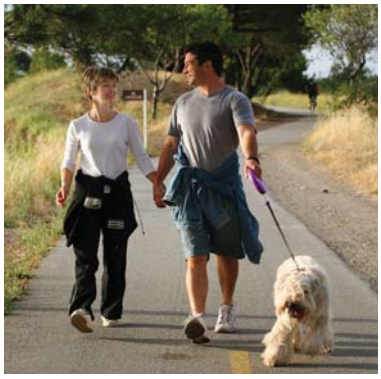
Foundations for a Healthier Built Environment

Summary Paper

January 2009



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This paper is a project of the
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Purpose of this Document:
This paper aims to support strategic action for a healthier built environment.
As this is an introduction to the topic for educational purposes, limited references are provided. For detailed evidence, please refer to previous reports produced for PHSA (www.phsa.ca/PopulationHealth).

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Why Do Health and the Built Environment Matter?

Governments in every developed nation are facing challenges from increases in the rates of chronic diseases. Most of these diseases are preventable. The global rise in childhood asthma, for instance, is attributed to poor air quality from industrial activity and vehicle emissions. Diabetes and cardiac disease are related to obesity and physical inactivity. Even more basic, the lack of safe, affordable housing severely impacts health, with the most marginalized – such as people living with mental illness – suffering the worst effects.

All of these health effects arise in part from our interaction with the built environment - the buildings, parks, schools, road systems, and other infrastructure that we encounter in our daily lives (Figure 1). Research from around the world now shows that we can improve health and reduce illness through different approaches to planning our communities. The way we choose to develop highways, shape land use policies, and ensure access to nutritious food are just a few examples of urban planning decisions that can help or hinder health goals.

These effects extend across all sectors of society and will require intersectoral action to make progress. One part of government acting alone will not be enough to achieve the necessary improvements. In particular, there is a clear need for collaboration between urban planners and those working in health authorities. This paper provides a foundation for understanding how the built environment affects health. It will clarify terms and identify linkages to develop a common language for meaningful dialogue. This should assist the many stakeholders to collaborate through shared decision-making.

Figure 1: Many Aspects of the Built Environment Affect Population Health

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How the Built Environment Affects Health

In the next 25 years, BC's population will grow 31%, while the population over 65 increases more than 100%.[1] **As the population ages, prevalence rates of chronic conditions increase.** Most of these conditions are uncommon in the young but more prevalent in older adults. For instance, the incidence of respiratory disease is increasing globally. The impact of poor air quality was shown during the Atlanta Olympic Games in 1996. A 22% reduction in auto use led to a 42% decrease for asthma admissions to emergency rooms.[2] Less dependency on private automobiles, better public transit, well designed landscapes, and increased residential density can all lead to improved air quality.

Individuals with multiple, complex health problems use a significant share of all health care resources. People with chronic conditions represent about 34% of the BC population, but they make up approximately 67% of health care costs.[3] Today, BC's Health Authorities are experiencing extreme pressure due to increased demand related to chronic diseases. Reducing demand for acute care would release resources for health promotion and illness prevention.

Aside from its role in influencing the incidence of chronic disease, the built environment can affect health in many other ways:

Urban growth and the loss of green space can drastically affect water quality. A US study showed that more than half of waterborne disease outbreaks between 1948 and 1994 were preceded by extreme rainfall. Removing vegetation compromises the natural environment's ability to filter and purify water.

- Residences with surrounding green space have been found to have a stronger sense of community, better relationships among neighbours, and lower incidence of violence in domestic conflicts.
- Urban 'heat islands', created when vegetation is replaced by buildings and parking lots, increase the health risks of heat-related illnesses. Deaths in European cities in recent summers are an extreme example.
- Although most people want to age in place, many confront significant barriers to remaining active and engaged in their communities. A lack of affordable and appropriate housing options, inadequate mobility options and concerns about the safety and security of the community are just some of the barriers.
- Urban sprawl can lead to decreased access for people with disabilities, poorer safety for cyclists and pedestrians and loss of agricultural land (and, thus, security of food supply).

