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The future health and environmental sustainability of South East Queensland: an evaluation of the Regional Plan

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Given the challenges of climate change and population growth, it is essential for planners to think about the health of people and the planet in an integrated way. Until recently the profession has focused on environmental sustainability without necessarily making the link to human health. This is despite mounting evidence for the critical role urban planning plays in supporting human health and wellbeing. Walkable and mixed use urban areas, active and public transport modes, open space and locally sourced fresh food, together with safe and well-designed neighbourhoods, are the foundations of both environmental and human health. Regional plans set the framework within which these outcomes can be realised. This paper examines how the *South East Queensland Regional Plan 2009–2031* proposes to manage human health in relation to environmental sustainability. Using a detailed textual analysis of the Plan, the paper investigates how well the Plan incorporates a comprehensive suite of inter-sectoral provisions that will build the strategic policy foundation for supporting human health and environmental sustainability in a high growth scenario. Further, consideration is given to how the specific provisions will translate into future actions and development requirements for the Region.

Keywords: healthy planning; public health; environmental sustainability; metropolitan strategic planning; *South East Queensland Regional Plan*

Introduction

Creating an environmentally sustainable planet is the most challenging problem of our age. Its complexity is profound, demanding sophisticated and integrated solutions across multiple disciplines. An urban environment that supports both ecological and human health is a key component of this integrated approach. Contemporary urban planning has a well-established focus on environmental health. What is not so widely recognised is the role the discipline can play in improving and sustaining human health. Urban planning, in fact, originated out of concerns for human health. The creation of zoning to separate polluting industrial uses from the places where people lived was a significant public health initiative of the 19th century industrial city (Barton, 2005; Thompson, 2007). Early definitions of planning embodied objectives related to improving the health of the community (Abercrombie, 1959, p. 104), with specific reforms in housing, water supply, sewerage systems and the provision of green space (Corburn, 2007, p. 688). The suburb, central to the Garden City Movement, was typified as the healthiest place to bring up families away from the squalor and poverty of the densely packed inner city (Alexander, 2000). And while the professions of planning and health initially held similar views of the city as problematic for health, with the unfolding century, there was a parting of the disciplines. This contributed to 'health disparities between urban and suburban populations and a failure to recognize the connections between, for example, land-use decisions and public health' (Corburn, 2007, p. 688).

The reconnection of health and planning has been championed by practitioners and policy makers in public health for some time. The ideas embraced by the term 'healthy planning' originated from the World Health Organisation's 'Healthy Cities' strategy, which incorporates the seminal 1986 *Ottawa Charter for Health Promotion* (WHO, 2010a, 2010b) with its evidence on the social determinants of health (Wilkinson and Marmot, 2003). The Healthy Cities approach is based on the understanding that urban environments affect citizens' wellbeing in complex ways, and that comprehensive, inter-sectoral policies and actions are needed to bring about change.

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Initially slow in influencing the urban planning process, healthy planning concepts are now being seriously considered by the profession (see for example, Crawford *et al.*, 2010). In Australia, the Federal Government's Major Cities Unit has identified human health as a key issue underpinning the liveability of the nation's urban regions, and the role of the built environment in preventive health has been widely acknowledged:

> Urban environments are strongly associated with public health concerns, with contributing factors being water and air quality, noise, temperature, access to open and green space, opportunities to exercise, and opportunities to have social interaction. (Infrastructure Australia, 2010, p. 94)

The Council of Australian Governments' inclusion of health, liveability, and community wellbeing as a national objective, and as criteria for future strategic planning of capital cities, is further acknowledgement that health needs to be brought into contemporary planning policy (COAG, 2009).

Practising planners are also responding through the development and implementation of planning policy. It is our view that the language in which this policy is couched is an important indicator of belief in, and commitment to, the positive role that planning can play in creating supportive social and physical environments for health. The language in the plans includes the concepts dealt with, their manner of presentation and the context within which the words, statements and ideas are framed. It is not sufficient, for example, to merely imply that a plan will address health. It needs to be specifically affirmed in the document, with policies articulated in order to drive the framework for subsequent actions in lower order plans. This paper therefore presents a detailed content analysis of a comprehensive planning document – the *South East Queensland Regional Plan 2009–2031* (SEQ Plan). Using accepted qualitative methodological protocols (Silverman, 2006; Gaber and Gaber, 2007), the analysis assesses the extent to which health is embedded in the Plan. This analysis is part of the rapidly growing interest in planning's ability to provide supportive environments for human health against the broader context of environmental sustainability. The current study does not, however, assess the success of the Plan's delivery.

