development ordinances, whereas communities with health strategies may be more likely to pursue program-based strategies such as Safe Routes to School. Although at this point, higher level statistical analysis does not necessarily support such conclusions at a high confidence interval (Tables 11-13), basic summary statistics do show variations in strategies implemented (Table 10).

Finally, the challenges faced planners and health officials when integrating health strategies into plans will continue to require new and creative ways to provide quantifiable data not only demonstrating the health links to such plans, but also demonstrating the success of such programs. It is essential for planners and public health officials to collaborate and to share data and evaluation measures in order to gain the much needed funding and political support to ensure the sustainability and implementation of such measures.

**ROLES FOR PLANNERS AND PUBLIC HEALTH OFFICIALS**

There are opportunities at various stages of planning at a diversity of scales for both the public health and planning professions to participate in health planning. When considering the future of public health in planning, there is significant potential for planners to consistently address community health throughout their scope of work.
Interviews showed examples of jurisdictions that are successfully addressing community health through a variety of planning methods. Planners and health officials can play an active and collaborative role in supporting planning for health. Of the variety of identified methods, most continue to promote implementation through land use tools such as urban agricultural zoning and policy such as Comprehensive Plans that are inclusive of health. There is a need for education in both planning and public health to ensure successful collaboration. Interviews showed examples of communities where public health officials have held workshops for planners and other stakeholders in order to promote a common language, educate stakeholders regarding available resources such as funding sources, relevant data, and evaluation tools such as a health impact assessments. Such workshops are the foundations of key relationships.

Survey responses showed the need to acknowledge the relationship between built environment and community health. Although planners overwhelmingly support health in terms of quality of life, there is a disconnect between the scope of their work and community health. Planners and public health officials have the opportunity to educate stakeholders, elected officials, and the public about the relationship between community design and opportunities for health. Most concerning, there is a lack of evaluations being done in jurisdictions where planners are addressing community health. Such evaluations could serve as the necessary quantitative resource to promote health planning in other jurisdictions. Planners and public health officials should:
• Inventory local health disparities and environmental conditions for their jurisdiction;

• Revise current land use plans and patterns that do not contribute to the health of the community;

• Facilitate discussions among stakeholders and political leaders;

• Educate stakeholders, political leaders, and the public;

• Utilize traditional as well as adapted health and planning tools for the promotion of health strategies; and

• Foster collaboration among departments as well as community based organizations.

Although both interview and survey respondents mentioned the importance of targeting specific vulnerable populations, such as children, in order to support health equity, at this time the specific targeting of childhood obesity on a mass-institutional scale is rarely a stated goal. In order for health strategies that target children to move from a more programmatic level to an institutional level, the legitimization of planning for health must be acknowledged and supported. Legitimization of planning for health can then serve to advance collaborative partnerships with outside agencies that are directly involved with children on a regular basis. Schools provide a significant collaborative opportunity for planners and public health officials to affect real environmental and educational change for children. Although not traditionally within the scope of planning or public health work, targeting school policy can serve as an effective approach to address
childhood obesity. Overall, the roles of planners and public health officials are important to planning for community health. Relationships between planners and public health officials can serve as the foundation for community health promotion, providing the opportunity for improved health.

CONTRIBUTIONS

This research contributes to the professional fields of public health and planning by revealing the roles and actions each can take to foster the necessary collaboration and partnerships for health planning. It also provides an analysis of established health strategies and plans being incorporated into plans and challenges to the sustainability of such work. Analysis of established plans revealed through this research will be useful to both public health officials and planners as they strive to establish such strategies within their jurisdictions. Finally, this research contributes to the education of Southeastern planners and health officials as it identified specific challenges and successes of public health planning within this region.

LIMITATIONS AND RECOMMENDATIONS

This project should be considered a starting point for further research examining planning for community health. The scope and depth of research was limited by time and financial constraints, affecting the follow-up potential particularly with survey respondents. Additional follow-up questions to communities without health plans and strategies would have been beneficial to
understanding why those communities are not addressing community health. More
details in regards to what obstacles those communities are facing would be
beneficial to future research. The survey population could also be expanded to
include public health officials as well as planners from a county or regional level.
With more time, future research could also examine the implementation success of
health plans and strategies and the long-term population health effects. Finally,
there is a need for a centralized data source for such programs, plans, and strategies,
to serve as a resource for jurisdictions interested in health planning. Such a
resource would help to alleviate some of the initial errors and time in
implementation by identifying key stakeholders to involve, program structure,
relevant data sources, and funding sources. Currently, jurisdictions, community
organizations, and non-profits are competing for similar funding. Collaboration at a
larger, regional scale could help to pool resources as well as establish working
relationships with key stakeholders.
Appendices
Appendix A
INTERVIEW INFORMATIONAL LETTER