In summary, environmental risk factors contribute significantly to chronic diseases such as diabetes, heart and lung disease. Modifying these risk factors is achievable but requires **community and political leadership** for a society-wide effort.[4]

1 http://www12.statcan.ca/english/census06/analysis/agesex/NatlPortrait2.cfm

2 Friedman, MS, Powell, KE, Hutwagner, L, et al. (2001). Impact of changes in transportation and commuting behaviors during the 1996 Summer Olympic games in Atlanta on air quality and childhood asthma. Journal of the American Medical Association (2001), 285, 897-905.

3 Broemeling, A, Watson D, Black C. (2005). Chronic Conditions and Co-morbidity Among Residents of British Columbia. CHSPR, UBC: Vancouver, BC.

4 Grand Challenges in Chronic Non-communicable Disease. http://www.3four50.com

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Tackling the Connection Between the Built Environment and Health

Globally, a common response to the demographic trends described above is to develop strategies that will prevent or delay the onset of chronic diseases. A growing body of evidence indicates that this is possible. According to the World Health Organization, 80% of some chronic diseases can be prevented.[5] For instance, moderate exercise and improved nutrition can help reduce health risks, improve mood and anxiety, and build strength.

Policy changes at the local level may be particularly effective at **encouraging increased physical activity** over the long term. There are many potential barriers. Urban planners play a critical role by making physical activity an easier choice. For instance, we know that urban environments that lack public gathering places encourage sedentary habits, while attractive parks and open spaces create opportunities for exercise. Protection from physical injuries is a key concern of parents and of the elderly; both public health and urban planning must respond.

Having well-designed homes, sidewalks, transportation systems and playgrounds promotes activity for all ages. Examples would be reducing the speed of vehicular traffic and providing safe cycling and walking routes. People are also more likely to walk when land use is mixed (i.e., locating shops, schools, and workplaces close to homes). **People want to live in places where they are able to be active.** Active living also contributes positively to social cohesion through increased opportunities for socialization, networking and cultural identity.

The economic benefits for society as a whole are also impressive. For instance, researchers estimate that physical inactivity costs the Canadian health care system at least $2 billion annually in direct health care costs; counting other factors, such as lost productivity, may double the economic burden.[6,7] A comprehensive review for the England Forestry Commission reported similar benefits of green space.

As the rest of this paper will discuss, effectively tackling the connection between the built environment and health will require **positive action to improve communication and enhance joint working between public health and the urban planning and design professions.**

5 WHO. (2005). Preventing Chronic Diseases: a Vital Investment. World Health Organization: Geneva. http://www.who.int/chp/chronic_disease_report/en

6 Birmingham, CL, Muller, JL, Spinelli, JJ, Anis, AH. (1999). The cost of obesity in Canada. Canadian Medical Association Journal, 160(4), 483-488.

7 Katzmarzyk, PT and Janssen, I. (2004). The economic costs of physical activity and obesity in Canada an update. Canadian Journal of Applied Physiology, 29(1), 90-115.

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Getting to Know One Another - Health Meet Urban Planning

The phrase 'built environment' refers to the surroundings that we humans have created. These surroundings include both indoor and outdoor places and vary from large-scale urban areas to smaller rural development and personal spaces. Understanding and managing the complexity of the built environment raises issues that cross the professional boundaries of architects, developers, industrial and interior designers, traffic engineers, urban planners, and others. Recently, there is a growing understanding about how the choices we make about our built environment impact health (Figure 2).

Figure 2: Health Impacts in our Neighbourhoods[8]

Neighbourhoods are the localities in which people live, work and play. **How we design our neighbourhoods is vitally important to our health and well-being.** In the public realm, land use decisions such as zoning, the design of transportation systems and communities influence health significantly. Consider, for instance, the distances people must travel to work, the convenience of buying healthy foods, or the safety of a park: all of these factors can promote good nutrition and physical activity, leading in turn to better mental and physical health.

