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Building Healthy Cities: Legal Frameworks and Considerations

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Handbook of
Urban Health
Populations, Methods, and
Practice

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Chapter 25

Building Healthy Cities

Legal Frameworks and Considerations

Wendy C. Perdue

1.0. INTRODUCTION

The physical and social structure of cities is shaped by many factors. These include economic and political conditions, historical and cultural traditions, and weather and topography. However, cities are also importantly shaped by law and government policies and this is true even in cities that seem to be dominated by private property and private enterprises.

Law impacts cities both by what the government regulates and by what it chooses not to regulate. Any decision that a matter should be governed by private choices rather than government regulation is itself a policy choice that can have significant implications on the welfare of residents. For example, the willingness of U.S. courts prior to 1948 to enforce private covenants calling for racial exclusion had important impacts on housing patterns in the U.S. Moreover, many private decisions that seem to be matters solely of private preference may in fact be affected by government intervention. This is particularly true with respect to the built environment. Decisions by private entities about what and where to build are shaped by legal requirements and prohibitions as well as by government created incentives, and the presence or absence of public infrastructure – including roads, transportation networks, parks, and government facilities.

This chapter will explore the range of laws and government policies that have shaped the physical structure of U.S. cities and thereby impacted the health of those cities' residents. This analysis will highlight the many, apparently "private" decisions that have been impacted by government policies. Though some of the laws, policies, prohibitions, and incentives have been formulated explicitly to take into account health considerations, others have unintended effects – both good and bad – on the health of urban populations. Although the chapter focuses on U.S. laws, cities throughout the world are shaped by law and government policy. In some places, it is the absence of regulatory intervention that most dramatically impacts health, as in the case of squalid shanty towns or poorly designed buildings that collapse in the face

of earthquakes or high winds. In other places, cities may be the product of very extensive government intervention (Cervero, 1998). Regardless of the intended purpose of laws and policies, any effort to understand or improve the health of urban populations must consider the critical role played by law and government policy.

2.0. THE CONNECTION BETWEEN THE BUILT ENVIRONMENT AND HEALTH

The connection between the built environment and public health became painfully apparent and widely recognized during the industrial revolution of the 19th century. The burgeoning cities were crowded, dirty, unsanitary places. Poor residents lived in tenements with little or no light, ventilation, or sanitation facilities, and frequently located close to noxious industrial uses. Epidemics of infectious disease were all too common. Sanitarians and progressive reformers understood the connection between disease and the physical environment and sought to change that environment (Peterson, 1983; Garb, 2003). Cities were rebuilt with sewers and water systems; tenement housing was improved; parks and recreation spaces were created. All of these physical changes were understood to be important steps in improving public health.

Today, the built environment of our urban centers continues to affect public health, though the primary health concerns have shifted from infectious disease to chronic disease, injuries, and crime. Heart disease, asthma, and diabetes are among the leading causes of death and premature disability in the U.S. (National Center for Health Statistics, 2002). These conditions are affected by a sedentary life style, diet, and poor air quality (National Center for Chronic Disease Prevention, 2003) – all factors that are in turn linked with the built environment. For example, with respect to sedentary life-style, there is a growing body of evidence that links physical activity with the structure of our environment and how easy or hard it is to integrate active living into daily life (Frank, *et al.*, 2003; Frumkin, *et al.*, 2004). Diet is also affected by logistical factors such as a lack of access to stores or farmers markets carrying healthy food options (Morland, *et al.*, 2002) and an ease of access to “fast food” or less healthy food options. Outdoor air quality is linked to roads and transportation systems (Frumkin, *et al.*, 2004); internal air quality is linked with how buildings are built including ventilation and materials used (Samet and Spengler, 2003; National Inst. For Occ. Safety and Health, 1991).

Injuries are also affected by the built environment. Road and sidewalk design affect automobile and pedestrian injuries (Ohland, *et al.*, 2000; Ernst and McCann, 2002). Building design affects injuries from fires and falls (Krieger and Higgins, 2002). Even crime is affected by the built environment. Lighting, visibility, layout, and design can all reduce the incidence of criminal activity and there is a growing interest among architects, planners, and law enforcement in environmental design as a tool in crime prevention (Katyal, 2002; Newman, 1972; Mair and Mair, 2003; Carter, *et al.*, 2003).

As this brief summary highlights, there are important connections between public health and how we build our cities. There are a variety of factors that shape the physical structures of our urban areas including weather, topography and economic conditions. However, a critical influence on the built environment is law and related government policy. The remainder of this chapter focuses on the role that law and government policy plays in shaping our cities.

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3.0. THE BASIC LEGAL TOOLS

The laws and policies that determine the physical structure of our cities fall into three basic categories: direct regulation of private parties, economic incentives or subsidies for private parties, and government provisions of facilities or services. These categories are not unique to urban issues, but represent three basic techniques for implementing government policies.