My name is Jacquelyn Coats and I am a graduate student in the Department of City and Regional Planning at Clemson University in Clemson, South Carolina. You are invited to take part in a research study conducted by Dr. Sarah Griffin of Clemson University and myself. You were selected because your local community is participating in a strategy that specifically addresses community health and childhood obesity. The purpose of this research is to examine the extent of local governmental involvement in strategies addressing childhood obesity, particularly examining city and urban planning staff involvement in such strategies.

If you agree to take part in this research, I will conduct a phone interview with you at the time of your choice. The interview will involve questions about childhood obesity, strategies within your community that address childhood obesity, and the role of local programs and government in such strategies. The interview should last 20 to 35 minutes. With your permission, I will audiotape the interview. Once transcribed, the audio recording will be erased. Until the time the audio recordings are erased, only Dr. Sarah Griffin and Jacquelyn Coats will have access to the recording.

I expect to conduct only one interview with you; however, follow-up questions may be needed for clarification. If so, I will contact you by email or phone, according to your preference. The follow-up interview should last 10 to 15 minutes.

There are no foreseeable risks to you from participating in this research. There is not direct benefit to you; however, I hope the research will benefit society by identifying and documenting best management practices for local governments in efforts targeting childhood obesity. There will be no costs to you other than your time involved.

We will do everything we can to protect your privacy. All of the information I obtain from you during the research will be kept confidential. I will store the tape recording and noted from the interview in a locked cabinet location accessible only to Dr. Griffin and myself. Audio recordings will be transcribed. When they are transcribed all personal identifiable information will be removed from the transcripts. Additionally, the results will be coded by broad geographical area as opposed to specific city and/or employer. Your identity will not be revealed in any publication that might result from this study.
Your participation in this research is voluntary. You are free to refuse to take part in it. If you do take part, you may refuse to answer any questions and may stop taking part in the study at any time. If you have any questions about the research, you may contact me, Jacquelyn Coats, at (770)313-0833 or Dr. Sarah Griffin at (864)656-1622. If you have any questions or concerns about your rights as a research participant, please contact the Clemson University Office of Research Compliance (ORC) at 864-656-6460 or irb@clemson.edu. If you are outside of the Upstate South Carolina area, please use the ORC’s toll-free number, 866-297-3071.

Thank you,

Jacquelyn Coats

INTERVIEW QUESTIONS

General (Used as “screener questions” for non-planners)

1. List your name, position title, department or program, community, and state (Optional depending on consent of participant).
2. Describe your career background.
3. Describe the program/work you are involved in that addresses community health?
   - How is it staffers?
   - How is it funded?
   - What is the governing/leadership structure (How are decisions made)?
   - Is it program based, advocacy based, or policy based?
4. Who are the major contributors in the current methods/programs/policies that address childhood obesity in your community (e.g. government, non-profit, education, individual)?
   - When did they become involved?
   - What has brought them to the program?
5. What aspects/components have been well received?
6. What aspects/components have been successful?
   - What defines success?
   - When did the success occur?
   - Are there any programs that have been well-received, but not successful?
7. What relationships are essential for the success of the program?
8. What relationships are essential to your work in particular?
   Any relationships not present that you feel would be essential for the program?

8. How would you characterize the public perception of childhood obesity in your community?
   - Has the perception of the issue changed?
   - What still needs to happen to inform/educate the public?

Planner Specific

1. How do you feel planning policy has contributed to the success of the program in your community?
2. What ordinances/initiatives/design features do you are currently in place to promote the program? Challenge the program or contribute to obesity?
3. Has evaluation been done examining the various contributors to obesity (proximity, connectivity, density, transportation routes, food distribution centers, underserved areas)?
   - If yes, how has this data been used?
   - Have any specific decisions been a result of the evaluation?

Future

4. Are community/city/county plans regarding methods to combat childhood obesity different than what is currently being implemented?
5. What obstacles remain for your community and how might future plans, programs, and/or policies address these obstacles?

