



THE CONTRIBUTION OF PUBLIC LAND TO MELBOURNE'S LIVEABILITY

AUGUST 2009

REPORT PREPARED BY

MCCAUGHEY CENTRE, UNIVERSITY OF MELBOURNE

WITH

THE NICHE RESEARCH GROUP, DEAKIN UNIVERSITY &

THE CENTRE FOR DESIGN, RMIT UNIVERSITY

FOR

THE VICTORIAN ENVIRONMENTAL ASSESSMENT COUNCIL

The McCaughey Centre:

VicHealth Centre for the Promotion of
Mental Health & Community Wellbeing

Melbourne School of Population Health
The University of Melbourne

THE CONTRIBUTION OF PUBLIC LAND TO MELBOURNE'S LIVEABILITY

FINAL REPORT

By

Sue West, McCaughey Centre, University of Melbourne

Cait Jones, McCaughey Centre, University of Melbourne

With Key Advisors

Associate Professor Mardie Townsend, PhD, NiCHE Nature and Health Research Group, Deakin University

Dr Claire Henderson-Wilson, NiCHE Nature and Health Research Group, Deakin University

Dr Cecily Maller, The Centre for Design, RMIT University

Karen Rosenberg, The Centre for Design, RMIT University

ACKNOWLEDGEMENTS

The project consultants wish to acknowledge contributions from the following people.

Jill McLean and the Metropolitan Melbourne Investigation Project Team,

Victorian Environmental Assessment Council

The members of the Reference Committee:

Brian Doolan

Parks Victoria

David Gabriel-Jones

The Public Land Consultancy

Neil Houghton/ Cheri Leighton

Department of Planning and Community Development

Christine Kilmartin

Department of Planning and Community Development

Evelyn Legare

Department of Transport

Robyn Mansfield

City of Knox

Wayne Malone

Department of Sustainability and the Environment

Kerry O'Neill

VicUrban

Mark Winfield

Department of Sustainability and the Environment

Photos courtesy of VEAC

CONTENTS

EXECUTIVE SUMMARY	4
1. INTRODUCTION	7
1.1 METHODOLOGY	8
1.2 DEFINITIONS	8
2. METROPOLITAN MELBOURNE	9
2.1 PUBLIC LAND IN METROPOLITAN MELBOURNE	9
2.2 POPULATION TRENDS	10
2.3 CLIMATE CHANGE	11
2.4 HEALTH TRENDS	11
2.5 PLANNING TRENDS	12
2.6 SUMMARY	13
3. A FRAMEWORK FOR CONCEPTUALISING LIVEABILITY	14
4. THE CONTRIBUTION OF PUBLIC LAND TO LIVEABILITY: A REVIEW OF THE LITERATURE.	18
4.1 EVIDENCE OF PUBLIC LAND CONTRIBUTING TO LIVEABILITY	18
4.1.1 PUBLIC LAND CONTRIBUTES TO HEALTHY, SAFE AND INCLUSIVE COMMUNITIES	19
4.1.2 PUBLIC LAND CONTRIBUTES TO DYNAMIC, RESILIENT LOCAL ECONOMIES	22
4.1.3 PUBLIC LAND CONTRIBUTES TO SUSTAINABLE BUILT AND NATURAL ENVIRONMENTS	23
4.1.4 PUBLIC LAND CONTRIBUTES TO CULTURALLY RICH AND VIBRANT COMMUNITIES	24
4.1.5 PUBLIC LAND CONTRIBUTES TO DEMOCRATIC AND ENGAGED COMMUNITIES	25
4.1.6 SUMMARY	25
4.2 MEASURING THE CONTRIBUTION OF PUBLIC LAND TO LIVEABILITY	26
4.2.1 LIVEABILITY GOALS AND INDICATORS	26
4.2.2 MEASUREMENT STRATEGIES	28
4.2.3 OTHER MEASUREMENT CONSIDERATIONS	30
4.2.4 SUMMARY AND A PROPOSED WAY FORWARD	30
5. CONCLUSION	32
6. REFERENCES	33
APPENDIX ONE	38
APPENDIX TWO	39
APPENDIX THREE	42
APPENDIX FOUR	45
APPENDIX FIVE	47

EXECUTIVE SUMMARY

The benefit obtained from certain types of public land such as parks, walking and bicycle trails, public facilities, hospitals, schools, transport links, coastal foreshores and water frontages is universally recognized. Conceptualising these benefits within a liveability framework is new, complex and challenging.

The '*Contribution of Public Land to Melbourne's Liveability*' report has been prepared for the Victorian Environmental Assessment Council (VEAC) as part of its 'Metropolitan Melbourne Investigation', an investigation of Crown land and public authority land in 29 municipalities in metropolitan Melbourne. The Terms of Reference for this investigation require VEAC to report, amongst other things, on the contribution of public land to Melbourne's liveability and the opportunities for enhancing this contribution.

The report provides a conceptual framework for categorising and measuring the contribution public land makes to Melbourne's liveability. The framework is developed through an examination of liveability theory relevant to Victorian policy discourse, together with a review of liveability and environmental literature correlated to public land use within Melbourne.

The report provides a brief overview of the processes for developing the paper and defines key terms including 'liveability'. In the Victorian context, liveability has emerged as a key policy term and has been the subject of two recent State Government commissioned reports. What emerges from these reports is that liveability is about the wellbeing of communities. "Liveability reflects the wellbeing of a community and comprises the many characteristics that make a location a place where people want to live now and in the future" (VCEC 2008). The Victorian State Government agrees that this concept of liveability has relevance to all Government portfolios (Victorian Government 2009).

Governments around the world retain public land for a variety of purposes: each country has its own unique history and culture of public land provision (Burroughs 1966). An overview of Melbourne's public land network provides important contextual information and, the report suggests, reveals that public land in Melbourne has local and metropolitan-wide (and state and national) significance for liveability.

Key Message 1: Melbourne's public land network has metropolitan wide significance and is a resource that governments can utilise to create a liveable city.