These three different approaches can be illustrated with a simple example. Consider, for example, the public health problem of smoking. One approach is to regulate smoking directly, by prohibiting smoking in particular places and by particular people, i.e., children. A second approach is to provide economic incentives either for individuals to encourage them not to smoke, for example, by raising the price of cigarettes through taxes, or for businesses to encourage them to ban smoking or to offer smoking cessation programs. The third approach is for government itself to provide smoking cessation programs, public information about the harms of smoking, and to ban smoking in government buildings and facilities. These legal techniques vary in their infringement upon individual autonomy and may also vary with respect to cost and effectiveness, but all three are used in connection with urban policy. Each of these approaches is explored below.

The first technique is direct regulation in which government requires or prohibits specific conduct. Direct regulation can be enforced through either criminal or civil sanctions. Direct regulation of private entities is ubiquitous and has a significant role in shaping our urban areas. Zoning and land use regulations prohibit some uses in certain areas. These laws may also require buildings to meet a variety of physical constraints including height, set back and parking requirements. Other types of direct regulations include building code restrictions meant to assure safe buildings, and environmental regulations, which may prohibit the use of certain toxic materials, and require appropriate handling of potential environmental impacts such as storm water run-off.

The second technique – economic incentives and subsidies – is sometimes less obvious but also important in shaping our urban centers. Governments frequently offer tax incentives to encourage investment in housing, or to attract businesses. Such incentives can be an important vehicle for encouraging the private market to build what is needed where it is needed. The tax deduction for home mortgages and tax credits for the construction of low income housing are two examples. In addition, cities may offer a variety of economic incentives in order to attract particular businesses or to encourage redevelopment of particular areas. These incentive programs can also have unintended consequences that can shape urban areas in undesirable ways. For example, the Federal Housing Authority (FHA), which was created in 1934, offered incentives to encourage home construction and renovation, but its rules favored socially homogeneous suburban housing developments and discouraged investment in existing urban neighborhoods, thereby contributing to urban deterioration (Farrell, 2002).

Finally, government is a major direct participant in the building of our urban centers. Most obvious are the roads and transportation networks that provide the skeleton on which our cities grow and are a defining characteristic of each urban area. In addition, other governmental infrastructure such as schools, parks, libraries, and recreation facilities, along with other governmental buildings are important determinants of the character and health of urban areas.

All three of these techniques of government intervention affect the nature and form of our urban areas and reflect fundamental policy choices. These choices may be made taking public health into account, or may be driven primarily by other factors. In an early era, for example, the introduction of public water and sewer systems were major public infrastructure projects undertaken explicitly to improve public health (Peterson, 1983). Parks as well have been understood to have important public health benefits (Peterson, 1983). Today, government intervention through transportation systems or business incentives is intended primarily to promote economic development. This intervention nonetheless may have important impacts on health. The location and design of roads and transit can affect vehicle miles traveled and the attendant air pollution problems, along with levels of walking and biking, and the numbers of injuries from collisions. Decisions about where businesses and buildings can locate, and what to prohibit or require, encourage or discourage can similarly affect health. Whatever their motivations or articulated goals, government choices about whether and how to intervene in decisions that shape the physical structure of our cities are likely to have important impacts on the health and welfare of the people who inhabit our cities.

4.0. AREAS OF LAW THAT SHAPE OUR CITIES

The forms or techniques of legal intervention described above are not unique to cities or the built environment. However, these techniques are reflected in numerous laws and government policies that affect the built environment and physical shape of our urban centers. The following section explores the specific areas of law that are most significant in shaping our cities. In many of these areas, the relevant laws are promulgated at the state or local level and there are significant variations around the country. Therefore, these areas are described generally by category.

4.1. Zoning and Land Use Laws

In most places, building and development is governed by an array of zoning and land use laws. These laws are generally promulgated locally—at the city or county level—though usually under the authority of state enabling legislation. They are frequently shaped by a process of land use planning intended to lay out an overall plan and vision for the development of the community (Frielich, 1999).

The stated goal of zoning and other land use regulations is to promote “health, safety, morals, or the general welfare of the community” (Standard State Zoning Enabling Act § 1), though some have suggested that many zoning ordinances may have been designed with a priority placed on economic interests than on health (Rodgers, 1998). Traditional zoning ordinances seek to achieve this by dividing the land into different use categories, e.g., residential, commercial, industrial, on the theory that it is better for public health, welfare, and aesthetics to separate these uses. For each category of use, an ordinance usually specifies intensity of use along with other criteria such as minimum lot size, maximum building height and set back requirements. Further development standards may impose additional requirements such as a minimum number of parking spaces; open space, recreation facilities, or public amenity requirements; or requirements to dedicate or build roads or sidewalks (Juergensmeyer and Roberts, 2003). Though most zoning and land use codes are framed in terms of mandates and prohibitions, they may also include incentives

as well. For example, projects including grocery stores).