Final

6. Is there anyone else to whom I need to speak in your community?
Appendix B
COMMUNITY HEALTH PLANNING SURVEY INFORMATIONAL LETTER

My name is Jacquelyn Coats and I am a graduate student in the Department of City and Regional Planning at Clemson University in Clemson, South Carolina. You are invited to take part in a research study that is contributing to my thesis. I have contacted you because you are a planner in a Southeastern city with a population larger than 25,000. The purpose of this survey is to collect information examining the extent of local government, specifically planning department involvement in strategies that address community health.

If you agree to take part in this research, you will complete a survey, which is linked within this email. Simply click on the link: (https://www.research.net/s/communityhealthandplanning) and you will be able to begin the survey. The survey will involve questions about the role of local government in addressing community health. The survey should last 15 to 20 minutes.

There are no foreseeable risks to you from participating in this research. There is no direct benefit to you; however, your feedback is integral to the outcome of my research and any survey participant will have access to the findings. There will be no costs to you other than your time involved.

Your anonymity will be protected and all responses will be kept confidential. Once the survey results are received, all personal identifiable information will be removed from the results. Additionally, the results will be coded by broad geographical area as opposed to specific city and/or employer. These results will be kept in a locked cabinet location accessible only to me. Your identity will not be revealed in any publication that might result from this study.

Your participation in this research is voluntary. You are free to refuse to take part in it. If you do take part, you may refuse to answer any questions and may stop taking part in the survey at any time. If you have any questions about the research, you may contact me, Jacquelyn Coats, at (770)313-0833, via email at jacoats@clemson.edu, or Dr. Barry Nocks at nocks2@clemson.edu.
COMMUNITY HEALTH PLANNING SURVEY

Section A: Demographics

1. Name
2. Community (City, County, State)
3. Position Title
4. What are your/jurisdiction’s health and planning related interests? (check all that apply)
   - Active Living
   - Food Systems
   - Parks and Recreation
   - Air quality
   - Brownfields
   - Schools (siting, Safe Routes to School, Farm to School, healthy vending, etc.)
   - Water quality
   - Climate Change
   - Environmental Justice
   - Transportation
   - Health Impact Assessment
   - Urban Design
   - Other (please specify)

Section B: Community Health and Planning Perceptions

For the following questions, 5-8, please provide answers based on your opinion in regards to planning and community health.

5. a) The ways that cities, suburbs, and towns are designed and built impact population health.
   - Agree strongly
   - Agree
   - Neutral
   - Disagree
   - Disagree Strongly
   b) If you chose agree strongly or agree, briefly describe how population health is impacted.
6. Planners play a significant role in shaping the built environment.

- Agree strongly
- Agree
- Neutral
- Disagree
- Disagree Strongly

7. Collaboration amongst city government, planners, and health organizations are key in creating successful strategies to affect community health.

- Agree strongly
- Agree
- Neutral
- Disagree
- Disagree Strongly

8. a) The ways that cities, suburbs, and towns are designed and built impact individual behavioral choices.

- Agree strongly
- Agree
- Neutral
- Disagree
- Disagree Strongly

b) If you chose agree strongly or agree, briefly describe how behavioral choice is impacted.

Section C: Potential Health Risks

For the following questions 9-17, please check your opinion for each item listed as to whether you consider it to pose “no risk to health” or a “low”, “moderate”, or “high health risk”. Check answer response E if you don’t have an opinion about the listed item.

How much of a health risk is/are:

<table>
<thead>
<tr>
<th>Question</th>
<th>Topic Item</th>
<th>No Risk</th>
<th>Low Risk</th>
<th>Moderate Risk</th>
<th>High Risk</th>
<th>Don’t know/ No opinion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Psycho-social, hereditary, and genetic factors?</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
</tr>
<tr>
<td>2.</td>
<td>Neighborhood crime and</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
</tr>
<tr>
<td>Question</td>
<td>Options</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>---------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Access/proximity to recreational facilities, parks, and open space?</td>
<td>A B C D E</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Access/proximity to food outlets (grocery stores, farmer's markets, convenience stores, fast food outlets, etc.)?</td>
<td>A B C D E</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Vehicular traffic congestion?</td>
<td>A B C D E</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Opportunities for active transportation (land development that supports connectivity, proximity, density, and facilities)?</td>
<td>A B C D E</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Exposure to media promoting healthy or unhealthy choices (i.e., billboards)?</td>
<td>A B C D E</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Land use trends (sprawling communities, strict Euclidean zoning, school sitings, etc.).</td>
<td>A B C D E</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Chronic diseases (obesity, Type 2 diabetes)?</td>
<td>A B C D E</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Section D: Jurisdiction Specifics**

For the following questions, 18-24, please provide answers based on your jurisdiction in regards to planning and community health. Check all that apply.