In the next section of the paper we present an overview of the mounting evidence linking the built environment and health. While there are consistent themes in this research, it is a complex body of literature straddling different research traditions and an even more complex human–environment relationship. Nevertheless, the research provides important

insights into how place can support human, as well as environmental health. Accordingly, a strong case can be made that these issues should be taken seriously by planners. This discussion is followed by our detailed textual analysis of the SEQ Plan. The evaluation here utilises the CHESS principles – a comprehensive suite of inter-sectoral provisions that build the strategic policy foundation for supportive environments for human health and environmental sustainability (Thompson and McCue, 2008). The paper concludes by considering how the specific provisions will translate into future actions and development requirements for the Region.

Health and planning

There is mounting concern about rising rates of long term physical and mental health conditions in urban and rural populations across the globe (Daar *et al.*, 2007). Known as chronic non-communicable diseases, they are exacerbated by low levels of physical activity and high rates of obesity. In turn, these are modifiable risk factors for ailments including heart disease, diabetes, colon and breast cancers, hypertension, bone and joint diseases, and depression (Haskell *et al.*, 2007). Medical interventions are limited in tackling such conditions because they are related to a variety of complex factors (Dixon and Broom, 2007), including the design and management of the built environment (Barton and Tsourou, 2000; Frumkin *et al.*, 2004; Gebel *et al.*, 2005; Mead *et al.*, 2006; Burke *et al.*, 2008; Corburn, 2009). Research indicates that segregated land uses, disconnected streets, low residential densities, poor public transport and limited opportunities for local employment, promote motor vehicle dependency and physical inactivity. Studies have also shown that it is more difficult to access healthy food in these environments, particularly in poorer communities (Handy *et al.*, 2002; Saelens *et al.*, 2003; Lee and Moudon, 2004; Owen *et al.*, 2004; Badland and Schofield, 2005; Saelens and Handy, 2008). Conversely, an environment characterised by mixed uses, connectivity of both streets and transport networks, variable densities, and infrastructure designed to facilitate active transport such as cycling and walking, encourages physical activity (Handy *et al.*, 2002; Saelens *et al.*, 2003; Giles-Corti *et al.*, 2005; TRB, 2005; Frank *et al.*, 2007; Badland *et al.*, 2008; McCormack *et al.*, 2006; Aytur *et al.*, 2007; Garden and Jalaludin, 2008) and allows access to a diversity of goods and services, including healthy food (Coveney and O'Dwyer, 2009). In turn, these qualities make positive contributions to physical and mental health, the latter associated with feeling safe

and socially connected within the neighbourhood (Araya *et al.*, 2006; Lee and Moudon, 2008).

Contemporary planning policy provides an effective mechanism to address the various elements of the built environment that impact upon human health. The use of visions, goal setting and specific provisions in plans has been identified as a critical first step (Morris, 2006; NHS, 2009). In particular, comprehensive, long-term plans play a pivotal role – not only due to their strategic and spatial significance, but also because of their potential to guide subsequent plan making at sub-regional and local levels (PHLP, 2009; Wheeler and Thompson, 2009). Furthermore, these plans have been identified as an effective tool in raising the profile of public health within the planning profession (Stair *et al.*, 2008). This can be achieved by illustrating the health implications of the plan's policies and linking these to actions designed to produce positive health outcomes (NHS, 2009).

However, while the inclusion of health provisions in plans is growing, to date only a few studies have examined this work. Those that are available tend to be limited in their scope and/or depth of analysis – either focusing on one particular plan (for example, Queensland Government, 2005; WSROC and Gethin, 2007; Thompson and Wheeler, 2009), or simply canvassing a selection of plans using a broad-brush approach (for example, Thompson and Gallico, 2005; Mead *et al.*, 2006). Nevertheless, each of these studies has made a contribution to the field, making the case for the incorporation of health at every level of the plan and policy-making process.