8 Figure Source: Institute of Public Health in Ireland. (2006). Health Impacts of the Built Environment. www.publichealth.ie/publications/healthimpactsofthebuiltenvironmentareview

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A 2006 report from Smart Growth BC makes the connection between land-use policy, resulting urban forms, transportation, behaviour changes and health effects. This **'ripple effect**' is shown in Figure 3. For example, we know that walking and biking to school have become much rarer, in part because of planning and investment policies (approvals for new development are not tied to spending to improve pedestrian and bicycle infrastructure), urban form patterns (school sites are not easy for children to walk or bike and because our communities are not built to support those activities). The result on individual behaviour? Only 10% of students use active transport to get to school.[9] The result on population health? Thanks to rising obesity rates – what some call the new tobacco – we're faced with the very real possibility that the current generation of children may actually be the first to have a lower life expectancy than their parents.[10]

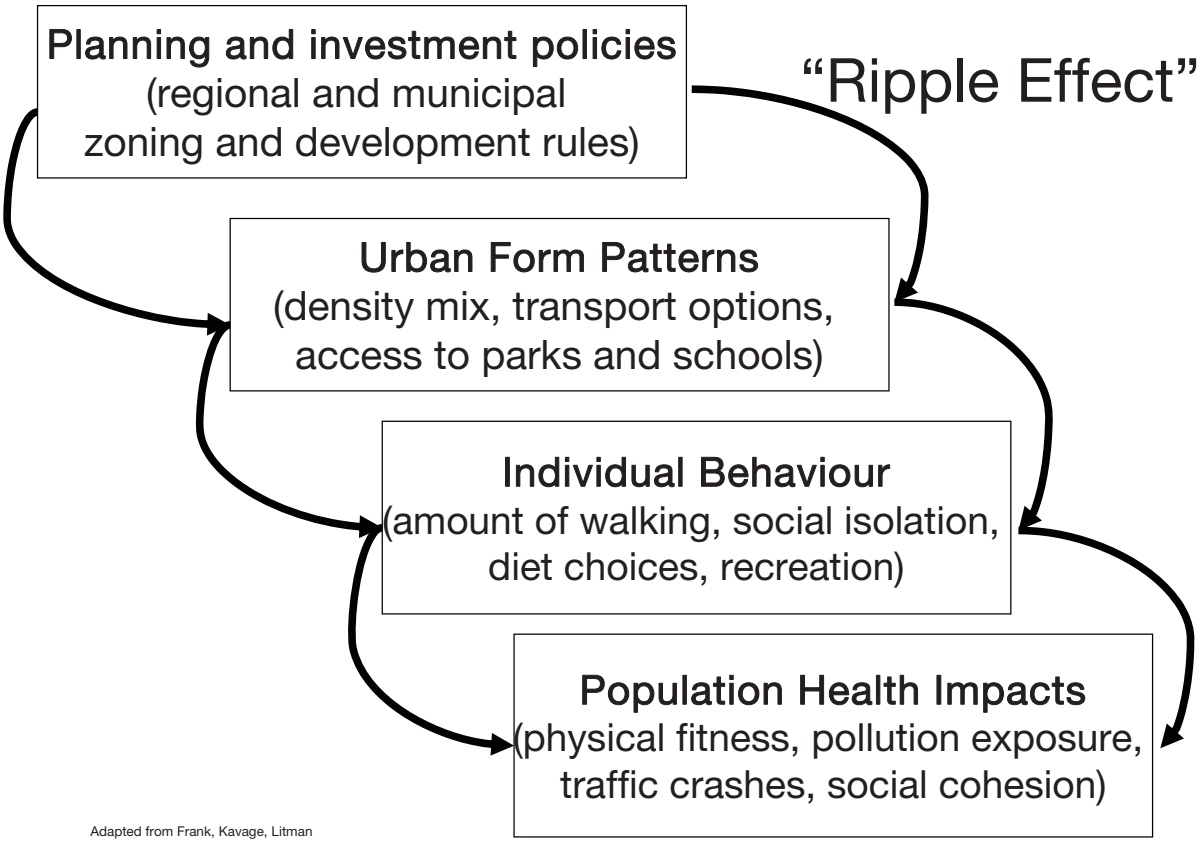

Figure 3: Linking the Built Environment to Population Health[11]

The interior design of homes, schools, workplaces and other buildings also affects health. For example, public buildings can encourage physical activity with attractive, convenient staircases. Well-designed schools improve children's educational achievement. However, indoor environments can also have negative effects such as when harmful substances contaminate indoor air and cause respiratory diseases such as asthma. Personal space, temperature, lighting, humidity and noise are other factors of the indoor built environment that affect health in different ways.

