



SYNERGIA

URBAN ENVIRONMENTS AND HEALTH

A BRIEF REVIEW OF THE LITERATURE

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1. THE MODERN CHALLENGES OF URBAN ENVIRONMENTS AND HEALTH

Creating and sustaining urban environments that actively promote health are a key challenge for planners and policy-makers. Recognition of the linkages between urban environments and health date back to the mid-nineteenth century, a time when urban planning and the public health movement became closely connected in response to the diseases that emerged from poverty, poor housing, work conditions and lack of basic sewerage and water treatment. Yet these close ties that forged healthier living and working conditions became steadily less connected, to the extent that the worlds of planning, urban design and public health are now often very separate and relatively rarely co-operate in local or regional planning.

Today, in the early 21st century, 87% of New Zealanders reside in cities. The health issues that confront modern New Zealand cities are in some respects very different from their Victorian counterparts, but the need for a concerted and integrated response from planning, urban design and public health are key to securing an urban form that meets the new challenges. These new challenges are less to do with basic sanitation and disease control (although these remain relevant), and are more to do with the focus of modern planning where the private automobile is its centrepiece, and the health impacts and social dislocation that accompanies it. Modern public health advocates are particularly concerned with the impact of transport, housing development and land use planning on people's lifestyles and opportunities to maintain health throughout the life course (Public Health Advisory Committee 2008a). This has brought with it a widening of the public health sphere of focus from communicable diseases, such as cholera and tuberculosis, to non-communicable diseases such as heart disease and diabetes, and important health-related risk factors such as alcohol and safety.

A fundamental challenge is to build, re-build or retro-fit urban environments that counter the direction of 40 years of urban planning which have treated cars and public interest as one and the same. Undoubtedly, the car has increased the mobility of people and supported access to services and amenities across significant distances, but the car-oriented basis of urban planning has at the same time eroded the ability for people to live actively in their local environments. For many urban residents, accessing local services and amenities either necessitates private transport, or actively discourages active modes. The reliance on private transport has also brought with it rising levels of air pollutants with attendant health impacts (Macmillan & Woodward 2008). Furthermore, urban planning has a key role to play in improving safety across many

domains, not just in terms of traffic but also in the experience of urban environments that give rise to perceived or actual safety concerns.

Yet underlying the health challenges of the modern city is the distribution of health and ill-health between the haves and the have-nots, which have persisted across the centuries (Howden-Chapman 2008). In the modern context, inequities in health are not simply driven by socio-economic position, but are also felt across ethnic groups, age groups and by people with disabilities.

The Healthy Cities movement, led by the World Health Organization, provides international leadership in this area. There are currently three main themes that participating cities are expected to work on: health impact assessment, healthy ageing and healthy urban planning. In addition, all participating cities, of which Manukau city is one, are expected to focus on physical activity and active living (Public Health Advisory Committee 2008a).

This brief literature review examines the development of cities in New Zealand, and the linkages between urban planning and health. The review gives particular attention to four areas that have emerged as central to the health impact assessment of the Manukau Built Form and Spatial Structure Plan: liveability and vitality, mobility and active transport, safety and access.

2. URBAN FORM AND HEALTH INEQUALITIES/INEQUITIES

Over the past half-century, New Zealand, along with many other Western nations, has recorded improvements in overall levels of economic prosperity, measured by such economic indicators as GDP, as well as general improvements in health, measured by health indicators such as life expectancy and infant mortality (Minister of Health & Director-General of Health 2007). However, data collected since the 1970s indicates that despite improvements in the general health and wellbeing of New Zealanders, people of lower socio-economic status have poorer health. These inequalities persisted and widened into the 1990s, and it is only in recent years that the health 'gap' appears to have begun to close (Blakely et al 2007). Similar findings are evident in other countries, where a substantial weight of evidence points to a gradient of ill-health and mortality running through socio economic strata, with the poorest sections of the population tending to have the worst health outcomes (Davey Smith et al 2001).

The fact that health, like many economic and social goods, is not shared equally across the population has given rise to an expanding research agenda that seeks to uncover the causes of health inequalities, and develop strategies for their reduction. Because these health inequalities cannot be solely attributed to differences in health behaviours between social groups, the features of social and physical environments are likely to be independent contributors to health (Lantz et al 1998).

Explanations for determinants of health inequalities have often focused on the socio-economic dimension, in terms of such factors as income, education or occupational background. This is however only one element of inequalities. A wider view of inequalities, proposed by Townsend, would also examine access to material goods, facilities and amenities, and/or a lack of access to the customs, activities and relationships of an ordinary life (Townsend 1987). Taken in this sense of material deprivation, aspects of the urban environment, including access to transport, services and amenities; safety and social cohesion of an area; and its support to enabling active modes of transport, are potentially important determinants of health and health inequalities.