But public land is only one of a number of factors that will influence Melbourne's future liveability. A review of trends impacting Melbourne reveals that Melbourne is a city under pressure: pressure to accommodate an expanding and ageing population and for this increasing population to have access to public land and the services and utilities on it (eg public transport, schools, hospitals and sports grounds); pressure on natural environments in the face of changing weather patterns and pressure to improve the health of the population. All of these factors impact on the current and future liveability of Melbourne. Within this context, the report argues, Melbourne has a public land network which is an important resource for enhancing Melbourne's liveability.

Key Message 2: A range of factors are increasing pressure on Melbourne's liveability. Within this context an adequate supply of public land, an important resource for enhancing Melbourne's liveability, is more important than ever.

Whilst a universally recognised definition of liveability is not available, on most scales Melbourne is considered a liveable city (VCEC 2008). The report provides a summary of the literature in this area and draws links between liveability and the notion of community wellbeing. Community wellbeing research in Melbourne provides the basis for this report to identify five liveability goals.

Key Message 3: Liveability goals:

- Goal 1:** Healthy, safe and inclusive communities
- Goal 2:** Dynamic resilient local economies
- Goal 3:** Sustainable built and natural environments
- Goal 4:** Culturally rich and vibrant communities
- Goal 5:** Democratic and engaged communities

The domains for each of these goals are drawn on to review evidence in the literature of the contribution public land makes to liveability. The findings are summarised in the report and strongly suggest that public land can make significant contributions to liveability.

Key Message 4: The value add of public land relates to the public good outcomes which result from its provision.

Liveability outcomes are more likely to be realised when there is adequate and effective:

- Supply of public land, taking into account issues related to location, size and connectivity;
- Management of public land and the amenity provided by particular public land sites;
- Scale of catchment – appropriate to local communities, regions, metropolitan Melbourne, Victoria, or Australia; and,
- Governance arrangements - e.g. community engagement, partnerships with local government etc.

Key Message 5: Public land contributes to Melbourne's liveability. This contribution is dependent upon both the supply and utilisation of public land.

In order to identify key liveability indicators, to which public land contributes, clusters of liveability benefits are identified in the literature review and reframed in the report as a set of 17 indicators of liveability. The literature is then reviewed for evidence of how these indicators can be measured. The report identifies three measurement strategies: opportunity measurement and benchmarks; performance measurements; and community outcome measurements. Each has its strengths and weaknesses and the report argues that none alone adequately measures the value of a public land network.

Key Message 6: A co-ordinated reporting framework for understanding Melbourne's liveability does not exist. As a result there is no existing means of measuring Melbourne's liveability let alone the contribution that the public land network makes to it.



Southbank

This report provides a way forward by identifying a liveability framework containing goals and indicators. In terms of measuring the contribution Melbourne's public land network makes to liveability, it proposes that the three measurement strategies be used in combination in order to capitalise on their strengths and minimise their weaknesses.

Key Message 7: A new strategy to specifically measure the contribution of the public land to Melbourne's liveability is needed. Existing measurement strategies could be used in combination to overcome any of their individual weaknesses.

The qualities shaping public land can improve or decrease the contribution public land makes to the liveability of places (Gehl et al. 2006; Jacobs 1961).

1. INTRODUCTION

Public land is a vehicle for governments to secure and maximise benefits for communities (Slattery 2005) and the characterisation of those benefits varies from country to country based on the goals of governments and the values of communities (Burroughs 2001).

Submissions to the recent *Public Land Development* inquiry provide evidence that Crown land and public authority land is greatly valued by Melbournians (Legislative Council Select Committee on Public Land Development 2008). Further, the inquiry found that public land makes an important contribution to Melbourne's 'liveability', an increasingly important aspiration of the Victorian Government (Victorian Government 2009). But what is liveability and what is the contribution that public land makes to it? These are challenging questions and are complicated by the fact that the term 'liveability' is relatively new in Victorian policy discourse, and has tended to be under theorised in its application.

This report conceptualises the contribution public land makes to Melbourne's liveability and has been prepared for the Victorian Environmental Assessment Council (VEAC) as part of its 'Metropolitan Melbourne Investigation', an investigation of Crown land and public authority land in 29 municipalities in metropolitan Melbourne. The Terms of Reference for this investigation require VEAC to report, amongst other things, on the contribution of public land to Melbourne's liveability and the opportunities for enhancing this contribution.

The purpose of the report is to provide a conceptual framework for categorising and measuring the contribution public land makes to Melbourne's liveability. It has been prepared by a cross disciplinary team of academics with input and advice from policy and practitioner experts.

The first section of the report provides a brief overview of the processes for developing the paper and defines key terms including 'liveability'. This is followed by a section providing an overview of public land in metropolitan Melbourne and a summary of the key trends impacting Melbourne's liveability.

The third section examines liveability and links it to the notion of community wellbeing and five identified goals:

- Healthy, safe and inclusive communities;
- Dynamic resilient local economies;
- Sustainable built and natural environments;
- Culturally rich and vibrant communities; and
- Democratic and engaged communities (Wiseman et al, 2006).

The domains for each goal are drawn on to review evidence in the literature of the contribution public land makes to liveability. A summary of the findings are provided in section 4 and clusters of liveability benefits within each goal are reframed as a set of 17 indicators of liveability.

Section 4 also provides evidence from the literature of three measurement strategies for understanding the contribution of public land to liveability. The strengths and weaknesses of each are reviewed along with additional measurement issues. The summary of section 4 includes consideration of a way forward for measuring the contribution Melbourne's public land network makes to liveability. Preliminary ideas for capitalising on the strengths and minimises the weaknesses of these other approaches, are outlined.

Finally, the report concludes with a summary of the findings.

1.1 Methodology

The project team reviewed relevant background material and local and international literature on both liveability and public land research. The findings of the review were summarised in a discussion paper and presented to a meeting of the VEAC Liveability Reference Group comprised of policy and practitioner experts (see Appendix One).

The discussion paper proposed a draft framework of liveability goals and the main contributions public land makes to them. This enabled a deeper discussion with the Liveability Reference Group and the further development of ideas.

Feedback from the Liveability Reference Group led to a further investigation of literature and refinement of the framework. The refined framework was presented to the Liveability Reference Group for verification and the results are the subject of this report.

1.2 Definitions

For the purposes of clarity, the key terms for this project were defined at the outset. Defining the key terms ensured all members of the project team had a shared understanding of the main concepts framing the project and were also used as a basis for the literature review.