9 Canada's Report Card on Physical Activity for Youth – 2008. http://www.activehealthykids.ca/

10 Butler-Jones, D. (2008). The Chief Public Health Officer's Report on the State of Public Health in Canada 2008. www.publichealth.gc.ca/chiefpublichealthofficer

11 Figure Source: Frank, L, Kavage, S, Litman, T. (2006). Promoting Public Health Through Smart Growth. Smart Growth BC: Vancouver, BC.

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In sum, **effective planning creates supportive settings that promote healthy human habitats and healthy social interaction:** access to recreation, schools, jobs, health and social care, strong social networks, good air and water quality, and opportunities for physical activity. All of these depend on our commitment to creating a healthier built environment.

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Getting to Know One Another - Urban Planning Meet Health

"I'm late, stuck in traffic on… one of the ten worst streets in North America. It's a seven-lane road surrounded by garden apartments, mainly for poor immigrants, with no sidewalks and two miles between traffic lights. It's 95 degrees out, 95 percent humidity. I see a woman on the right shoulder, struggling along, and she reminds me of my mother. She's in her seventies, with reddish hair and bent over with osteoporosis. She has a shopping bag in each hand and is really struggling.

If that poor woman had collapsed from heat stroke, we docs would have written the cause of death as 'heat stroke' and not lack of trees and public transportation, poor urban form, and heat-island effects. If she had been killed by a truck going by, the cause of death would have been 'motor-vehicle trauma,' and not lack of sidewalks and transit, poor urban planning, and failed political leadership. That was the 'aha!' moment for me. Here I was focusing on remote disease risks when the biggest risks that people faced were coming from the built environment."[12]

New thinking about causes of ill health focuses on differences in health resulting from peoples' economic, social and cultural environments. An international report recently noted, "Heart disease is caused not by a lack of coronary care units but by lives people lead, which are shaped by the environments in which they live."[13]

'Population health' is an approach that looks at all the factors that influence health rather than just looking at an individual's personal health risks or disease. It measures health consistently over time and across a range of health factors. A population health approach recognizes many influences or 'determinants' that influence health. These determinants or causes may have an immediate impact on health (e.g., second-hand smoke) or may be several steps removed (e.g., lack of sidewalks affecting child obesity). The determinants include income and social status, social support networks, early childhood development, education, employment and working conditions, biology and genetic endowment, physical environment, personal health practices and coping skills, and health services. Many cannot be tackled directly by our health care system.

Among these determinants, many social and environmental factors – **'social determinants of health'** – influence the health of individuals and populations. These conditions in which people live and work are sometimes called 'the causes behind the causes' of ill health. While medical care can prolong survival and improve prognosis after some serious diseases, equally important for the health of populations are the social conditions that make people need medical care in the first place. Understanding the inter-connectedness of health and social conditions can guide policies and programs that explicitly address the root causes of ill health and especially the needs of those who are affected by poverty and social disadvantage.

The population health approach considers the entire lifespan. It looks at differences in location, age, gender, culture, income and other characteristics of people and the environments within which they live. For example, housing is a population health concern since lack of affordable housing can have negative

12 Jackson, RJ. (2006). Our Ailing Communities. Metropolismag, October, 2006. http://www.metropolismag.com/cda/story.php?artid=2353

13 Commission on the Social Determinants of Health. (2008). Closing the Gap in a Generation. World Health Organization: Geneva. http://whqlibdoc.who.int/publications/2008/9789241563703_eng.pdf

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effects on health, particularly on the health of vulnerable people such as those living with mental illness or the 'working poor.' Similarly, peoples' physical disabilities or ethno-cultural backgrounds can affect their ability to engage fully with their community. Lack of secure and adequate employment can have a range of impacts, including social isolation leading to poor health.

The impact of these social determinants is significant. Aside from individual suffering and premature death, chronic illnesses arising from unhealthy living conditions are creating an increasing economic burden: over $100 billion dollars annually for all indirect and direct costs across Canada.[14] International evidence shows that these individual consequences are not distributed equally. The burden of illness falls most heavily on the poor and those who are socially disadvantaged, such as women and minorities - even in developed countries such as Canada.