Our paper builds on and augments this existing scholarship. It mirrors the research methodology used by Thompson and Gallico (2005) but uses a more highly developed and sophisticated set of criteria for an in-depth analysis of the Plan for Australia's fastest growing urban region – South East Queensland. Our research also suggests that there has been progress in the incorporation of planning provisions to support human and environmental health.

The CHESS principles

There are different schemas available to assist professionals who want to adopt comprehensive and intersectoral approaches to health. The emphasis is on improving the different ways in which physical and social environments encourage and support community wellbeing. The CHESS principles provide a useful template for urban planners and health practitioners to use in addressing individual and environmental wellbeing at the local, regional and national levels (Thompson and McCue, 2008). CHESS embodies four over-arching principles – Connected Environments, Healthy Eating Environments, Safe Environments and Sustainable Environments – that underpin the achievement of healthy people and places. Table 1 summarises these interconnected principles.

Methodology

The first stage involved determining criteria for evaluating the inclusion of healthy planning provisions in the SEQ Plan. This established the coding frame for

Table 1. CHESS principles.

CHESS principle	Description
Connected environments	Connecting people to basic local needs such as shops, schools, services and recreation to facilitate active transport (cycling or walking). For needs beyond the local area, connection to close-by, reliable, cheap and safe public transport. Good street connectivity to encourage physical activity, social interaction and reduce demand for private vehicles.
	Urban planners and health professionals working in connected ways. Includes interdisciplinary approaches to policy development and strategic actions in both health and planning. Connecting government, professional and NGO sectors with communities.
Healthy eating environments	Equitable access to healthy, affordable and locally grown food. Retention of viable agricultural lands close to urban centres. Encouragement of local produce markets, community gardens, edible urban landscapes and convivial community eating areas. All of these reinforce physical activity and social interaction.
Safe environments	Personal safety in the public sphere to encourage community interaction and reduce social isolation and loneliness. This includes traffic safety, eliminating trip hazards in pavements and public areas, and providing adequate sun protection in parks, open plazas and schools.
Sustainable environments	Ecological and environmental sustainability to reduce air, water, soil and noise pollution. Social sustainability to address equity issues such as housing affordability, employment opportunities and accessibility to support all community members including children, the aged and those with a disability. Benefits for both environmental and human health.

the content analysis (Silverman, 2006, p. 159). We selected the CHESS principles as the basis of the coding frame. This choice was based on familiarity with CHESS, our knowledge of the comprehensive nature of the principles, and the fact that they address both environmental and human health factors – a key relationship we wanted to investigate in the SEQ Plan. It was also decided to review related terminology associated with health and active living – the latter being a critical component of supportive environments for health. Accordingly, we selected a total of eight key words for the content analysis (see Table 2).

The first two terms (health and wellbeing) cover terminology fundamental to the research. The next four (connect, food, safe and sustainable) are the 'environments' that constitute the CHESS principles. We used the term 'food' in relation to the 'healthy eating' CHESS principle to ensure a comprehensive analysis of this issue given that we also searched for 'health'. A search for the words 'eat' and 'eating' was also undertaken and revealed a zero count. The remaining terms (walk and cycle) represent key components of active transport. Variables of the aforementioned terms were also included as part of the content analysis (see Table 3).

Having determined the coding frame, we then systematically examined the SEQ Plan for occurrences in each category using a standard content analysis approach. This method enables the researcher to count frequencies of particular words or phrases facilitating an analysis of the occurrences for surface (manifest) and underlying (latent) meanings (Rose, 2001; Silverman, 2006; Gaber and Gaber, 2007). For each term (and its variables), a thorough word search of the Plan was undertaken. Each occurrence was noted and tabulated, with reference made to its location and context. Here we recorded every occurrence found in titles and headings (at any level), in body text, in text dot points, and in illustrative text found in captions for diagrams, graphs and illustrations. We omitted any terms that were clearly outside the healthy planning framework.

Table 2. Content analysis terminology.

Terminology	Categorisation
Health	Fundamental health terminology
Wellbeing	
Connect	CHESS principles
Food (Healthy Eating)	
Safe	
Sustainable	
Walk	Active transport
Cycle	

Table 3. Variables included in the content analysis word searches.