Zoning and land use is one of the most important factors (Frank, *et al.*, 2004), and is affected by the built environment (Frank, *et al.*, 2003; Frank, *et al.*, 2003) that appear to affect health (Frank, *et al.*, 2003; Powell, *et al.*, 2003) and amenities for health (Frank, *et al.*, 2003).

Unfortunately, zoning and land use is making it less likely for people to start a business. In addition, zoning and land use is making it more difficult to get zoning separations for “mall” style developments. Zoning and land use is not conducive to pedestrian-friendly codes found in walkable communities. Walkable communities have begun to emerge. The U.S. Department of Housing and Urban Development has released a code book (Meck, 2002).

Second, pedestrian-friendly design (Jacobs, 1961), which can reduce the incidence of crime (Jacobs, 1961), is a concern. Zoning and land use is making it easier or harder for people to start a business. Some zoning and land use codes are deteriorating neighborhoods and increasing crime in those neighborhoods.

Finally, zoning and land use is making it more difficult to get zoning separations for “mall” style developments (Kaufman, 2000). Zoning and land use is making it more difficult to get zoning separations for “mall” style developments (Kaufman, 2000). Zoning and land use is making it more difficult to get zoning separations for “mall” style developments (Kaufman, 2000). Zoning and land use is making it more difficult to get zoning separations for “mall” style developments (Kaufman, 2000).

4.2. Building

One of the most important efforts to improve housing and building is the Tenement House Act of 1886, which required that housing and building be safe and healthy.

as well. For example, codes may allow developers to build more dense projects if the projects include particular desired elements (e.g., affordable housing or a needed grocery store).

Zoning and land use laws impact health in several ways. First, a sedentary lifestyle is one of the most significant controllable risk factors for chronic disease (Frumkin, *et al.*, 2004), and there is a growing body of evidence that levels of physical activity are affected by the design of communities in which people live and work (Ewing, *et al.*, 2003; Frank, *et al.*, 2003; Frumkin, *et al.*, 2004). Neighborhood design characteristics that appear to affect levels of physical activity include how compact development is, whether there is a mix of uses and destinations within an easy walk (King, *et al.*, 2003; Powell, *et al.*, 2003), the pattern of streets, and whether there are sidewalks, bike paths and amenities for walkers and bikers (Frank, *et al.*, 2003; Saelens, *et al.*, 2003).

Unfortunately, the standard approach to zoning is to strictly separate uses, making it less likely that there will be destinations within an easy walk of one's home or business. In addition to separating uses, development standards may require building separations, set backs and parking standards that effectively mandate "strip mall" style developments that are easily accessible to the automobile and quite un-conducive to pedestrian activity. Indeed, one study of Illinois municipal zoning codes found that most of those codes impeded rather than facilitated compact, walkable communities (Knapp, *et al.*, 2001). In response to these concerns, some cities have begun revising their zoning codes to encourage mixed-use, compact, and walkable communities (Langdon, 2003a), and the American Planning Association has released a compilation of model provisions for those interested in such revisions (Meck, 2002).

Second, physical layout and design can either facilitate or discourage crime. Careful design can decrease dark and hidden spaces, increase "eyes on the street" (Jacobs, 1961), and affect social norms and a sense of community, all of which can reduce the incidence of at least some crimes. (Katy, 2002) Zoning law requirements concerning set backs and parking, along with limitations on uses, may make it easier or harder to develop buildings and spaces that discourage crime. Moreover, some zoning or building requirements can discourage redevelopment of older deteriorating neighborhoods and hence contribute to conditions that encourage crime in those neighborhoods (Carter, *et al.*, 2003).

Finally, zoning and land use laws may play a role in diet (Pothukuchi and Kaufman, 2000). In some urban areas, residents have limited access to fruits, vegetables and healthy food alternatives (Sloane, 2004), and this lack of access may correlate with less healthy eating patterns (Morland, *et al.*, 2002; Reidpath, *et al.*, 2002). Zoning or other regulatory obstacles including the requirement to provide vast amounts of parking even in relatively urban settings can make it difficult to develop supermarkets in some areas. More flexible land use rules may also facilitate farmers' markets or community gardens (Schukoske, 1999). On the flip side, zoning and land use laws affect the location and concentration of fast food restaurants (Ashe, *et al.*, 2003).

4.2. Building Codes and Other Regulation of Structures

One of the innovations of the early 20th century progressive movement was the effort to improve safety and sanitation in tenement housing. The landmark 1901 Tenement House Act for the City of New York laid the foundation for subsequent housing and building codes intended to assure that buildings are safe and sanitary.