One of the most important social determinants is the built environment. That is cities, workplaces, homes, schools, shops - the places where people are born and where they live, grow, work and age. A few of the health concerns with the built environment include air and water quality, personal safety and injury prevention. Looking at the built environment from a population health perspective, a US researcher asked, "Who is more likely to die violently: Is it the commuter driving long distances from a suburb or the person walking short distances in an urban area with higher crime rates?" [15] This same study concluded that adding crime and car crashes together, many US cities showed a higher risk of dying in the suburbs.

Obesity - a 'shard' of the whole vessel

Although not the only culprit, obesity is often pin-pointed as a major cause of chronic illness. Exploring this condition can help to better understand **the interconnectedness of social determinants of health and the built environment.** According to the Canadian Institute for Health Information, **rates of overweight and obesity have more than doubled for Canadian adults over the past two decades,** and nearly tripled among Canadian children. The trend of weight problems in children is a particular cause for concern because of evidence suggesting a 'conveyor-belt' effect in which excess weight in childhood continues into adulthood.

The impact is large. **As obesity rates increase, so do rates of type II diabetes, heart disease, hypertension, stroke and cancer.** These chronic diseases reduce life expectancy: severely obese individuals die an average of eleven years earlier than those with healthy weights.

Understanding **the impact of social conditions on health** can guide policies and programs that explicitly address the root causes of ill health, and especially the needs of those who are affected by poverty and social disadvantage. So – what are some reasons for the increase in obesity?

Physical inactivity often leads to obesity. Numerous studies have documented the impact of urban sprawl on physical activity. When commuters travel long distances they have less time at home with their children. Suburban schools may not be close enough for children to walk or bike; there may not even be sidewalks or bike paths for safe travel. Parental concerns about personal safety of their children further restrict unsupervised play.

14 Butler-Jones, D. (2008). The Chief Public Health Officer's Report on the State of Public Health in Canada 2008. www.publichealth.gc.ca/chiefpublichealthofficer.

15 Lucy, WH. (2003). Mortality risk associated with leaving home: Recognizing the relevance of the built environment. American Journal of Public Health, 93(9), 1564-1569.

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Diet is obviously a factor in obesity. High-fat, high-sugar diets often consumed by low-income groups are more affordable than diets based on lean meats, fish, fresh vegetables, and fruit.[16] In addition to being cheap and convenient, highly processed foods are often the most accessible. Low-income neighbourhoods often have fewer grocery stores, less selection of nutritious foods and higher prices, and a greater concentration of fast food outlets. If poorer people have to work and travel long hours to make ends meet, the added time to find, buy and prepare wholesome foods is a barrier.

Admittedly these are but a few factors to illustrate how the built environment affects obesity. We could add other determinants such as cultural activities, air quality, social inclusion, and feelings of personal security. Clearly, we **need to address these issues from a whole-society perspective,** a topic we explore further next.

16 Drewnoski, A and Spector, SE. (2004). Poverty and obesity: the role of energy density and energy costs. American Journal of Clinical Nutrition, 79(1), 6-16.

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Urban Planning and Public Health Share Historical Roots

Urban planning and public health professionals[17] have much in common. During the 19th century in Canada, public health was part of municipal and regional planning departments. Together, they tackled infectious diseases through improved access to potable water, sanitation, and rodent and insect control. In the 20th century, the focus shifted to injury and disease prevention. Building permits and zoning regulated hazards such as poor ventilation, exposure to toxic substances like asbestos, and separation of residences from industrial areas.

We now need to consider new health concerns, the chronic health problems of the 21st century. The leading causes of illness and death – including cancer, cerebrovascular, heart and respiratory diseases, and injuries – are influenced by elements within and characteristics of the built environment. Moreover, we know that the burden of illness is not distributed equally: the heaviest impact falls on those in lower socioeconomic groups and other vulnerable populations.

Today, there are three main reasons to rebuild the connection between urban planning and public health:

1. **Health care impacts and costs** associated with the built environment are a major health concern and a threat to our universal health care system.