Terminology	Variables
Health	healthy, healthier and healthiest
Wellbeing	well-being and well being
Connect	connects, connected, connecting, connectivity, connection(s), connector(s), interconnect(s), interconnected, interconnectivity, interconnector, reconnect(s) and reconnection
Food	foods
Safe	safety, safer, safely, safeguard, safeguarding, safeguarded and unsafe
Sustainable	sustainable, sustainably, sustainability and unsustainable
Walk	walks, walking, walker(s), walkway(s), walkable and walkability
Cycle	cycles, cycling, cyclist(s), cycleway(s), bicycle and bicycling

Once the search for the word 'health' had been completed, each occurrence was placed into a sub-category depending on its specific context. This allowed for more detailed analysis of the Plan in terms of the priority and focus of health-related initiatives, and the degree to which such initiatives did or did not incorporate healthy planning principles. Table 4 details the categorisation of the 'health' terminology.

This analysis produced a total of 10 detailed and lengthy tables – one for each of the different terms (including the three 'health' terms) – which were then used to facilitate the in-depth (or latent) content analysis. Each table included every section of the Plan, from 'cover, foreword and contents' to its conclusion. For every occurrence of the search term, we included the page number of the Plan, the type of provision (for example, regional vision, strategic direction, principle, policy, program, and so on) and the context of the search term. The latter incorporated the full sentence, phrase or heading in which the word occurred. The tables were also used to check cross linkages to assist identifying related provisions that did not contain our specific search terms.[1] These data sheets were used to compile the total word counts, which are presented in summary form in Table 5.

Inclusion of healthy planning provisions in the SEQ Plan: the content analysis

We now present the results of the content analysis, evaluating how well the SEQ Plan addresses health, both human and environmental. As background, we provide a brief overview of the Plan itself, highlighting its historical context, process of production,

Table 4. Categorisation of 'health' terminology.

Category	Description
1	Occurrences relating to human health in general and/or principles of healthy planning. This includes mention of the term within the context of issues such as environmental sustainability, safety, access to food, improving connectivity, and other associated health considerations embodied in the CHESS principles.
2	Occurrences relating to sick care facilities, medical centres and/or health services. This also encompasses health investment, research, assets and employment.
3	Other occurrences. Includes any mention of the word 'health' that is not connected to human health or healthy planning principles. For example: 'healthy business competition'.

overarching aims and objectives, and structural organisation.

The Queensland Department of Infrastructure and Planning (DIP) released the SEQ Plan in July 2009 following community consultations. The Plan is the second for the Region – the first being the *South East Queensland Regional Plan 2005–2026* (OUM, 2005). In response to higher than expected population growth, the 2005 Plan was reviewed earlier than expected (DIP, 2008). The aim and scope of the 2009 Plan is similar to the first Plan. The 2009 Plan continues to provide the planning framework in which growth and change in the Region can be sustainably managed: the aim is to 'protect and enhance the quality of life in the region' (DIP, 2009, p. 4). The Plan is based on a projected population of 4.4 million by 2031 (an increase of 1.6 million residents) and an additional 754,000 residential dwellings to house this burgeoning population (DIP, 2010). The Region extends from the NSW border in the south through the Gold Coast and Brisbane to Noosa in the north, and as far westward as Toowoomba.

Table 5. Content analysis.

Section of plan	Health Cat. 1	Health Cat. 2	Health Cat. 3	Wellbeing	Connect	Food	Safe	Sustainable	Walk	Cycle
Cover, Foreword & Contents	2	2	1	–	–	–	1	5	–	–
A. Introduction	–	–	–	–	1	–	–	1	–	–
B. Regional Vision & Strategic Directions	6	1	–	–	4	–	2	7	1	–
C. Regional Land Use Pattern	–	34	–	1	11	–	1	6	4	6
D. Regional Policies Preamble	–	–	–	–	–	–	–	1	–	–
D1. Sustainability & Climate Change	6	–	–	1	1	–	1	31	4	4
D2. Natural Environment	6	–	–	1	8	–	1	5	–	–
D3. Regional Landscape	6	–	–	1	13	1	1	5	–	–
D4. Natural Resources	2	–	–	2	–	3	–	7	–	–
D5. Rural Futures	7	–	–	–	–	3	–	18	–	–
D6. Strong Communities	25	–	1	5	8	3	19	–	2	3
D7. Engaging with Aboriginal & Torres Strait Islander Peoples	1	–	–	2	2	–	–	1	–	–
D8. Compact Settlement	1	4	–	–	15	–	6	10	14	11
D9. Employment Location	–	22	–	–	–	–	–	2	–	–
D10. Infrastructure	1	2	–	2	–	–	3	2	–	1
D11. Water Management	25	–	–	2	3	1	3	9	–	–
D12. Integrated Transport	2	–	–	–	21	–	3	8	14	16
E. Implementation & Monitoring	–	–	–	–	–	–	–	8	–	–
F. SEQRP 2009–2031 State Planning Reg. Provisions	–	–	–	–	1	–	1	1	–	–
Glossary, Acknowledgements & Bibliography	4	–	1	–	–	1	–	7	2	2
Total	94	65	3	17	88	12	42	134	41	43