Liveability

Although there is little consensus about what 'liveability' entails, the definition used here is based on the Victorian Competition and Efficiency Council's definition, which states:

"Liveability reflects the wellbeing of a community and comprises the many characteristics that make a location a place where people want to live now and in the future" (VCEC 2008, XXI). The achievement of liveability requires conditions which enhance social, environmental, economic, cultural and governance goals and outcomes. Further discussion about liveability is presented in Section 3.

Public Land

Public land is defined under section 1(2) of the *Victorian Environmental Assessment Council Act 2001* as Crown land and land owned by Victorian public authorities and government departments. It excludes land owned by municipalities. However, some municipal land is used for purposes similar to Crown land. Municipal lands (e.g. council owned facilities, trails and sports fields) and other broad-acre freehold areas (e.g. private golf courses and land within green wedge zones) are interweaved with public land and may be perceived as being public land by the general community.

Indicators

Indicators are tools for measuring progress toward agreed goals. Indicator programs may have a suite of indicators or a single index. Each indicator may be informed by more than one measure, and may represent subjective and/or objective data. The unit of analysis may be a population group or a geographic area (Balsas 2004).

2. METROPOLITAN MELBOURNE

In order to understand the role of public land in Melbourne, we first need to know a little about Melbourne. What makes Melbourne, Melbourne? This section does two things: it provides an overview of public land in Melbourne; and identifies a range of trends that are important contextually for a discussion of the value of public land in Melbourne.

2.1 Public land in metropolitan Melbourne

Governments around the world retain public land for a variety of purposes: each country has its own unique history and culture of public land provision (Burroughs 1966). What public land offers governments, that private land cannot, are opportunities to utilise land for the purposes it sees fit. Individuals and private companies generally buy land for purposes related to their own gain e.g. for economic gain or to secure a home. However, public land is generally retained for 'public good' or utilitarian purposes such as:

- Environmental preservation/conservation;
- Recreation and relaxation;
- The delivery of services deemed the responsibility of governments and not provided by the private sector; and
- The preservation of land supply for future communities (that can't be sold off) (Burroughs 1966).

Therefore public land is a resource that governments can utilise to improve social, economic and environmental outcomes now and in the future: thus influencing liveability.

VEAC estimates that although around 34% of Victoria is public land only about 12% of land in metropolitan Melbourne falls into this category (VEAC unpublished data 2009). This means that there is an unequal spread of public land across the state.

Within the metropolitan area, the distribution of public land and the type and size of this land varies, as does the population density. For example, in 2008 the amount of land zoned under planning schemes as Public Conservation and Resource and Public Park and Recreation¹ varied from 191 km² (15% of LGA) in the City of Cardinia to 1.9 km² in the City of Stonnington² (7.5% of LGA) (Department of Planning and Community Development unpublished data 2009). Whilst the quantity or total area of public land is important, quality, locality and accessibility are factors which impact on its value (Legislative Council Select Committee on Public Land Development 2008).

Public land in metropolitan Melbourne differs from public land in other parts of Victoria because Melbourne is a densely populated area. VEAC reports:

"The proportion and number of blocks of public authority freehold land is much greater because of the amount of services, utilities, roads and railways needed for a large metropolis. The Kinglake National Park and the Bunyip State Park on the perimeter of the investigation area are the largest tracts of Crown land" (VEAC unpublished data 2009).

1: Note: Land zoned as such includes both public land and municipal freehold land.

2: It should be noted that the size of the two municipalities and their populations also vary.

Public land in a city like Melbourne provides essential infrastructure and services for urban living. It supports a range of natural and built environments and diverse citizen uses offered through:

- Parks and other natural areas
- Botanic gardens
- Foreshores
- Creeks, rivers and lakes
- Utility easements
- Railway reserves
- Sports complexes
- Playgrounds
- Roads, roadsides and footpaths
- Galleries and libraries
- Schools
- Hospitals and health centres

These examples highlight that public land in Melbourne offers opportunities with local significance, e.g. playgrounds and local sports facilities, and regional (and sometimes state wide significance), e.g. major parks, rivers and sports grounds. Together they offer a public land network of metropolitan significance.

Key Message 1: Melbourne's public land network has metropolitan wide significance and is a resource that governments can utilise to create a liveable city.

2.2 Population trends

Melbourne is a densely populated urban environment. In 2006, around 3.5 million people approximately 68% of Victorians lived within the investigation area (Australian Bureau of Statistics 2006). Population growth has been strongest in the outer urban areas i.e. growth areas and in central Melbourne e.g. high density residential towers (Department of Planning and Community Development unpublished data 2009).

The density of Melbourne is likely to increase over the next 30 years. Current estimates suggest that by 2036 Melbourne will have an additional population of +1.8 million³ people meaning 600,000 new dwellings will need to be accommodated as well as provision for a workforce almost double in size (Department of Planning and Community Development 2009). This rapid population growth will put pressure on public infrastructure, services and land. More people will use Melbourne's open space network, roads, paths and trails and utilities.

Australia generally has an ageing population although the age structure of populations varies across Melbourne. Inner Melbourne is home to more young people, outer urban areas more families and suburbs within 10 – 15 kilometre radius from Melbourne have older populations (Australian Bureau of Statistics 2008). The spread of age variation is important because different age groups make use of public land for different reasons and their needs of public facilities vary (e.g. schools and health services for families, playgrounds for children, sports ovals for teenagers, walking pathways and seating for seniors, hospitals and transport for older people).

Melbourne is also a very multicultural community and home to many people from diverse cultural backgrounds. Migrants and refugees bring with them new ways of using public land and different needs for public service (Department of Premier and Cabinet 2004).

³: In 2006, around 3.5 million people and approximately 68% of Victorians lived within the investigation area. It is projected that around 4.7 million people will live in this investigation area by 2026. In other words, the population is expected to increase by approximately 34% in 20 years.

2.3 Climate change

There is evidence that climate change is having major impacts on Melbourne, including prolonged drought, increased temperatures and extreme weather events (Commonwealth Scientific and Industrial Research Organisation 2007; Department of Sustainability and the Environment 2008; Climate Change Taskforce 2008). Recent Victorian bushfires reveal the acute threats of climate change and drought to Metropolitan Melbourne.