Further impetus came with the Federal Housing Act of 1954, which required local governments to develop housing and building codes in order to qualify for federal housing and urban renewal programs.

The majority of building codes are adopted as state legislation, though local variations may be permitted, and most are based on model codes developed by private organizations of professionals such as the International Code Council and the National Fire Protection Association. These codes address structural issues along with electrical wiring, plumbing, fire safety, heating, air conditioning and ventilation. Housing codes may specify minimum living area and require that bedrooms have windows or an escape route to the outside. Building codes are nearly always framed as mandates or prohibitions, and, as a result, their effectiveness may depend on the effectiveness of enforcement (Brown, *et al.*, 2001).

These building and housing codes affect public health in several ways. Injuries are the leading cause of death in children ages 1 to 21. Smoke detectors, sprinklers, and safety requirements for electrical and gas systems can reduce fire injuries. Structural requirements can prevent building collapse. Design standards for stairs, railings and window barriers can prevent falls. Adequate ventilation may prevent build up of toxic or combustible compounds. Adequate sanitation may reduce cockroach infestations, a risk factor for asthma (Cummins and Jackson, 2001). On the other hand, codes that are too restrictive can have unintended and undesirable consequences. For example, it can be difficult to retrofit existing buildings to achieve compliance with building codes focused on new construction. This may discourage redevelopment of existing underused buildings which may, in turn, accelerate a decline of older urban neighborhoods and encourage suburban sprawl (McMahon, 2001b). Likewise housing code requirements that go beyond the minimum necessary to assure safety can discourage innovation that could lower housing costs or permit construction of smaller, more affordable units (Kelly, 1996).

4.3. Housing Policy

Adequate housing is one of the most basic human needs and since at least the 1930's, government has been actively involved in encouraging the creation of more housing. The largest government housing programs take the form of economic incentives that encourage housing construction and purchase, but these programs also include direct government provision of housing as well as the use of mandates.

Today, the largest subsidy of housing is through the federal tax system. The total subsidy from deductibility of mortgage interest and real estate taxes, and the exemption from capital gains tax of profits on home sales is estimated to be \$100 billion per year (Cunningham, 2003). In addition to these programs that target the broader housing market, the federal government runs other incentive and subsidy programs for low income tenants – both rent subsidies and tax credits to encourage the construction of low-income housing (Cummins and DiPasquale, 1999).

Government involvement in housing is not limited to subsidizing private housing – it also directly provides public housing for citizens in need. In some cities, public housing may represent a significant portion of the housing stock. In Washington, D.C., for example, it is estimated that 5% of the city's population lives in homes owned and operated by the Public Housing Authority – the city's largest single landlord (Cunningham, 2003). Housing policies also take the form of mandates or prohibitions, though some of these may actually discourage rather than encourage certain types of housing. For example, large lot zoning, minimum house size

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requirements, and the exclusion of multi-family buildings, townhouses or accessory apartments (New Urban News, 2001) or prohibitions on housing built above retail may reduce the availability of lower priced housing (Norquist, 1998). On the other hand, some local governments use mandates to increase the supply of affordable housing by requiring that developers of large residential projects set aside a percentage of the units in the project as "moderately priced dwelling units" (Moderately Priced Dwelling Unit Ordinance; Powell, 2003).

Government housing policy affects the health of urban residents in several ways. First, the quality and availability of housing, particularly affordable housing has significant health effects (Krieger and Higgins, 2002). A lack of affordable housing may increase homelessness along with its attendant health problems including higher rates of disease, both chronic (The Urban Institute, 1999) and communicable (Moss, *et al.*, 2000), greater rates of trauma due to victimization and crime (Wenzel, *et al.*, 2000), and higher mortality rates than the general population (Barrow, *et al.*, 1999). Likewise, overcrowding has significant health impacts. The greater proximity of people to each other may increase the ease of disease transmission as well as put strains on sanitation and garbage disposal systems. It may also increase psychological stress and the likelihood of violence (Wallace and Wallace, 1998). Moreover, as people are forced to devote more of their income to housing, they are likely to have fewer resources available for other necessities including food and health care (Cummins, 2001).

Second, government policies, including public housing policies, that tend to concentrate poverty in particular neighborhoods, may have adverse health consequences. Studies suggests that even controlling for personal characteristics such as income and education, living in a neighborhood with a high concentration of poverty is associated with a higher incidence of coronary heart disease (Diez Roux, *et al.*, 2001), as well as higher levels of stress and depression (Leventhal and Brooks-Gunn, 2003). In addition, housing projects that are poorly designed and maintained, as many were in the 1950's and 60's (Rybcznski, 1995; Jackson, 1985; Newman, 1972), and lack recreation space, may increase crime in the area and stress for the residents (Quercia and Bates, 2002) as well as decrease the likelihood that residents will walk or that their children will play outdoors.