2. **Measures to promote health and healthy lifestyles** can have a significant impact – but the health effects of the built environment must be addressed as well or those measures will fail.

3. **Public health and urban planning share a responsibility** to promote active living approaches, and to shape healthier built environments. Citizens also value the positive impact of wise planning decisions, and want to see local government actively involved in creating healthier built environments.

Public health and urban planning need to make their relationship explicit again. Because of the strong impact of the built environment on health, Aboelata (2004) recommends that public health practitioners should be involved in planning related to land use, zoning and community design:

"Thus, a new role for public health leadership is emerging… in three principal areas of action. The first is to assess the health impact of land use and community design options…. The second is to catalyze and facilitate inclusive partnerships… far beyond traditional health field…. Third, public health practitioners need to participate in policymaking on issues related to the built environment to ensure protection from toxins, access to healthy food outlets, places to walk and recreate, and other health promoting environments." [18]

17 We refer to community nurses, medical health officers, environmental health and licensing officers and other professionals as 'public health'.

18 Aboelata, MJ. (2004). The Built Environment and Health: 11 Profiles of Neighborhood Transformation. The Prevention Institute: Oakland, California.

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What Needs to Change?

In the first place we need to **think differently about the economic and social factors that ultimately lead to ill health.** Consider the World Health Organization (WHO) definition of health equity: "the absence of unfair and avoidable or remediable differences in health among population groups defined socially, economically, demographically or geographically."[19] The key concepts within this definition are the words 'avoidable or remediable'. In the same report, the WHO goes on to explain that health inequities are "health differences which are: socially produced; systematic in their distribution across the population; and unfair." Because they are socially produced, the further implication is that they are modifiable.

In BC as in other jurisdictions in the developed world, health tends to be unevenly distributed among social groups within the population on a gradient corresponding to socioeconomic status. A recent report shows that BC's population does not enjoy health equity - in general, wealthier people enjoy longer life expectancy and better health than people from less advantaged groups.[20] Disadvantaged people, such as the unemployed and working poor, Aboriginal people, those with addictions or mental illness, and new immigrants are more likely to suffer chronic illness.

Health inequity may be clearly linked to the built environment. For example, compared to better-off areas, residents of low-income neighbourhoods are much more likely to face environmental pollution, crumbling infrastructure, and a lack of economic resources. Poorer communities may face barriers to greater physical activity and better nutrition such as few parks, unsafe streets and limited influence within the local government for improvements.

Health promotion approaches that focus only on education about individual behaviour have had limited success, especially with hard-to-reach groups. Moreover, the underlying 'health gradient' may make individual change efforts ineffective (Figure 4). As a result, health promotion programs typically have a short-term effect, requiring constant reinforcement. This realization has led to greater emphasis on 'upstream' or earlier causes including the effect of the built environment on people's behaviours related to diet, travel, work, play and rest.

19 World Health Organization. (2007). Leveling Up (Part 1): A Discussion Paper on Concepts and Principles for Tackling Social Inequities in Health. University of Liverpool: England.

20 Health Officers Council of BC. (November, 2008). Health Inequities in British Columbia: Discussion Paper. Vancouver, BC. See publications at www.phabc.org

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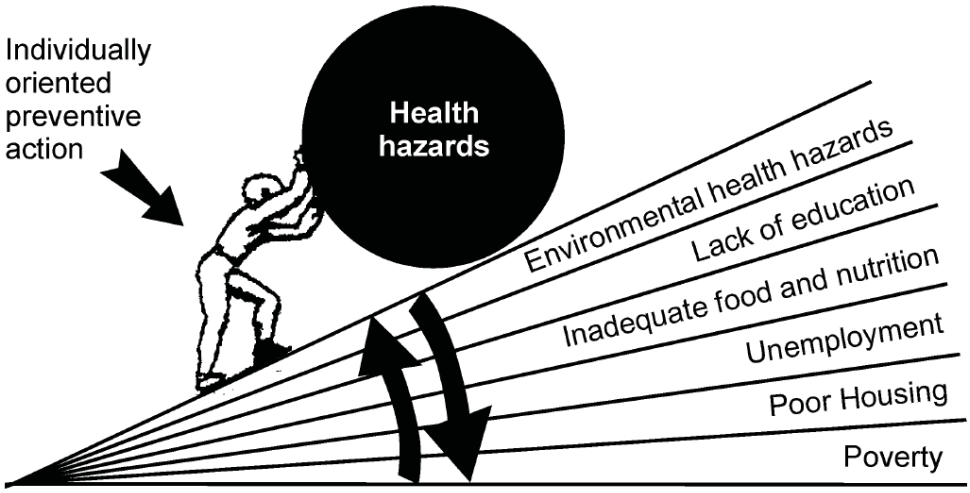
"The Health Gradient"