1. For your jurisdiction, physical activity of residents is:
   - A very important issue
   - A marginally important issue
   - Not an important issue
   - Not sure

2. For your jurisdiction, residential access to healthy foods is:
3. For your jurisdiction, the relationship between community planning and design and the ability of residents to be physically active is:

- A very important issue
- A marginally important issue
- Not an important issue
- Not sure

4. For your jurisdiction, the relationship between community planning and design and the ability of residents to access healthy food is:

- A very important issue
- A marginally important issue
- Not an important issue
- Not sure

5. For your jurisdiction, barriers to incorporate healthy eating and active living goals and objectives into plans, projects, and regulations: (Note: Healthy eating and active living refers to a way of life that integrates physical activity into daily routines, as well as having access to affordable, nutritionally dense foods.)

- Not regarded as a planning issue
- Are an assumed, not a stated goal
- Lack of political support
- Would distract from other priorities
- Lack of funding
- Other (please specify)

6. Which local government agencies and departments has your department collaborated with in the past five years? (check all that apply)

- Parks and Recreation
- Public Works
- Transportation
- RPC/COG
- Schools
- Public Health
- Safety
- Other
- None
7. Does your jurisdiction have a specific healthy eating and/or active living plan?

- Yes (continue with Path 1)
- No (continue with Path 2)

**Path One: Communities with a specific community health plan.**

1. Which of the common types of plans in your jurisdiction contain explicit policies, goals, and/or objectives related to increasing residents opportunities for active living and healthy eating?

- Specific element within the Comprehensive Plan
- Health incorporated throughout the Comprehensive Plan
- Parks and Recreation Master Plan
- Bicycle/Pedestrian Master Plan
- Transportation Plan
- Growth Management
- Downtown Master Plan
- Neighborhood Plans
- Other (please specify)

2. Please check all that apply to your jurisdiction’s health-promotion strategy:

- Staffed internally
- Staffed through partnerships with outside agency *(please specify)*
- Funded internally
- Funded through grant(s) *(please specify)*
- Alternative funding *(please specify)*
- Advocacy based
- Program-based
- Policy-based
- Governing structure through independent council
- Governing structure through health department or health-program
- Governing structure through governmental employees

3. Have any evaluations been done pre- or post-implementation of such policies?

- Yes *(please specify)*
- No

4. How do you play an active role in supporting healthy eating and active living? *(check all that apply)*

- Promote healthy eating active living ideas amongst stakeholder groups.
- Raising/applying for/acquiring the necessary funds for programs
- Helping to establish programs that address healthy eating and active living.
• Promote collaboration amongst key agencies (public health, planning, school districts, etc.)
• Other (please specify)
• None
5. What other agencies, organizations, and/or non-profits do you work with for the purpose of addressing healthy eating and active living?

• Public Health Department
• Parks and Recreation
• School Districts
• Food Policy Council
• Non-profits (please specify)
• Educational/research facilities (please specify)
• Other (please specify)
6. Does your jurisdiction address healthy eating and active living through other methods (plans, ordinances, and/or regulations, etc.)?

• Yes
• No (skip next section)

Path One: Continued

1. Indicate specific measures your jurisdiction has implemented supporting healthy eating and active living: (check all that apply)

• Complete Streets Policy/Ordinance
• Walkability Audit
• Open space/parks minimum requirements
• Development regulations that discourage sprawl
• Development regulations that encourage mixed use, transit oriented development, and/or traditional neighborhood developments
• Implementation of joint use agreement to provide recreation opportunities
• Sidewalk ordinance/requirement for all new developments
• School siting revisions to increase proximity/connectivity/walkability
• Safe Routes to School
• Community Food Assessment
• Food Access analysis
• Food Policy Council (forming or members of)
• Farm to School Program
• Healthy Vending Ordinance
• Urban Agriculture zoning
• Community Garden Programs
• Healthy Corner Store Initiative
- Soda Tax
- Zoning restriction of unhealthy foods (example of drive-thru ban, or no fast food outlets within a certain square mileage of schools and parks)
- Farmers Markets
- EBT at Farmers Markets
- Require restaurants to show nutritional index
- Promote healthy roadside vending