Finally, policies that encourage large lot, sprawl developments may result in communities that are more likely to be auto dependant rather than pedestrian oriented with the attendant problems of air pollution and sedentary life style (Savitch, 2003). The methodology used for many years by the Federal Housing Authority to appraise homes valued racially segregated, homogenous suburban neighborhoods or new, single-family homes over older, more heterogeneous urban neighborhoods. This both spurred suburbanization and contributed to the deterioration of urban residential neighborhoods (Jackson, 1985). Today, the federal tax treatment of home mortgages and capital gains in residences continues some of this effect because, as economists have argued, these provisions encourage people to purchase larger homes on larger, more suburban lots, and reinforce exclusionary zoning (Voith, 1999; Gyourko and Voith, 1997).

4.4. Transportation

Our transportation infrastructure—roads, transit, sidewalks and bike paths—provides the framework around which our cities are built. Cities allow people to interact physically with many other people and it is our transportation networks that

make possible that movement of people to, from, and around the cities. Government is extensively involved in the creation of our transportation systems, primarily by funding and building the systems itself, but also by using economic incentives concerning the use of certain forms of transportation and by imposing mandates on private parties to build transportation components.

One of the most significant government transportation programs was the creation of the interstate highway system. The Federal-Aid Highway Act of 1956 provided for over 40,000 miles of highways, 90% of which were to be funded by the federal government. Although only 15% of the highway miles were to be built in urban areas, the impact of these highways on cities has been dramatic. The highways were designed by road engineers, not urban planners, and were intended to move as many cars as possible as quickly as possible through the city (Altshuler, 1983). As Witold Rybczynski explains: "the highways (usually elevated) wrought physical havoc in the established urban fabric, reducing the older housing stock, creating physical barriers between neighborhoods, and often cutting cities off from their waterfronts. Urban highways also ultimately accelerated central city decline by providing easy access to the suburbs from downtown" (Rybczynski, 1995).

Federal, state and local governments continue to invest heavily in roads. In the year 2000, all levels of government spent a total of \$127.5 billion on roads and highways (Federal Highway Admin., 2002). Government also invests in other modes of transportation including public transit, along with pedestrian and bike facilities, but investments in these alternative transportation modes is significantly less than on roads (Surface Transportation Policy Project, 2000).

Cities are affected not only by what is built and where, but also by how transportation projects are built. State and local governments promulgate design standards or "road codes" that specify engineering criteria for roads such as width, curvature, turning radii, tree placements and sidewalks. These codes are generally based on a publication of the American Association of State Highway and Transportation Officials (AASHTO) called A Policy on Geometric Design of Streets and Highways. Although federal law allows AASHTO standards to be applied flexibly, many states and local governments take a more rigid approach. For example, they may require that even residential roads be quite wide, making them harder for pedestrians to cross, (Duany *et al.*, 2000), and may prohibit street trees abutting the roadway thereby making walking less pleasant and possibly less likely.

Transportation demand is affected by a variety of government requirements and incentives. Building and zoning codes can encourage auto-dependant design by requiring extensive amounts of parking. The federal tax code similarly encourages auto use by allowing employers to provide parking benefits of up to \$195 tax free, but only \$100 in comparable transit benefit. There is no federal tax benefit available to walkers or bikers. On the other hand, disincentives such as higher gas or parking taxes and HOV lanes may discourage driving of single occupancy vehicles.

Our urban transportation networks of roads, sidewalks, bike paths and transit are not built exclusively by government. Private developers may be required to build roads, sidewalks, bus shelters, or bike paths in order to accommodate the increased transportation demands generated by their projects. In the alternative, or where construction of new facilities is not feasible, they may be required to operate "traffic demand management" systems that encourage workers and new residents of their projects to walk, car pool, or take transit so as not to overburden the existing roads.

Transportation projects affect the safety of the streets. Streets designed and built for a car system can either encourage walking or biking. The impact on air quality and other issues including noise (Rybczynski *et al.*, 2004).

4.5. Economic Development

Beginning in the 1960s, "slum clearance" projects were based on a combination of public housing and urban renewal. Although initially successful, they were later revised to include public housing (Rybczynski, 1989). Under the new approach, public housing was made available in urban areas along with other housing. In the 1970's, public housing was replaced by private vehicles for access to urban areas. The government made available Urban Development Corporation (UDC) money for retail malls and other commercial projects. The money was used to invest in economic development.

One of the major reasons for the loss of power to condemn blighted land necessary for "public purposes" (Roberts, 2003) was the Redevelopment Authority's (RA) resale of properties (Parker, 1954), and the ability to alter the scope of the project.