A further dimension to consider is that of equity and inequity. The concept of inequality simply describes the presence of a difference between people. Inequity, in contrast, points to a situation whereby the inequalities that arise are unfair, avoidable and unjust (Whitehead & Dahlgren 1990).

Considering equity impacts of urban design and planning requires an analysis of which are the populations that most benefit or suffer. These could include different income groups, ethnic groups, age, physical ability or disability, people who use different transport modalities (such as walking versus car travel) and geographic location (Victoria Transport Policy Institute 2008).

3. NEW ZEALAND'S CHANGING URBAN ENVIRONMENTS

3.1 HISTORICAL DEVELOPMENT OF NEW ZEALAND CITIES

Urban design and planning have a major influence over the shape of urban environments and the development of cities, with potential impacts on health and wellbeing. Urban design focuses on the physical form of a city; how the layout of buildings, roads, open spaces and physical infrastructure can be best devised so as to maximise economic opportunity and social wellbeing. Planning is primarily concerned with land use and the allocation of resources, and is actively concerned with balancing the interests of different organisations, communities and sectors.

Cities in New Zealand are a post-European settlement phenomenon, but have become focal points for the relationships between Maori, European and a great many other ethnicities over nearly two centuries. Although the popular image of European settlement of New Zealand is one of rugged individualism, where forested or swamp land was 'conquered' the land for farming, often ignored is that many immigrants wanted to settle in New Zealand's fast-growing towns either to speculate, to advance careers, or engage in trade and manufacturing (Hamer 1995). Some of New Zealand's early European towns and cities were planned from Britain by 'colonial reformers' such as Edward Gibbon Wakefield, and indeed, six such settlements were established in the 1840s and 1850s, in Wellington, Nelson, New Plymouth, Wanganui, Dunedin and Christchurch. These settlements struggled from the beginning, and failed to build a nucleus of settlers in any one place. The grandiose plans of Wakefield were replaced by pragmatic adaptation simply to survive the difficult conditions of settlement (Gardner 1992; Public Health Advisory Committee 2003).

Governor Fitzroy chose Auckland as the colonial capital in 1840, primarily for the availability of cheap land with harbour access (obtained from Maori), which could be on-sold to settlers, thereby providing crucial revenue for the government (Belich 1996; Gardner 1992; Hamer 1995). Transport within Auckland was generally by foot, and to other settlements by either horse or boat. This feature largely defined the urban form of the area, with people living in urban areas able to reach on foot the facilities and activities they needed. But over the course of the next century, rail development, followed by inter-suburb tram links, followed by motorway developments, opened up more and more of the surrounding countryside to urban settlement (Auckland Regional Growth Forum 1997).

The growth of private transport shaped New Zealand's urban form in the post-war years. From the 1960s to the 1990s, car-based planning was a strong feature of urban design, with public transport an increasingly lower priority. This trend has only begun to change since the 1990s, where new planning and design approaches, influenced by sustainability agendas, are emerging in New Zealand. There is a growing recognition in planning and urban design to plan at a human scale in a way that re-introduces people as primary owners of the landscape. Planning approaches such as Smart Growth promote intensified residential densities; clustering jobs and facilities closer together in mixed use centres; and connection between and within areas by transport systems that prioritise cycling, walking and public transport use (Badcock 2002; Barton & Tsourou 2000). These new models stress the importance of integration, connectivity and walkability, to improve sustainability and quality of life. They are reflected in planning and urban design initiatives at national, regional and local levels, such as the New Zealand Urban Design Protocol (Ministry for the Environment 2005), the Auckland Regional Growth Strategy (Auckland Regional Growth Forum 1999) and the Manukau Built Form and Spatial Structure Plan (Randles Straatveit Architects 2008).

Just as the physical form of New Zealand's urban areas changed rapidly in the post-war years, so too did the social shape. In the 1950s and 1960s, there was a significant shift of Maori from rural areas to urban areas, seeking employment and education opportunities, described as one of the most rapid processes of urbanisation experienced by any population in the 20th century (Gleeson & Dodson 2008). While there were many material benefits to the opportunities that came from urbanisation, this process created many challenges of social dislocation, and particular challenges for Maori who are mana whenua (whose iwi are from the Auckland region and have particular linkages to the land and the history). Social change continued in the region through the 1960s through to the 1980s with the arrival of Pacific people to the region, and Asian migration from the 1980s. Poverty and deprivation emerged as a significant urban problem in times of recession and high unemployment, from the late 1970s through to the late 1990s, nor has it been dispelled. With the emerging global recession, these issues are likely to again come to the forefront in the years to come.