Source: adapted from Making Partners: intersectoral action for health.

Figure 4: Social and Environmental Determinants of Health[21]

Problems with the built environment require different sectors and groups to work together to develop common solutions. Decisions about land use, location of schools, food security – to name a few – are far beyond the mandate of our health care system. Therefore, improving health at the population level requires shared approaches between health services and other parts of society such as school boards, private businesses and various levels of government. All these groups influence health and its determinants.

Thus the second major change required is **intersectoral collaboration or partnerships that include government and non-government bodies.** Regarding the built environment, public health professionals must work closely with experts from other fields: architects, developers, planners, traffic engineers, as well as elected officials at municipal and regional level, civil society groups, businesses and others.

The challenge is to create settings and opportunities where professionals can share ideas and learn about each other's roles while developing a common language and task-based alliances. For instance: local governments play a key role setting guidelines for neighbourhood development; provincial Ministries control policies, incentives and sanctions; employers can direct their staff; and, health providers have the medical credibility to motivate the public. Professionals can also support community members to participate. By pooling their access to interested community groups, for instance, urban planners and public health staff can develop new partnerships to tackle problems from a community perspective.

21 Figure Source: Adapted from: Taket, AR. (1990). Making Partners: Intersectoral Action for Health. WHO: Copenhagen.

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Good Work Underway in BC

With society's increasing concern about these issues, more groups and agencies have become engaged. As Figure 5 shows, there is a rich array of stakeholders in British Columbia (This list is incomplete and for illustration purposes only; many others are involved in BC and across Canada.)

Government

- Various Provincial Ministries and Federal Departments
- Assistant Deputy Ministers group for ActNow BC
- Ministry of Community Services
- Infrastructure Canada
- Local Government Management Association
- Union of BC Municipalities

Developers and Financial Institutions

- Canada Mortgage and Housing Corporation
- Private developers

Health

- BC Medical Association
- Medical Health Officers
- Health Authorities
- Environmental Health Officers
- BC Centre for Disease Control
- BC Injury Research and Prevention Unit

Professional Associations and NGOs

- Planning Institute of BC
- BC Recreation and Parks Association
- Urban Development Institute
- Smart Growth BC
- Evergreen
- SPARC BC

Healthy Community Programs or Initiatives

- Aboriginal Health Initiative
- BC Healthy Communities
- Active Communities Initiative
- BC Healthy Living Alliance
- ActNow BC
- Community Futures
- HBE Alliance

Education

- BC School Superintendents Association

Other stakeholders

- Academics
- Community champions

Figure 5: Stakeholders in BC with an Interest in Healthy Built Environment Issues

During 2005-2006, "Healthy Planning Seminars" around BC focused on practical ways that key stakeholders could encourage healthier communities.[22] Following this early initiative, many **more organizations have been working to develop healthier communities,** including ActNow BC, Smart Growth BC, the Union of BC Municipalities and BC Recreation and Parks Association. A spring 2007 forum brought these groups together with Health Authorities, government ministries, planners, academics, First Nations and developers.

Those attending the Forum recommended forging a **Healthy Built Environment Alliance**. Its purpose is to:

1. Better understand the health impacts of the built environment, including support for research.

2. Ensure this understanding is transmitted to the design professions, the health professions, the development industry, policy makers at all levels (municipal, provincial and federal) and the general public who live in the environments created or regulated by the private and public sectors.

3. Support creation of healthier built environments and evaluation of their health, social, environmental and economic impacts.