Not all of the projects had a focus on blighted areas. Some target particular "urban renewal zones," arts and culture districts. In some cases, the result was the displacement of people and elsewhere, the construction of apartments came from the money raised in building and operating the project (Rybczynski, 1989).

Redevelopment projects can be affected by the location and improve the quality of life. Toxic chemicals in the air, "slum clearance" projects, and did not re-

Transportation systems are linked to health in three critical ways. First, there is the safety of the systems themselves. Roadways, sidewalks and bike paths can be designed and built to reduce the likelihood of injuries. Second, the transportation system can either encourage or discourage active forms of transportation such as walking or biking. Finally, heavy reliance on automobiles has a direct and significant impact on air quality, and air quality is in turn closely linked to a number of health issues including asthma, cancer, respiratory, and cardiovascular diseases (Frumkin *et al.*, 2004).

4.5. Economic Incentives for Redevelopment

Beginning in the 1950s, the federal government began supporting urban "slum clearance" programs, later referred to as "urban renewal." These programs relied on a combination of direct government involvement, incentives, and mandates. Although initially focused on providing better quality housing, the programs were later revised to allow other types of commercial development (Frieden and Sagalyn, 1989). Under these programs, thousands of acres of urban land were cleared and made available for redevelopment, sometimes with the city agreeing to build parking and other infrastructure, along with tax rebates and other incentives. Beginning in the 1970's, there was increasing emphasis on public-private partnerships as vehicles for achieving socially desirable goals. To that end, the federal government made available to local officials several billion dollars as part of the Urban Development Action Grant Program (UDAG) (Frieden and Sagalyn, 1994). The money was used by cities to attract desired developments including downtown retail malls and office developments. Today, state and local governments continue to invest in economic redevelopment projects.

One of the important powers that local governments have in this regard is the power to condemn private land. The condemnation power includes not only taking land necessary for government operations, but also extends to land needed for any "public purpose," including economic development projects (Juergensmeyer and Roberts, 2003). Thus, the U.S. Supreme Court upheld the District of Columbia Redevelopment Act which included the power to condemn "blighted areas" and resell properties to new private owners as part of a redevelopment plan (Berman v. Parker, 1954), although a case currently pending before the Supreme Court could alter the scope of state authority in this area (*Kelo v. City of New London*, 2004).

Not all of the government programs intended to encourage private redevelopment focus on large projects. Many state and local governments have programs that target particular industries or particular locations such as "economic empowerment zones," arts and entertainment districts, or historic areas. Moreover, change is sometimes the result of a series of incentives and regulatory changes. In New York City and elsewhere, for example, the transformation of old industrial space into loft apartments came not as a result of spontaneous demand, but in response to changes in building and zoning codes combined with tax incentives (Frieden and Sagalyn, 1989).

Redevelopment projects have several potential impacts on health. First, health can be affected by whatever the redevelopment project replaces. Projects may be built on and improve sites that are dilapidated, infested with vermin, contaminated with toxic chemicals and may be crime ridden. On the other hand, one of the criticisms of "slum clearance" and urban renewal projects of the 1960's was that they demolished and did not replace large numbers of low income housing units and thereby

exacerbated shortages of affordable housing (Frieden and Sagalyn). A second potential health effect stems from what is included in the projects. Redevelopment projects can include elements that themselves contribute to the health of surrounding residents. For example, in areas that are underserved by grocery stores or other sources of nutritious food, governments can require or provide incentives to assure that any redevelopment project in that area includes a grocery store (Burton, 2004; Pennsylvania Dept. of Agriculture, 2004). A final potential health effect of redevelopment projects stems from how the projects are built. Projects can be auto dependant, cut off from the street, and discourage pedestrian activity, or they can include pedestrian amenities and be designed to encourage walking.

4.6. Environmental Protection Laws

The built environment of our urban areas is affected by a number of federal, state and local environmental regulations designed to protect the quality of the air, water, and other environmental conditions. Important federal laws include the Clean Air Act, the Clean Water Act, the Safe Drinking Water Act, the Solid Waste Disposal/Resource Conservation and Recovery Act, the Toxic Substances Control Act, and the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). State and local laws include regulations concerning storm water management, tree protection requirements, toxic molds, and laws relating to sewer, septic facilities and wells (Nolon, 2002).

Most environmental regulations use mandates and prohibitions to regulate what can be built and where, though some rely on incentives. The Clear Air Act uses a "stick" approach to encourage state and local governments to address air pollution by providing that regions that fail to achieve certain air quality standards may become ineligible for federal highway money. The "Superfund" law (CERCLA), imposes liabilities on site owners of toxic sites in order to fund the clean up of contaminated "brownfields."