2. Have any evaluations been done pre- or post-implementation of such strategies?
   - Yes (please specify)
   - No

3. From the list below, indicate all entities that have contributed to your jurisdiction’s efforts to address community health: (please check all that apply)

<table>
<thead>
<tr>
<th>Financial Support</th>
<th>In Kind Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipal/local government</td>
<td>Municipal/local government</td>
</tr>
<tr>
<td>Robert Wood Johnson Foundation</td>
<td>Robert Wood Johnson Foundation</td>
</tr>
<tr>
<td>Public Health Department</td>
<td>Public Health Department</td>
</tr>
<tr>
<td>CDC</td>
<td>CDC</td>
</tr>
<tr>
<td>Academic (local university/college)</td>
<td>Academic (local university/college)</td>
</tr>
<tr>
<td>U.S. Department of Transportation</td>
<td>U.S. Department of Transportation</td>
</tr>
<tr>
<td>Communities Putting Prevention to Work</td>
<td>Communities Putting Prevention to Work</td>
</tr>
<tr>
<td>U.S. Department of Housing and Urban Development</td>
<td>U.S. Department of Housing and Urban Development</td>
</tr>
<tr>
<td>U.S. Department of Agriculture</td>
<td>U.S. Department of Agriculture</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>Other (please specify)</td>
</tr>
<tr>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

4. a) Are there elements of your jurisdiction’s health-specific strategies that target population subsets?
   - Yes (continue with part b)
   - No
   b) If yes, please circle all that apply:
• Workforce
• School-age children
• Immigrants
• Minorities
• Specific geographic areas within your jurisdiction
• Other (please specify)

Path Two: Qualifier Question

1. Does your jurisdiction address healthy eating and/or active living through other methods (for example is food access or physically activity opportunities such as biking?
   • Yes (continue with Path Two)
   • No (skip to last section)

Path Two: Jurisdiction without a specific community health plan.

1. Indicate specific measures your jurisdiction has implemented supporting healthy eating and active living: (check all that apply)
   • Complete Streets Policy/Ordinance
   • Walkability Audit
   • Open space/parks minimum requirements
   • Development regulations that discourage sprawl
   • Development regulations that encourage mixed use, transit oriented development, and/or traditional neighborhood developments
   • Implementation of joint use agreement to provide recreation opportunities
   • Sidewalk ordinance/requirement for all new developments
   • School siting revisions to increase proximity/connectivity/walkability
   • Safe Routes to School
   • Community Food Assessment
   • Food Access analysis
   • Food Policy Council (forming or members of)
   • Farm to School Program
   • Healthy Vending Ordinance
   • Urban Agriculture zoning
   • Community Garden Programs
   • Healthy Corner Store Initiative
   • Soda Tax
   • Zoning restriction of unhealthy foods (example of drive-thru ban, or no fast food outlets within a certain square mileage of schools and parks)
- Farmers Markets
- EBT at Farmers Markets
- Require restaurants to show nutritional index
- Promote healthy roadside vending

2. Have any evaluations been done pre- or post-implementation of such strategies?

- Yes (please specify)
- No

3. From the list below, indicate all entities that have contributed to your jurisdiction’s efforts to address community health: (please check all that apply)

<table>
<thead>
<tr>
<th>Financial Support</th>
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<tr>
<td>U.S. Department of Agriculture</td>
<td>U.S. Department of Agriculture</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>Other (please specify)</td>
</tr>
<tr>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

4. a) Are there elements of your jurisdiction’s health-specific strategies that target population subsets?

- Yes (continue with part b)
- No

b) If yes, please circle all that apply:

- Workforce
- School-age children
• Immigrants
• Minorities
• Specific geographic areas within your jurisdiction
• Other (please specify)

Section D: Additional Information

1. Are there any other comments or suggestions you’d like to add regarding healthy eating and active living?

Path Two:

1. Does your jurisdiction address healthy eating and active living through other methods (plans, ordinances, and/or regulations, etc.)?
   • Yes (continue with survey)
   • No (your survey is complete)

2. Indicate specific measures your jurisdiction has implemented supporting healthy eating and active living: (check all that apply)