22 Union of BC Municipalities. (2006). Report on Healthy Planning Seminars. UBCM: Vancouver, BC.

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As well as those outside the health care field becoming aware of the impact of their decisions on health, those working within the health sector need to understand the planning processes and policy environments so they can provide effective and appropriate input. Ideally, a contribution early in any planning process is the most useful. **Three examples will illustrate some of the ways health professionals are becoming involved in the planning process:**

1. The least formal process - **knowledge translation** - facilitates communication between researchers and practitioners. This paper and others produced by the Provincial Health Services Authority would be examples. As another example, learning modules developed on behalf of BC's Healthy Built Environment Alliance acquaint public health and urban planning professionals with one another's roles and work. Knowledge translation can also be tailored to specific population health concerns in the built environment, such as children's safety or rural issues.

2. With more direction, a **planned network** can link varied disciplines with a common interest into a 'community of practice'. Falls are a special concern for the elderly as well as those suffering from arthritis or visual or neurological impairment. Poorly maintained paved surfaces increase that risk contributing to pain, loss of independence and hospitalization. The impact can be significant: in 1998, falls accounted for 85% of the injuries in elderly people in BC, with costs estimated at $180 million. The *Adult Injury Resource Network* is a provincial project to reduce falls led by the University of Victoria. Such intersectoral initiatives can mobilize several disciplines to plan and implement evidence-based strategies.

3. **Health Impact Assessment** is a more focused and resource-intensive process to identify the health effects for a given project. It relates to business case development by providing an epidemiologic approach to examine health outcomes, which can then be costed using health economics methods. The National Collaborating Centre for Healthy Public Policy has completed a list and review of useful health impact assessment guides and tools that BC stakeholders can use to inform their work.[23]

23 National Collaborating Centre for Healthy Public Policy. (June, 2008). Health Impact Assessment Guides and Tools. http://www.healthypublicpolicy.ca/en/listeresumes.aspx?sortcode=2.1.1&id_article=214&starting=&ending=

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Conclusion

Richard Jackson, Director of the Centre for Disease Control (USA) National Center for Environmental Health summarizes the case for integrating our thinking about health and urban planning:

"Land-use decisions are just as much public health decisions as are decisions about food preparation. What, for example, are the implications for children with asthma of building yet another expressway? We must also question whether a fatality involving a pedestrian isn't actually the result of poor urban planning, thoughtless land use, or inferior urban design rather than 'simply' a motor vehicle crash. We must be alert to the health benefits, including less stress, lower blood pressure, and overall improved physical and mental health, that can result when people live and work in accessible, safe, well-designed, thoughtful structures and landscapes. We must measure the impact of environmental decisions on real people, and we must begin, in earnest, to frame those decisions in light of the well being of children, not only in this country but across the globe."[24]

It is important to focus on the long-term goal. This paper discusses the significant impact of the built environment on health. At the macro level this includes spatial planning, land use and transportation infrastructure. At a local level, the design, maintenance and use of buildings, public spaces and pedestrian networks are all important. In BC, early phases of work in this area have focused on tackling physical activity and nutrition. Now attention is turning to other health impacts such as injury prevention, noise and air quality. From whatever angle we approach the problem, the ultimate objective is a healthier lifestyle for all BC residents. Our vision is that diverse stakeholders can effectively work together towards building healthier built environments. The result will be more vibrant, liveable communities where all citizens benefit.

24 Jackson, RJ & Kochtitzky, C. (2001). Creating a Healthy Environment: The Impact of the Built Environment on Public Health. Washington, DC.

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If You Want To Learn More

We have gratefully used many helpful sources in compiling this report, as shown in footnotes throughout the paper. A sampling of others is listed below.

The Link Between Health and the Built Environment

- Provincial Health Services Authority. (September, 2007). *Creating a Healthier Built Environment in British Columbia.* http://www.phsa.ca/PopulationHealth

Chronic Illness, Health Equity and Determinants of Health

- BC Ministry of Health. Chronic disease management home page. www.health.gov.bc.ca/cdm/
- Public Health Agency of Canada. Centre for Chronic Disease Prevention and Control. http://www.phac-aspc.gc.ca/ccdpc-cpcmc/topics/integrated_e.html

Healthy Built Environment Initiatives

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