An important characteristic of the *Plan* is its inclusion in the statutory planning system. In 2004, Queensland's *Integrated Planning and Assessment Act 1997* (IPA Act) was amended. This gave regional planning statutory force, signifying the end of voluntary regional planning initiatives. The 2009 Plan was prepared in accordance with the IPA Act. This Act has since been superseded by the *Sustainable Planning Act 2009*, which sustains the statutory nature of the Plan. As was the case under the IPA Act, local governments within the Region are required to amend their planning schemes to reflect the content of the Regional Plan.

Structurally, the Plan comprises six major sections. The Introduction puts the Plan in context and explains its purpose and extent. The next section focuses on visions and strategic directions. This is followed by an overview of land use patterns to conceptualise the spatial framework. The Plan then introduces the regional policies that broadly define the framework for managing future growth sustainably. This constitutes most of the document. The policies are organised under 12 key headings (D1–D12 as listed in Table 5). The final section of the Plan covers implementation and monitoring of its desired outcomes, policies and programs. The Plan is to be reviewed on a five-yearly basis to ensure that it adequately responds to future planning requirements.

Content analysis

To facilitate a comprehensive assessment of the nature of the health provisions in the Plan, we include commentary on the use of all terminology – those embodied by the CHESS principles, and those under the headings of 'health terminology' and 'active transport' (as shown in Table 2). Table 5 includes the final word counts for all the selected terms.

Fundamental health terminology

Health and wellbeing is a strong element of the Plan. There is a total of 94 occurrences of 'health', and 17 of 'wellbeing', that directly relate to healthy planning principles. The count for Category 2 'health' (medical and sick care facilities) totals 65, with two other mentions of 'health' in Category 3. In total there are 162 occurrences of 'health' – the highest number of any of the search terms investigated here.

Human health has a very strong presence in the Plan. This is related to the broader context of the Queensland Government's vision for the State of making the population healthy (p. 10). 'Health' is included as the first Regional Vision of the Plan: 'communities [that] are safe, healthy, accessible and inclusive' (p. 10) – and it is also a Strategic Direction,

providing a strong link between urban planning and population health. The Plan (p. 12) acknowledges that:

Healthy communities will be shaped by the physical and social environment, including:

- suitable areas for physical activity and exercise
- well-connected communities with active transport networks
- accessible public spaces for community activity
- access to facilities and services
- the development of strong community networks.

Together, these provisions embody key healthy planning principles, further reinforced in specific strategies throughout the document. Regional Policy 6 (Strong Communities) is the focus for this, particularly in relation to the creation of socially cohesive, equitable and inclusive communities. Encouragingly, the critical role of the environment in supporting healthy behaviour such as physical activity is evident in this policy. Mention is also made of housing affordability, public transport, preventable diseases, obesity, healthy eating and excessive sun exposure. This provides an opportunity for lower order plans to fill in the detail for enacting such policies at the local level.

Importantly, human health is also related to different environmental qualities. This embodies environmental sustainability, water quality, noise and air pollution, and the availability of green open space for recreation and liveability. Both physical and psychological wellbeing are mentioned (1.1, p. 40). However, it is disappointing that Regional Policy 1 (Sustainability and Climate Change) has only one instance of a human health link (p. 40). The importance of environmental health as it is multifariously linked to sustainability, climate change, rural and regional landscapes, and water management is nevertheless a recurring theme, although it needs to be strengthened in relation to human health. Species survival, maintenance of habitats and ecological systems are part of this policy agenda. Safety is a major focus of Regional Policy 6 (Strong Communities) and will be discussed later in relation to the CHESS principles.