3.2 CULTURAL LANDSCAPES AND MAORI PERSPECTIVES OF URBAN FORM

A further dimension to consider in understanding health impacts of urban form, in the New Zealand sense, is that of cultural landscapes. A cultural landscape is defined as a 'geographic area that includes cultural and natural resources associated with an historic event, activity, person or group of people'. The concept of cultural landscape acknowledges that in the Maori worldview, "all physical landscapes are inseparable from tupuna (ancestors), events, occupations, and cultural practices" (Hoskins 2008).

Rau Hoskins argues that the ability to maintain a cultural and spiritual connection to urbanised cultural landscapes is a key challenge for iwi and hapu whose tribal areas have been the subject of rapid development, and in many cases, degradation. He describes a Maori sense of place as being intrinsically connected with health and wellbeing, bringing together past, present and future; including physical and spiritual dimensions; providing Maori self-expression; and connecting whanau (family) and whenua (land) through whakapapa (ancestry) (Hoskins 2008). Such an approach links strongly with the Whare Tapa Wha model developed by Mason Durie, with its emphasis on taha wairua (spiritual wellbeing), taha hinengaro (mental and emotional wellbeing), taha tinana (physical wellbeing) and taha whanau (family wellbeing), which provide the cornerstones of approaches to improving Maori health (Durie 1998).

Further components of a Maori sense of place are the concepts of rangatiratanga (the ability to exercise control over one's environment) and 'kaitiakitanga' (the ability to exercise stewardship of resources). Hoskins

suggests five areas in which aspects of the urban physical environment can support a healthy or restored sense of place for Maori, particularly tangata whenua:

- Quality Treaty-based relationships between Maori, local and regional government, and Crown agencies
- Maintaining and protecting the integrity of the land and waterways, such as landmarks, traditional food gathering areas, wahi tapu (sacred areas), and restoring water quality.
- Recognising the significance of place names and naming them appropriately (including correcting errors of past naming)
- Developing in a way that is sympathetic to environmental relationships, tangata whenua histories, and cultural sensitivities
- Creating a process by which Maori can see themselves in the natural environment, by reinscribing cultural histories in the landscape (Hoskins 2008).

4. INFLUENCE OF FOUR HIA FOCUS AREAS ON HEALTH

4.1 LIVEABILITY AND VITALITY OF THE AREA

The first area that was highlighted by the scoping process for the HIA was enhancing the liveability and vitality of the Manukau CBD area.

The theme of liveability and vitality in urban life was picked up Jane Jacobs in the 1960s, and has underpinned progressive thinking on urban development ever since. Jacobs argued in favour of city forms that provide “intricate and close-grained diversity of uses that give each other constant mutual support, both economically and socially”. Jacobs sought an urban form with the aim of “generating exuberant diversity” in city life, through a multiplicity of functions; short street blocks; varying building typologies; and sufficiently dense concentrations of people (Jacobs 1961).

This theme is often discussed in the research literature in relation to the concept of ‘social capital.’ Social capital has a range of dimensions:

- the close ties developed through shared identities between people, through friendship, familial or other close networks (known as bonding)
- the more diffuse networks of association, where shared identity or social status is not a critical factor, such as local sports clubs, school boards and civic organisations (bridging)
- networks and institutionalised relationships between unequal agents, such as between community groups and local and central government, which transcend horizontal ties within communities to

include the ties between people and government (linking) (Putnam 1995; Szreter 2002).

Research to date has focused on the potential of urban design to support the bonding and bridging forms of social capital, in terms of such factors as sense of community and social ties. There is evidence from qualitative research of the role of area history, opportunities to meet others and access to community services, facilities and amenities in supporting community and social interaction (Cattell 2001; Forrest & Kearns 1999; Oldenburg 1997; Witten et al 2003). However, it is not clear from the research if it is possible to design environments to improve community and social interactions.

A review of studies suggests that features of urban sprawl that can weaken sense of community include leapfrog development (where existing areas of development are bypassed in favour of more distant greenfield development); low density development, and transport dominance by motor vehicles. There is also evidence to suggest that the amount of time individuals are required to spend driving to work significantly reducing the development of neighbourhood social ties. Other studies suggest that important predictors of sense of community are perception of opportunities for social interaction and having a safe and interesting walk environment. There is also evidence from a US study to indicate that residents of urban areas with lower levels of access to greenspace tended to report more aggression and higher levels of mental fatigue (Public Health Advisory Committee 2008b).