Another factor contributing to increasing temperatures in inner urban Melbourne is a heat island effect caused by the densely built urban environment (Climate Change Taskforce 2008). The surfaces of roads, pavements and buildings heat up on hot sunny days and slowly release heat during the night. Open space and water bodies can create cooler urban areas by providing shading and evaporative cooling, but this is highly dependant on moisture and water supply (Climate Change Taskforce 2008). Melbourne's extended dry period has affected the ability of vegetation to provide cooling because of the decreased moisture levels and reduced tree canopies (Climate Change Taskforce 2008).

A major impact of climate change on public land in Melbourne is likely to be rising sea levels (Victorian Coastal Council 2008). It is estimated that without intervention and mitigation, some coastal parks and amenities will be impacted. Coastal areas are likely to suffer from an increase in erosion rates and periodic flooding as sea levels rise in the coming decades (Commissioner for Environmental Sustainability Victoria 2008).

The changing climate creates challenges in the management of public land. For example, the continued lack of rain and the extreme temperatures in January and February 2009 have impacted not only by creating extreme fire conditions and heat stress, but have also had an impact on sports fields, parks and gardens which have dried out resulting in the death of vegetation (Rowe et al. 2008; SMEC 2007).

However, a cultural shift is emerging in the context of climate change. There is a growing awareness of the value of the natural environment along with the greening of social attitudes and practices (Department of Environment and Climate Change 2007). The result is stronger public interest in public land and in the protection of natural environments in particular (Australian Bureau of Statistics 2009).

2.4 Health trends

There are four key social health trends experienced by Melbournians of particular relevance to public land policy: mental illness rates, obesity levels, concerns about community safety and increased health inequalities generally (VicHealth 2009b).

Mental illness

Australians are experiencing higher levels of mental illness than ever before and this is expected to rise (VicHealth 2007). A key goal of the Victorian State Government has been to promote positive mental health (Department of Human Services 2009).

Obesity

Obesity levels among Australians are increasing at an unprecedented rate as an outcome of reduced physical activity and poor eating habits (VicHealth 2009b). To tackle rising obesity levels in Melbourne, environments that support active living are needed as well as active living strategies, such as the Victorian Government's *Go for your life* program.

Community safety

Perceptions of safety impact on how people live: on mobility choices and levels of activity. It is well documented that some people feel more vulnerable than others, for example at night,

women and older people feel less safe than young men (Whitzman 2008). *Melbourne 2030 Planning for Sustainable Growth*, the metropolitan planning strategy for Melbourne, supports crime prevention and community safety initiatives and acknowledges that the design of the built and natural environments impact both on perceptions of safety and on behaviour.

Health inequalities

Across Melbourne, some neighbourhoods and population groups such as refugees, indigenous Australians and people with a disability, may experience poorer health outcomes than the general population (VicHealth 2008). The link between place and health is the subject of ongoing research but there is already convincing evidence to support this link. VicLanes research, for example, shows that local environments have an influence on body weight (Kavanagh et al 2005). These links between environments and health are discussed in Section 4.

This inequitable burden of disease across Melbourne is a reminder of the importance of the equitable distribution of contributors to liveability such as public land and the purpose for which it is used such as hospitals, health centres, parks and other open spaces.

2.5 Planning trends

There are two planning trends important to public land in Metropolitan Melbourne: increased urbanisation and increased focus on joined-up planning.

Increased urbanisation

Melbourne 2030 Planning for Sustainable Growth and its update, *Melbourne @ 5 Million*, are the Government's key policy documents addressing Melbourne's land use over the next twenty years. The central aim of the Government's approach is to accommodate Melbourne's rapidly growing population while preserving its renowned liveability and cultural identity (Department of Infrastructure 2002). A key strategy is to increase housing density in the inner city and along transport corridors and limit expansion beyond the Urban Growth Boundary (UGB).

Increased housing density has the potential to increase pressure on the availability and use of public land within the UGB. With more people living within the metropolitan region, it is important that planning provisions strive to ensure ample public land supply.

In parallel to *Melbourne 2030*, strategic plans have been developed to respond to specific planning elements. *Linking People and Spaces* provides the Government's long-term vision for Melbourne's regional level open space network (Parks Victoria 2002). *Linking People and Spaces* establishes open space as a central contributor to Melbourne's appeal and amenity. The strategy aims to protect public open spaces such as regional parks, coastal foreshores, creeks and connecting corridors with an overriding concern focused on community accessibility to open space (Parks Victoria 2002).

Linking People and Spaces identifies six new regional parks for Melbourne to be established and provide for increased populations in growth corridors. With pressure on land resources increasing due to the current trends in population growth, drought and climate change the aims of *Linking People and Spaces* have intensified in both importance and difficulty (Department of Planning and Community Development 2009).

Public land has always been under threat from increased urbanisation (Wright, 1989) but the present unprecedented population growth has exacerbated this tension (Legislative Council Select Committee on Public Land Development 2008; Department of Planning and Community Development 2009). A recent expression of the concern for the loss of public land in the context of urbanisation was evident in submissions to the inquiry by the Select Committee on Public Land Development. The Committee reported a high level of community concern about the potential loss of public land as a result of urbanisation and an urgent need to preserve public land as essential infrastructure within a long term planning framework (Legislative Council Select Committee on Public Land Development 2008).

Joined up planning

Joined up government and whole of government approaches are new ways of working which recognise the value in working across silos with a common focus on communities (Department of Planning and Community Development 2006; 2007; 2008; 2009a). These ideas have spread into how planning is done and how infrastructure is delivered. Community hubs in new neighbourhoods are a good example of how multiple uses of space can be delivered by partnerships of agencies. Community hubs provide an opportunity to link public land to municipal freehold land to achieve multi-use spaces and facilities. For example a library co-located with a neighbourhood house and an early childhood centre.

This trend, in the way government works and the way planning is undertaken points to the importance of taking a joined up approach to public land which recognises that by partnering with others the State Government can leverage increased benefit for communities. This is particularly important in a metropolitan context because public land intersects with other forms of land such as municipal freehold open space land in a more concentrated way. This contributes to a blurring of community perception of what public land is. The public generally does not distinguish public land based on ownership.