   • Complete Streets Policy/Ordinance
   • Walkability Audit
   • Open space/parks minimum requirements
   • Development regulations that discourage sprawl
   • Development regulations that encourage mixed use, transit oriented development, and/or traditional neighborhood developments
   • Implementation of joint use agreement to provide recreation opportunities
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   • Safe Routes to School
   • Community Food Assessment
   • Food Access analysis
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   • Farm to School Program
   • Healthy Vending Ordinance
   • Urban Agriculture zoning
   • Community Garden Programs
   • Healthy Corner Store Initiative
   • Soda Tax
   • Zoning restriction of unhealthy foods (example of drive-thru ban, or no fast food outlets within a certain square mileage of schools and parks)
   • Farmers Markets
   • EBT at Farmers Markets
   • Require restaurants to show nutritional index
3. Have any evaluations been done pre- or post-implementation of such strategies?

- Yes (please specify)
- No

4. From the list below, indicate all entities that have contributed to your jurisdiction’s efforts to address community health: (please check all that apply)

<table>
<thead>
<tr>
<th>Financial Support</th>
<th>In Kind Support</th>
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</tr>
<tr>
<td>U.S. Department of Agriculture</td>
<td>U.S. Department of Agriculture</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>Other (please specify)</td>
</tr>
<tr>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

5. a) Are there elements of your jurisdiction’s health-specific strategies that target population subsets?

- Yes (continue with part b)
- No (go on to question 30)

b) If yes, please circle all that apply:

- Workforce
- School-age children
• Immigrants
• Minorities
• Specific geographic areas within your jurisdiction
• Other (please specify)

Section D: Additional Information

1. Are there any other comments or suggestions you’d like to add regarding healthy eating and active living?
### Appendix C

#### SURVEY POPULATION CONTACTS

<table>
<thead>
<tr>
<th>STATE</th>
<th>CITIES&gt;25,000</th>
<th>City Contacts</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>19</td>
<td>15</td>
<td>8%</td>
</tr>
<tr>
<td>Arkansas</td>
<td>19</td>
<td>14</td>
<td>8%</td>
</tr>
<tr>
<td>Florida</td>
<td>86</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Georgia</td>
<td>28</td>
<td>25</td>
<td>14%</td>
</tr>
<tr>
<td>Kentucky</td>
<td>13</td>
<td>12</td>
<td>7%</td>
</tr>
<tr>
<td>Louisiana</td>
<td>13</td>
<td>12</td>
<td>7%</td>
</tr>
<tr>
<td>Mississippi</td>
<td>14</td>
<td>12</td>
<td>7%</td>
</tr>
<tr>
<td>North Carolina</td>
<td>32</td>
<td>32</td>
<td>17%</td>
</tr>
<tr>
<td>South Carolina</td>
<td>16</td>
<td>16</td>
<td>9%</td>
</tr>
<tr>
<td>Tennessee</td>
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<td>25</td>
<td>14%</td>
</tr>
<tr>
<td>Virginia</td>
<td>21</td>
<td>20</td>
<td>11%</td>
</tr>
<tr>
<td>West Virginia</td>
<td>5</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>292</strong></td>
<td><strong>183</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>
## Appendix D

### SURVEY RESPONSES

<table>
<thead>
<tr>
<th>STATE</th>
<th>RESPONDENTS</th>
<th>PERCENT STATE</th>
<th>PERCENT REGION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>8</td>
<td>53%</td>
<td>9%</td>
</tr>
<tr>
<td>Arkansas</td>
<td>6</td>
<td>43%</td>
<td>7%</td>
</tr>
<tr>
<td>Georgia</td>
<td>13</td>
<td>52%</td>
<td>15%</td>
</tr>
<tr>
<td>Kentucky</td>
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<td>50%</td>
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<td>Louisiana</td>
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<td>33%</td>
<td>5%</td>
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<td>Mississippi</td>
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<tr>
<td>North Carolina</td>
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<tr>
<td>South Carolina</td>
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<tr>
<td>Tennessee</td>
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<td>64%</td>
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<td>8%</td>
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<tr>
<td>Total</td>
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<td>N/A</td>
<td>100%</td>
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REFERENCES


Heath, G., Brownson, R., Kruger, J., Miles, R., Powell, K., Ramsey, L. & the Task Forec on Community Preventative Services. (2006). The effectiveness of urban design and land use transport policies and practices to increase physical activity: A systematic review. *Journal of Physical Activity and Health* (3)1, S55-S76.


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