4.2 MOBILITY AND ACTIVE TRANSPORT

Mobility and active transport was identified as an important focus during the scoping process, to explore how the plans for the city centre area can embed active modes of transport across the CBD, and support enhanced mobility for those with restricted mobility options, such as older people or people with disabilities.

Over the past decade, there has been a growing body of evidence linking urban built environments with physical activity. The characteristics of neighbourhoods, such as whether they are developed around a traditional grid pattern, or follow the more circuitous patterns of modern developments (such as cul-de-sacs), and the extent to which they are built around public transport networks, have been shown to be important predictors of active transport. The degree of walkability of a neighbourhood also impacts on people's frequency of undertaking walking activity and other forms of moderate physical activity (Public Health Advisory Committee 2008b). Research from Auckland has found that people who live

along the most connected streets are up to seven times more likely to walk or cycle to work than those who live in the least connected streets (Badland et al 2004).

Available evidence indicates that land use mix, where there is a variety of ways in which land is utilised (as compared to areas that are zoned for single uses such as housing, commercial or open space), is positively linked with active travel (Public Health Advisory Committee 2008b).

These findings suggest that people are willing to take advantage of active transport opportunities where they are made available, and that the way the urban environment is designed is an important predictor of use. A limitation of the studies to date is the lack of data to assess if self-selection is taking place; that is, whether people who prefer to use active transport are choosing to live in denser, more mixed use neighbourhoods.

4.3 SAFETY

The third area of focus for the HIA is safety, spanning security, road safety and countering perceived hostile environments.

There are many features of urban form that are able to contribute to traffic safety. The single most important causal factor in traffic accidents is the amount of driving that people do. Areas with high traffic volumes are substantially more likely to be areas of high traffic injuries and fatalities. Speed is also strongly linked to safety; an increase in the average speed from 30km/h to 50km/h is associated with 7.6 times the risk of pedestrian injury. Data from America indicates that pedestrian fatality rates are higher in areas seen as more sprawling. There is also evidence to indicate that changes to urban environments, such as reducing multi-lane roads to single carriageways, traffic calming measures, pedestrian signals and raised medians also support fewer pedestrian injuries (Public Health Advisory Committee 2008b).

Available evidence indicates that perceptions of safety play an important role in determining people's willingness to undertake physical activity, particularly among older people, women and children. There are also ways in which the built environment is able to promote a sense of safety and have the potential to deter crime. These "defensible space" features include lighting, good visibility, places to sit outdoors, direct relationship of buildings to the street, protecting access routes and destinations, and territorial symbols such as neighbourhood watch signs and alarm signs (Loukaitou-Sideris 2006).

4.4 ACCESS

Access is the fourth focus area for this HIA. In the scoping workshop, dimensions of access included concepts of connectivity across the Manukau CBD area, examining the features of the CBD that will attract them to the area, and supporting a sustainable CBD.

Access to and use of local resources such as health services, grocery shops and parks or open spaces, can provide opportunities for health, through use of the services themselves (Field 2004). Lack of service or amenity access, or an obsolete or inappropriately designed built environment, can similarly act as a constraint on achieving health (Barton & Tsourou 2000; Giles-Corti & Donovan 2002; Parks et al 2003). For example, access to supermarkets and grocers enable people to reach sources of food, but lack of access to food outlets, particularly supermarkets, can widen health inequalities by forcing those with limited mobility options to use lower quality and/or more expensive food options. Similarly, access to primary health care services, are important for preventing the ongoing development of ill-health in individuals and communities.

Venues such as community centres, schools, parks and open spaces, health facilities and shopping facilities, may enable interaction between people that supports a sense of belonging and participation in a community (Baum 1998; Field et al 2004; Warin et al 2000).

For those with limited mobility options, an environment that supports the passage of people with restricted mobility is a key resource to enable service access and community participation, along with access to transport services (Denmark 1998; Field 2004).

For people on low incomes or with mobility restrictions, public transport is a particularly important enabler for service access. It is also important that the transport options available are able to cater for people with mobility restrictions, such as buses that can 'kneel', and infrastructure that can support accessibility (such as bus stops and stations, safe pedestrian crossings and accessible platforms (Quigley et al 2006). Walkways and cycleways connecting residential and service areas are pivotal for supporting active transport in urban environments (Barton & Tsourou 2000).

The perceived or real dangers of roads, pavements, walkways and public transport are important influences on people's willingness to access services, particularly for women and elderly. Perceptions of safety are also important determinants of parents' willingness to allow their children to walk to school (Public Health Advisory Committee 2003).

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