2.6 Summary

The picture of metropolitan Melbourne painted in this section is of a city under pressure: pressure to accommodate an expanding and ageing population and for this increasing population to have access to public land and the services and utilities on it (eg public transport, schools, hospitals, parks and sports grounds); pressure on natural environments in the face of changing weather patterns and pressure to improve the health of the population. All of these factors impact on the current and future liveability of Melbourne. Within this context, Melbourne has a public land network which is an important resource for enhancing Melbourne's liveability. The contribution public land can make to Melbourne's liveability is explored in the following section.

Key Message 2: A range of factors are increasing pressure on Melbourne's liveability. Within this context an adequate supply of public land, an important resource for enhancing Melbourne's liveability, is more important than ever.



Ricketts Point

3. A FRAMEWORK FOR CONCEPTUALISING LIVEABILITY

On most scales Melbourne is considered a liveable city (VCEC 2008) and yet no consensus exists about what liveability actually is (Harrop 2008). The Economist Intelligence Unit, for example, ranks Melbourne as the world's third most liveable city (Economic Intelligence Unit 2009), and the Mercer Index ranks Melbourne at 17th (Mercer Human Resources Consulting 2008). What these two examples highlight is that there are differing conceptualisations of liveability at work. Each has been developed with a particular purpose in mind, for example, as a tool for determining remuneration for expatriate executives (Mercer Human Resources Consulting 2008), or to provide forecasts and analysis of global factors affecting industrial economies (Economic Intelligence Unit 2009), and therefore defines differently the characteristics that make a city livable.

Despite the absence of a commonly shared understanding of liveability, it is a term that has been widely utilised in urban planning. It has been associated with: conditions required for economic revitalisation and city regeneration (Balas 2004); notions of social sustainability (West and Badham 2008); and, environmental psychology or the quality of life experienced as a result of urban design (Harrop 2008). What each of these approaches share is a broad agreement that liveability is shaped by social, economic and environmental conditions. Where they differ is in the importance they give to these different dimensions.

In the Victorian context, liveability has emerged as a key policy term and has been the subject of two recent State Government commissioned reports. *A Strategic Framework for Creating Liveable New Communities*⁴ was developed for the Growth Areas Authority in 2008. This particular framework focused on what makes *new* communities liveable and therefore the key elements that must be addressed in the planning stages of new communities in order to ensure that communities are liveable in the future.

In this project, planning for future liveability was seen as an important strategy for ensuring the quality of life of people who would live in new communities in the future. The liveability framework, developed as an outcome of the work, includes four goals:

- High quality job opportunities;
- Healthy, safe and socially connected communities;
- Affordable living; and
- Sustainable natural and built environments (West and Badham 2008).

Thus liveability was seen as important for future inhabitants of newly developing neighbourhoods and shaped by economic, social, and environmental conditions. Although this framework does not rank the importance of each condition, the emphasis on affordable living implies that equity of outcomes from these conditions is an important factor for consideration. Many agencies were identified as contributors to making new communities liveable through their participation in the precinct structure planning phase. In particular, emphasis was placed on the importance of achieving whole of government planning.

A second report addressing liveability was released in 2008 by the Victorian Competition and Efficiency Commission (VCEC) (VCEC 2008). The report defined liveability this way:

'Liveability reflects the wellbeing of a community and comprises the many characteristics that make a location a place where people want to live now and in the future'. (VCEC 2008)

⁴: This strategy was developed for the Growth Areas Authority by a consortium led by the McCaughey Centre.

The strength of this definition is that it draws attention to community wellbeing as a core component of liveability as opposed, for example, to the economic wellbeing of expats. It also acknowledges that there are many contributors to liveability. Within this range of contributors, VCEC focuses on the overlapping contributors to both liveability and competitiveness. The Inquiry concluded that whilst liveability is important to Victorian residents it is also important for the competitiveness of a city: many factors that enhance liveability also enhance competitiveness (VCEC 2008).

An important contribution of the VCEC work is that it identifies three drivers of liveability: the economy and markets; governments and decision making; and communities (VCEC 2008). The State Government, in its response to the report, also acknowledged the role of governments and decision making and agreed that the concept of liveability has relevance to all government portfolios. It noted that for governments, the overarching themes for maximising liveability relate to governance and include:

- Enhancing information provision to better inform decision making;
- Effective integration of government efforts;
- The importance of best practice regulation; and
- Managing growth within the context of Victoria as a whole (Victorian Government, 2009, pp 4 - 5).

Although each of the understandings of liveability developed in these two government commissioned reports is consistent with the definition of liveability adopted for this paper, each focuses on particular elements of liveability: the new communities work focused on social, economic and environmental conditions for particular places, and the VCEC work focused on these same conditions and their contribution to competitiveness.