The adverse health effects of environmental pollution are well known. Air pollution increases deaths from cardiopulmonary diseases, (Peters and Pope, 2002) and is associated with increases in asthma incidents (Cummins and Jackson, 2001) and infant mortality. (Kaiser, *et al.*, 2004) When traffic was reduced in Atlanta for the 1996 Olympic Games, peak ozone concentrations decreased by 27.9% and the number of asthma medical emergencies fell by 41.6%. (Friedman, *et al.*, 2001) Water can be contaminated with either chemical carcinogens or bacteria (Frumkin, *et al.*, 2004; Savitch, 2000). Indoor toxins such as asbestos, lead from paint, molds, and irritant chemicals can cause cancer, asthma, and learning disabilities or mental impairments (Samet and Spengler, 2003). Finally, toxins from industrial solid waste disposal sites can have significant harmful effects on nearby residents (Lord, 1995).

4.7. Government Facilities

A final set of laws and policies that impact both the physical environments of our urban areas and the health of urban populations are the decisions governments make about what government infrastructure and facilities will be provided and where and how these are built. In addition to roads and transportation systems, discussed above, governments provide parks and recreation facilities, as well as schools, libraries, and numerous government offices. When these facilities are well

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designed and well placed, they can encourage physical activity through pedestrian access and by creating lively, mixed use communities.

In the late 19th century, planners began to focus on the need for systematic planning concerning parks, civic space and other public facilities. A number of cities responded by creating extensive systems – particularly of parks (Scott, 1969). The most ambitious such plan was Daniel Burnham's 1909 plan for Chicago which called for extensive parks and civic amenities, as well as major improvements to transportation and other commercial facilities (Wrigley, 1983). The city embraced the plan and over the next 20 years invested nearly \$300 million in civic improvements. Subsequent residents of Chicago have been the beneficiaries of that foresight and investment.

Today, government entities routinely make choices about what government facilities to build, and where and how to build them. Government decision makers, like their private counterparts, may focus on issues such as keeping down capital and operating expenses, but their decisions in this area do have health implications. First, how buildings are designed may affect levels of physical activity of the users and employees of these facilities. Careful attention to sidewalks, pedestrian amenities, the location of parking (Dallas Morning News, 2003), along with the accessibility and attractiveness of stair ways (Boutelle, *et al.*, 2001), may increase the likelihood that building users will walk. In order to assure attention to pedestrian safety and access, one Maryland community requires that all large government capital projects include a "pedestrian impact statement" (Levine, 2004).

Second, the locations of public facilities can have important implications both on levels of physical activity and on issues such as auto dependency and air pollution. Facilities that are located on large, suburban sites with easy auto access may contribute to sprawl-style development and thereby increase auto use and attendant air pollution problems. In contrast, when facilities are located on more compact sites closer to facilities and destinations, they may contribute to walkable, lively communities (Langdon, 2003b; McMahon, 2001a).

Schools provide a useful illustration of how choices concerning the design and location of government facilities may affect health. Obesity among children is a rising problem (Ogden, *et al.*, 2002). At the same time, the percentage of children who walk to school has declined significantly from about 50% in 1969 to under 10% today (Ernst and McCann, 2003; Savitch, 2003), and mothers of school aged children are spending increasing amounts of time in the car chauffeuring their children (Surface Transportation Policy Project, 2002). While the causes of these changes in behavior are complex, at least one factor may be the size, design, and placement of schools. School acreage requirements have increased over the years, so that today, relying on state and local education department requirements, a high school may require as much as 60 acres. In addition, state funding formulas frequently favor new construction over renovations. The result of these policies is to push schools onto suburban sites that are less accessible by walking or biking (National Trust for Historic Preservation, 2000; McMahon, 2000).

A third implication of decisions concerning government facilities relates to parks and recreation facilities. Proximity to parks and recreation facilities is another factor that correlates with higher levels of physical activity (Huston, *et al.*, 2003). Parks also reduce stress and improve psychological well-being for users (Ho, *et al.*, 2003; Parsons, *et al.*, 1998; Taylor, *et al.*, 1998), as well as contribute to environmental quality. In times of tight budgets, parks and recreation facilities may seem like a luxury, but they can also be understood to be part of our basic health infrastructure.

Fourth, government facilities not only impact the communities in which they are built and the people who use them, their construction presents opportunities for government to lead by example (McMahon, 2001a). Changes and approaches successfully implemented by government can lay the foundation for wider acceptance by the public and by private industry. Finally, the locations of public facilities have important implications not only for health in general, but also for health equity. Public uses that present health hazards such as waste dumps, incinerators or sewage treatment facilities have historically been located in minority neighborhoods (Gelobter, 1994). Conversely, parks and recreation facilities may be disproportionately located in wealthier or non-minority areas (Gelobter, 1994).