Finally, in connection with this analysis of basic health terminology, the Plan does relate urban planning policy to human health. It has specific regional policies on 'Compact Settlement' (Regional Policy 8) and 'Integrated Transport' (Regional Policy 12). Nevertheless, the latter has only two mentions of 'health', which is surprising given the role that transport has in promoting physical activity, and in the reduction of greenhouse gas emissions. Containment of urban growth within existing settlements areas is embodied in Desired Regional Outcome 8 (p. 90) where the benefits for agricultural lands, the

natural landscape and public recreation are extolled. Transport viability and alternatives to private motor vehicle use are also mentioned (p. 90). Conversely, the Plan advocates separation of residential development, intensive agricultural lands, industrial activities and major transport routes to ameliorate the impact of air and noise pollution (2.3, p. 53). The stated objective is to reduce adverse health impacts, but this could be interpreted as conflicting with the compact settlement aims of the Plan.

CHESS principles

Connected environments. The Plan recognises the importance of physical and social connections with 88 occurrences of the term. Connecting communities across the Region is cited in different ways, including people connecting with the built environment as a facilitator of active transport, social interaction, belonging and a sense of place. The Plan attempts to strengthen these connections through specific regional policies, focusing on transportation modes and community building infrastructure. Linked with this is the creation of healthy and safe communities. The notion of a 'spiritual connection' with green spaces is mentioned (3.4, p. 62), as are historical and cultural connections to the land. The link is made between communities and public spaces as an important aspect of healthy planning. It is interesting to note that this is done in the context of retail development. 'Accessible spaces for social interaction' and 'active street frontages' are associated with the development of social capital (8.7, p. 100), and standalone shopping complexes are not supported (8.8, p. 100). Other recurring themes include the need for connected transport networks, including the early provision of services to support urban growth and reduce car dependency, together with connections between new and old development, and the proximity of public transport nodes to new mixed developments. While the reality of private transport connections via roads in rural localities is acknowledged, Regional Policy 12 (Integrated Transport) promotes public transport, and connections for cycling and walking. These are all important aspects of a healthy locality. Environmental connectivity is also a strong element of the Plan. This aspect of the Plan is addressed below in the discussion of 'sustainability'.

Connected ways of working. The Plan is largely silent in relation to this CHESS principle. It does touch on the value of engaging with the community when making decisions, specifically mentioning the involvement of Indigenous peoples (7.2, p. 87). The contribution of the State's Health Department is acknowledged in the document, which is an indicator of inter-sectoral collaboration. Nevertheless, the extent of this as a 'connected way of working' would need to be further investigated. Indeed, if the processes of engaging other professions is discussed elsewhere, then our critical judgment of the Plan on this issue may be unfair. Even so, incorporating health into planning policy does require interdisciplinary approaches and it is important that visions for such working arrangements are included in comprehensive plans. Integrated approaches are acknowledged in the national 'Healthy Spaces and Places' resource as enabling 'joined-up thinking and policy alignment, which is essential for a coordinated, effective response' (ALGA *et al.*, 2009). The Plan needs to pay more attention to this, as it is vital to its efficient and effective implementation.

Healthy eating environments. This receives scant attention with only 12 relevant occurrences. There are mentions of 'food' as an economic product, recognising its key role in the Region's economy. The importance of retaining viable agricultural land in close proximity to populations is also noted and a link is made here to rising energy costs contributing to the high price of fresh food (5.2.4, p. 74). Food security is also mentioned at this point. In the 'Healthy and Safe Communities' notes (6.3, p. 81), the Plan recognises the contribution that healthy eating plays in human health: 'sedentary lifestyles and poor diets result in high obesity levels and poor health'. This is associated with the need to protect agricultural land and the development of urban gardens and local markets, which will 'increase access to fresh, local, seasonal produce' (p. 81). This is not, however, developed further. On the positive side, its mention is welcomed and will provide scope for lower order plans to explicitly develop policy on this issue. Overall, we consider that the Plan needs more inclusion of innovative clauses to encourage healthy eating and food security for the Region.