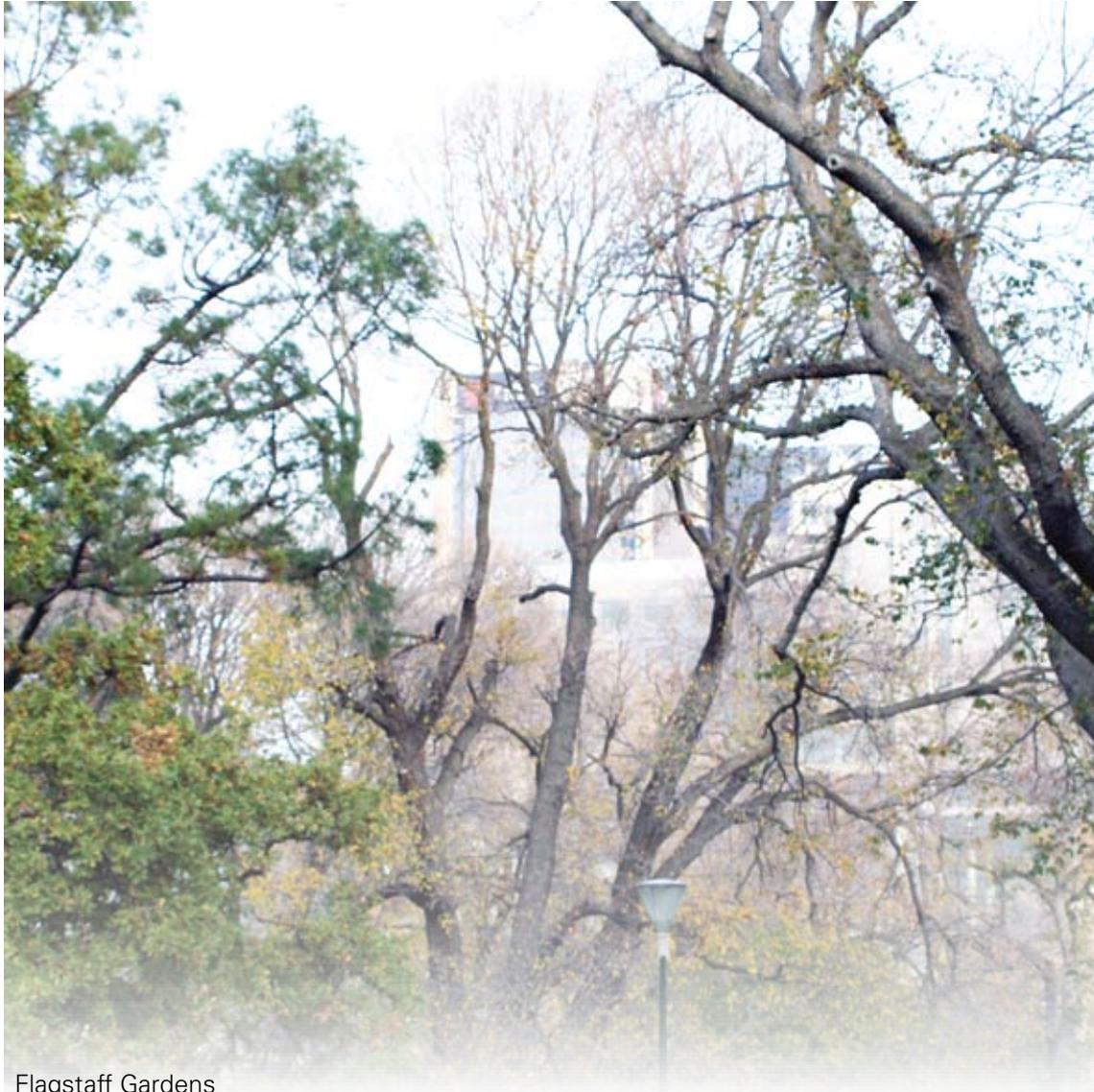
This report develops these understandings of liveability into a framework which is then applied to one specific contributor and one specific context; that is the contribution made by *public land* to *Melbourne's* liveability.

What is clear from the literature is that liveability is about the wellbeing of communities (Harrop 2008; Balsas 2004; West et al. 2008; VCEC 2008). It is important to the people who live, work and study in a locale, is linked to notions of sustainability, and is related to social, economic, environmental, cultural and governance outcomes in communities. This concept of 'community wellbeing' has been well researched and measured (VCEC 2008; Wiseman et al. 2006; Wiseman 2007).

An important contribution to the community wellbeing literature in the Australian context is a community wellbeing framework developed for Community Indicators Victoria (CIV), a flagship project of the McCaughey Centre, University of Melbourne. The framework was the outcome of an extensive international review of literature and consultations with Victorian State and local governments (Wiseman et al. 2006). This two year project involved a multistage process for verifying the final framework and was endorsed by high level leaders such as the head of the OECD World Project on '*Measuring the Progress of Societies*' as well as key Victorian State government departments and the majority of Victorian local governments. The framework is divided into five domains which collectively describe community wellbeing:

- Healthy, safe and inclusive communities;
- Dynamic resilient local economies;
- Sustainable built and natural environments;
- Culturally rich and vibrant communities; and
- Democratic and engaged communities (Wiseman et al. 2006).

The CIV community wellbeing framework has strong resonance for understanding and measuring liveability as defined for this report. Accordingly, the community wellbeing domains have been utilised to articulate five key *liveability goals*.



Flagstaff Gardens

Key Message 3: Liveability goals:

- Goal 1:** Healthy, safe and inclusive communities
- Goal 2:** Dynamic resilient local economies
- Goal 3:** Sustainable built and natural environments
- Goal 4:** Culturally rich and vibrant communities
- Goal 5:** Democratic and engaged communities

The contribution of public land to liveability can be understood by categorising public land types against each liveability goal. Table 1 presents a visual snapshot of the possible contributions of public land to Melbourne's liveability, recognising the diversity of current public land uses in metropolitan Melbourne. This taxonomy has been utilised as a framework for determining which literature to review in section four.

Table 1. Liveability and Melbourne's Public Land Network ⁵

	Natural Environment			Built Environment		
	Parks and nature reserves, Foreshores	Creeks and rivers Utility easements Railway reserves	Sports fields and complexes Playgrounds	Roads and footpaths Roadsides and road-related areas	Galleries and libraries School halls Health centres	Municipal offices Utility infrastructure Police Stations Hospitals
<i>Healthy, safe and inclusive communities</i>	Open-air activities Physical and mental reinvigoration and preventative health measures	Active and passive recreation Physical and mental reinvigoration	Active and passive sport Adult- and child-focused recreation Preventative health measures	Communication Social interaction Active recreation e.g. jogging, skating, cycling	Cultural and educational activities Health and well-being	Civic governance Water, sewerage, etc Law and order Medical services
<i>Dynamic, resilient local economies</i>	Conservation-related employment	Communication and transport infrastructure	Recreation-related employment	Infrastructure Shopping strips Al-fresco dining Footpath trading	Community use venues and noticeboards	Local and regional services
<i>Sustainable built and natural environments</i>	Conservation of indigenous flora Habitat for fauna Landscape	Remnant vegetation and habitat Biodiversity corridors Landscape	Water conservation	Urban vegetation Community gardens	Heritage buildings	Recycling Transport
<i>Culturally rich and vibrant communities</i>	Egalitarian and cross-cultural interactions Spatial autonomy (eg for teenagers) Educational areas Sense of place	Revegetation	Sporting clubs	Street festivals Street art and sculpture	Events, exhibitions, social functions	Civic engagement
<i>Democratic and engaged communities</i>	'Friends' groups Conservation volunteers	'Friends' groups Conservation volunteers and advocacy groups	Committees of Management	Processions Rallies and protests	Cultural societies Parents' groups Ethnic-based social clubs	Local government activities

⁵: The authors of this report wish to acknowledge the work of David Gabriel-Jones and other Liveability Reference Group members in developing this table.