5.0. PUBLIC HEALTH AND LEGAL CHANGE

The physical form of our cities has been and will continue to be significantly affected by laws and government policies. As Mark Gelfand has written, "federal decisions about interest rates, taxes, military procurement, and scores of other economic matters had a direct and substantial impact upon nearly all facets of urban life" (1975). In addition, state and local decisions about zoning, building codes, street design, transportation systems, parks, and schools, as well as policies concerning economic development all affect not only government contributions to the built environment, but private building and development as well.

In an earlier era, public health practitioners were among the leading voices in discussions about how to shape our cities (Peterson, 1983), but in more modern times these voices have been largely absent (Perdue, *et al.*, 2003). This absence has been significant. As the foregoing section demonstrates, there is a broad array of laws and government policies that affect the built environment in ways that in turn affect health. However, with respect to many of these laws, any health effects were unforeseen or unintended. Even laws intended to improve health and safety sometimes have had other, unanticipated adverse health consequences.

Those interested in building healthier cities may wish to bear in mind the following admonitions:

1. *Be an engaged participant in the full range of policy discussions on matters that affect urban life.* Issues such as health care or smoking policy obviously affect health, but those interested in urban health should look beyond the obvious. As the foregoing analysis highlights, there are important health implications to decisions concerning such diverse matters as transportation and housing policy, zoning laws, and tax incentives.

2. *Bring a broad vision of health impacts.* There are professionals such traffic engineers or fire experts who focus on particular components of health. Though this expertise and focus is very valuable, it sometimes overshadows broader concerns about health and wellbeing. Thus, traffic engineers may design streets with few auto accidents, but which also are so sterile and inhospitable that they have few pedestrians. Public health practitioners and advocates are well situated to focus attention on broader health concerns.

3. *Expand the base of knowledge and bring data to the table.* There is growing recognition of the potential connection between health and the physical and social structure of cities, but further research is needed (Litman, 2003; Dannenberg, *et al.*, 2003; Northridge, *et al.*, 2003). Public health practitioners, with their expertise in

epidemiology and health analysis.

4. *Think creatively about the result of a community situation will result from creative government itself becoming a part of the buildings so as to serve the needs of residents and clients.*

5. *Continuously evaluate laws and policies that affect health, may not be noticed until a health question.*

A greater focus on health with respect to urban form. Moreover, some cities, for example, adding sidewalks, impervious surfaces, and density may facilitate health levels, but may also have unintended consequences (2004). Rigorous evaluation of existing data and address the complex issues (North Carolina, 1996). In other words, recognizing the potential for health sometimes difficult.

This chapter has discussed the physical form of cities, incentives, and a broad range of economic development impacts that affect how residents live and work. The built environment also affects

Altshuler, A. (1983). *The United States and the tobacco, fire, and health industry*. Barrow, S. M., Hernan, and other residents in

epidemiology and empirical analysis are well situated to provide needed data and analysis.

4. *Think creatively about solutions.* Just as the current structure of cities is the result of a complex array of laws and government policies, changes in the current situation will require a multifaceted response that includes economic incentives and creative government programs. For example, government can sometimes lead by itself becoming a model citizen, e.g., by thoughtful location and design of its own buildings so as to encourage physical activity and a healthy life style by its employees and clients.

5. *Continue to ask: "What will the impact of this policy be on human health?"* Many laws and policies which do not on their face appear to have anything to do with health, may nonetheless have health impacts. However, these impacts may go unnoticed unless those interested in urban health continue to raise the health question.

A greater focus on public health does not guarantee any particular outcome with respect to policy choices. Factors other than health may be given priority. Moreover, sometimes there will be competing health and safety concerns. For example, adding sidewalks and bike paths to encourage physical activity can increase impervious surface and contribute to unhealthy water run-off. Concentrating density may facilitate walking and reduce vehicle miles traveled and overall air pollution levels, but may increase air pollution intensity within certain areas (Frumkin, *et al.*, 2004). Rigorous building codes make buildings safer, but may also discourage reuse of existing dilapidated buildings. In some cases, careful crafting of policy can address the competing claims, as some jurisdictions have done with their road codes (North Carolina Dept. of Transportation, 2000), and building codes (Connolly, 1996). In other cases, the trade-offs will be unavoidable. However, it is only after recognizing the potential health impacts that we can then make the conscious though sometimes difficult choices that good policy decisions require.

6.0. CONCLUSION

This chapter has reviewed the range of laws and government policies that affect the physical form of our cities. These laws and policies include mandates and prohibitions, incentives and subsidies, and direct government involvement, and they touch a broad range of issues including transportation, housing, schools, parks, and economic development. The chapter highlights that the health of urban residents is impacted both directly and indirectly by the built environment in which those residents live and work. As a result, the laws and policies that affect the built environment also affect health.

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