Safe environments. This CHESS principle is well covered with 42 occurrences – the majority (19), not surprisingly, in Regional Policy 6 (Strong Communities). Safety has been identified as a major determinant of both individual and community health. Safe drinking water, management of sun exposure, together with walking and cycling routes, are all included. There is a strong link to urban design and the use of Crime Prevention Through Environmental Design (CPTED) and Smart Growth in new urban development – be it broad-hectare (green-field) or infill (brown-field). Safety is also related to traffic and personal safety – both the reality and perception of safety as modifiers of behaviour. Activating streets

and public areas is acknowledged as a key aspect of safety underpinning healthy planning.

Sustainable environments. The Plan is driven by the imperative to create sustainable environments. The use of sustainable terminology is very high (134 occurrences). The initiatives associated with sustainability are primarily linked to the health of the natural environment, rural lands or the economy rather than that of humans. In fact, there is no occurrence of the term in Regional Policy 6 (Strong Communities) – the policy that has the highest mention rate of 'health'. And while there is some association between sustainability and the health benefits of compact development and integrated transport, this link needs to be much more explicit. The failure to connect sustainability and health is of concern, given the mounting evidence from health professionals of the co-benefits of climate change adaptation and human health improvements (see for example Capon and Dixon, 2007; *The Lancet*, 2009). The inclusion of ongoing monitoring may mean that this can be incorporated in the future, and we call for this to be addressed at the first possible opportunity.

Active transport

The final search terms – 'walk' and 'cycle' are relatively frequent – with 41 and 43 occurrences respectively. The words are often used together (for example, cycling and walking routes) with links to sustainability, compact development and, indirectly, human health. There is an important relationship established between accessing transport hubs by walking and cycling and reduced private car usage in the Region. Cycling as transport and recreation is addressed in the Plan. It is proposed to link different 'regional activity centres' using 'quality public transport services, cross-city roads, and walking and cycle networks' (p. 18). Quite what the transport priority will be is unclear, and it may well be that roads are still privileged. Good design, however, can mean that new roads incorporate safe and efficient cycle ways. The Plan does connect urban design and active transport in different contexts. On page 46 it is related to oil vulnerability and later (6.3, pp. 80–81) cycling and walking are linked to health. With oil vulnerability growing (and noted in the Plan) the encouragement of cycling as a viable form of transport, as well as a recreational activity, will be an emerging imperative requiring adjustment as the Plan is monitored and evaluated.

Conclusion: prospects for the SEQ Plan

The SEQ Plan is a strong and comprehensive document that establishes sustainability as a key policy agenda for Australia's fastest growing urban region. Managing this growth will be a formidable challenge, with recent projections suggesting the population of the Region could double within 50 years (DPC, 2010). This raises significant questions about the ability of both built and natural environments to accommodate a population married to vehicle dependency and a high consumption lifestyle. The solutions to such challenges have implications for the future of the Region, and the nation as a whole. As Australia's 'bellwether region', South East Queensland is 'an increasingly important crucible of change that captures and reflects many of the growth management dilemmas and opportunities facing the Australian settlement system, especially at a metropolitan level' (Gleeson and Steele, 2010, p. 14). In a climate where environmental sustainability, health and metropolitan planning have all risen to prominence in political, professional and public discourse, South East Queensland will become an exemplar of impending nation-wide challenges and how they might be addressed.

On a number of fronts, the SEQ Plan is responding to this call. Building from a sustainability base, the Plan has an impressive raft of health-related provisions that acknowledge the importance of both physical and social environments in supporting 'strong and healthy communities'. The Plan's limitations lie more in the absences of linkages between health and sustainability and connected ways of working. The Plan sets the framework for lower-order policies and development controls, legitimising the incorporation of healthy planning principles. And even where the SEQ Plan is not as explicit about health as we believe it should be, it has the potential to improve the environment as a supportive setting for physical activity, particularly in relation to cycling and walking. Provisions around healthy eating need to be reinforced, especially as many initiatives such as public edible spaces are operationalised at the local level.

Ultimately, the effectiveness of any plan can only be judged by its achievements. Nevertheless, the language of the SEQ Plan is an important preliminary step in establishing the framework and inspiration for action. Given the statutory status of the Plan, we can have some degree of optimism that the Plan's words will translate into real actions. If the shortcomings documented through this analysis can be addressed, we are confident that the SEQ Plan will be able to deliver, inspiring new approaches and taking the lead in promoting environmental and human health as a critical policy issue for the Region.

Note

1. The tables are too long to include here, but are available from the corresponding author upon request.

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