4. THE CONTRIBUTION OF PUBLIC LAND TO LIVEABILITY: A REVIEW OF THE LITERATURE.

4.1 Evidence of public land contributing to liveability

The benefit obtained from certain types of public land such as parks, walking and bicycle trails, public facilities and utilities, hospitals, schools, transport links, coastal foreshores and water frontages is universally recognized. Conceptualising these benefits within a liveability framework is new. This section provides a summary of international literature on the benefits of public land and categorises these as contributions within each of the five liveability domains. It provides evidence from the literature of how these contributions are understood.

The findings presented here have been selected from a broad spectrum of research into the impacts of environmental conditions on human health and psychology, sociology, environmental health, arts and democracy and reflect current uses of public land within metropolitan Melbourne.

Whilst the literature review did not uncover specific reference to the *value add* of public land, i.e. what it is that public land provides that private land cannot, the value add was implicit by virtue of the focus in the literature on public good outcomes as opposed to private gain. In the case of social, cultural and governance benefits, the provision of public spaces, services and other participation opportunities on public land particularly benefits members of the community without the financial impetus to pay for access to private services and/or land holdings. It has an equalising quality. Equally, when utilised to support environmental outcomes, public land provides a function that is not normally provided through the private ownership of land. In these times of enormous environmental challenge, public land plays an essential role in conserving and preserving the natural environment⁶. Perceptions of stability or permanence generally associated with public land, but not private land, also contribute to community wellbeing.

However, it is also clear in the literature that public ownership of land is no guarantee that common good will result. The outcomes of public land are more likely to be realised when there is adequate and effective:

- Supply of public land, taking into account issues related to location, size and connectivity;
- Management of public land and the amenity provided by particular public land sites;
- Scale of catchment – appropriate to local communities, regions, metropolitan Melbourne, Victoria, or Australia; and,
- Governance arrangements - e.g. community engagement, partnerships with local government etc (Department of Planning and Community Development 2006; 2007; 2008; 2009a).

Worth noting are limitations of the literature: some authors do not distinguish between public land types based on ownership i.e. Crown land or municipal freehold land (not public land under VEAC's definition), and others make no distinction between open space based on ownership – whether it be public or private open space. These limitations present a challenge to this literature review and the VEAC Investigation more broadly because both bodies of work are concerned with only part of what the community would typically consider public open space.

⁶: The economic benefits of public land are well documented elsewhere and are not addressed in detail in this paper.

Key Message 4: The value add of public land relates to the public good outcomes which result from its provision.

4.1.1 Public land contributes to healthy, safe and inclusive communities

4.1.1.1 Public land contributes to good physical health

- Parks, walking tracks and beaches are public land resources which enable unstructured but high intensity physical exercise contributing to healthier communities. Exercising outdoors in spaces such as parks as opposed to indoor spaces which are more often privately owned has been linked to increased exercise intensity and improved mood effects (Peacock 2007).
- Open public space contributes to liveability by promoting physical activities such as walking and cycling (Maller et al. 2008). The World Health Organisation supports initiatives that promote physical wellbeing through provision of open spaces which link public facilities to encourage walking and cycling (Australian Local Government Association 2008, World Health Organization 1986). Urban design that encourages walking and cycling for transport purposes increases the contribution public land makes to community health (Australian Local Government Association 2008, Eddington 2008). Moreover, walkable communities decrease car usage reducing traffic congestion and carbon emissions.
- Communities place significant value on sporting grounds and the clubs they facilitate (Australian Local Government Association 2008). The recent Victorian bushfires illustrated the practical and social value to communities that sporting fields provide. During the fires local ovals and community halls provided shelter from fire and access to emergency service authorities. In the aftermath of the devastation these ovals and halls have been central to community rebuilding. These public land resources housed communities; they accommodated service provision; and they provided an arena for communal healing activities.
- Public land accommodates health services such as public hospitals, maternal and child health services, preventative health facilities such as gyms, and community health learning opportunities such as first aid training courses. These health provisions improve health amongst community members. Without public land these health provisions would be jeopardised.
- Exposure to natural environments such as vegetated parks, coastal reserves, rivers and estuaries have intrinsic health benefits for human life. These natural environments elicit physiological responses affecting immunity and cardiovascular function contributing to physical and mental wellbeing (Parsons 1991; Ulrich 1991; Katcher et al. 1983).
- Public parks, municipal sports centres, swimming pools and schools facilitate the majority of sports played by children under the age of 15 years (VicHealth 2008b). Through this facilitation public land provides fundamental contributions to the physical and mental health of communities as well as enabling social capital to develop within communities. Even as a space for free play, children benefit mentally and physically from public open space (Maller in press; Malone 2007).
- Community gardens which are publicly owned and accessible are a successful public land resource contributing to physical and mental health as well as social capital (Maller et al. 2008; Kingsley and Townsend 2006; Ferris 2001). In built up urban areas with few private gardens, community gardens provide access to the

physical (and mental) health benefits of gardening. The physicality of gardening improves fitness while the accessibility to organic fresh food as well as culturally appropriate food has nutritional benefits and enhances food security (Maller et al. 2008; Higgins 2006).

- Clean air and clean water provide an important base for a community's physical wellbeing (Maller et al. 2008). Public land resources such as the water catchments and treed parks support ecosystem functioning that enhance air and water quality (United Nations Department of Public Information 2002; Environment Protection Authority 2008).
- Public land enables children to play. A lack of nature in the lives of children has been linked to trends, such as the rises in obesity, attention deficit disorders, and depression (Louv 2008).

4.1.1.2 Public land contributes to good mental health

- Natural environments such as public parks offer 'restorative' qualities that contribute to mental wellbeing. Key research into psychological wellbeing has found that natural environments alleviate 'mental fatigue' (Kaplan 1989). It is accepted across the literature that psychological wellbeing is intrinsically linked to exposure to natural environments (Kaplan 1989; Ulrich 1991; Parsons 1991; Maller et al. 2008). Public land resources are becoming increasingly the only natural environments available in densely populated areas and therefore vital contributors to mental wellbeing for many communities.
- Parks provide the setting for ecotherapy programs shown to improve mental health. Ecotherapy is an emerging treatment option for mental illness. Patients participate in a conservation group undertaking environmental programs (Parks Forum 2008). An Australian study into ecotherapy reported improvements to participants' mental health which they associated with the exposure to natural environments within the therapy (Parks Forum 2008; Mind 2007).
- It is believed that increasing the number of natural environments in urban areas will improve mental wellbeing (Danish Architecture Centre 2009). International initiatives to increase the number of pocket parks within urban areas are being endorsed by the planning community (Danish Architecture Centre 2009).

4.1.1.3 Public land contributes to a community's social capital

- Public land provides spaces to socialise and for communities to unite (Lloyd & Auld 2003). Community hubs, shopping strips, parks, schools and iconic locations such as Federation Square are various types of public spaces that support social activity.
- Research shows a positive correlation between levels of social involvement and the greenness of space implying that natural environments promote social vitality (Sullivan et al. 2004).
- Public spaces are central to young people establishing a healthy engagement with the wider community. Accessible public space contributes to young people's independence and their connection to their neighbourhoods (Malone 2007; White 1999).
- Public land resources contribute community gardening space (Maller et al. 2008) which provides opportunities for social connection, education and community activism which are positive liveability outcomes.
- Public parks, nature strips, bike paths, coastal foreshores and river beds

contribute green spaces within urban settings which has positive liveability outcomes. The research shows a positive correlation between greenness of open space and social participation (Maller et al 2008; Sullivan 2004).

- Public land supports public transport infrastructure which enables social, economic and health opportunities within the community which enhances liveability (Litman 2002).
- Compact urban form serviced by well connected bicycle paths and walking tracks increases human powered transportation use (Maller et al 2008; Hoehner et al 2005; Zlot 2005; Wendel-Vos 2004).

4.1.1.4 Public land facilitates community safety

- Public land accommodates police and emergency services facilities which are essential for community safety.
- Well used public land increases perceptions of safety within the community. Vibrant public spaces engender a sense of safety (Jacobs 1961).
- Volunteer programs on public land increase usage of that public land as well as perceptions of safety of that public land (Moore et al. 2006).

4.1.1.5 Public land contributes to a sense of pride and attachment to place

- Streets, shopping strips and parks contribute to the character of neighbourhoods (Cantrill 1998). These aspects of the public domain elicit a sense of place to which citizens may or may not form attachment. Well designed and maintained public spaces within neighborhoods engender a positive neighbourhood identity improving quality of life (Australian Local Government Association 2008).
- The privatisation of space through the proliferation of shopping centres rather than shopping strips detracts from liveability. The privatisation of space facilitates experiences of exclusion for certain members of the community (Australian Local Government Association 2008; White 1999). Shopping centres unlike shopping strips are patrolled by private security teams and facilitate segregation of certain groups, namely young people and the mentally ill.
- The fact that national parks and habitat corridors sustain biodiversity benefits restores environmental confidence within people (Department of Environment and Climate Change NSW 2007). As climate change awareness and concern grows within the community, people value and are reassured by the protection of natural environments. A recent survey of community attitudes towards climate change and drought found that 13% of respondents saw vegetation management, aimed at promoting biodiversity, as the most or second most important action in reducing the effects of climate change (Department of Environment and Climate Change NSW 2007).
- Most public schools, museums and galleries, public libraries, and many community childcare and neighbourhood houses operate on public land. These facilities provide education programs across age groups, ethnicities and education levels.
- School facilities provide opportunities for adult and childhood learning, community gathering and recreation, environmental learning and climate change action (Higgins 2006). Canadian programs have resulted in school grounds becoming central sites for community activity and environmental protection (Higgins 2006).
- Maternal and child health programs are facilitated by public land resources.

These programs have contributed to lower child mortality rates and higher child immunisation figures, higher breastfeeding rates and greater support for women suffering postnatal depression (The Department of Education and Early Childhood Development 2007). The Victorian State Government along with local councils place great significance on the provision of these programs (The Department of Education and Early Childhood Development 2007).

- Melbourne Zoo, Werribee Open Range Zoo and Healesville Sanctuary offer learning opportunities for all visitors. They provide specific learning programs for all ages and sectors of the community (Zoos Victoria 2009).
- Public land enables young children to have encounters with the natural environment within urban areas. These encounters provide informal learning opportunities about nature and climate change (Maller in press; Rowe et al. 2008). Further, encounters with the natural environments such as those that occur in parks on public land combat a demonising of nature that can result from extreme weather events such as bush fires (Rowe et al. 2008).
- Public green space contributes to people's ability to learn. Research has linked children's concentration levels to exposure to natural views (Taylor et al. 2002).

4.1.2 Public land contributes to dynamic, resilient local economies

4.1.2.1 Public land stimulates the economy

- Public land offers a variety of activities which draw residents and tourists to art galleries, sporting events and festival, beaches and parks. These activities generate significant employment dollars and contribute to economic growth (Marsden Jacob Associates 2004).
- Oceans, rivers, lakes and bays attract people. The popularity of these public places is illustrated by the large number of tourists they draw as well as the high property values adjoining water bodies (Maller et al 2008).
- A number of commercial and community activities occur on public land, for example private fitness coaches/classes, weekend markets and permanent shopping malls. Communities and the private sector benefit from this free, or minimum cost, facilitation (Parks Forum 2007).
- The majority of road and rail transport services are provided on public land, enabling commerce and trade (Department of Transport 2008).
- The availability of fresh water is vital to not only the health of the community but also to agriculture and business (Department of Sustainability and the Environment 2007). Successful catchment areas not only ensure water for business, but may further reduce economic costs associated with major infrastructure projects necessary to manage drought.
- Visitors to Melbourne's zoos, Royal Botanic Gardens, national and State parks, The National Gallery, The Arts Centre, The MCG, major sporting venues and other attractions contribute to the total revenue of the State (Arts Victoria 2008; Zoos Victoria 2009; Sports and Recreation Victoria 2005)
- Health benefits derived from public land resources contributing to active communities reduce health care costs. Health care costs attributable to physical inactivity are estimated at \$5.6 billion per year (City of Melbourne 2007).

4.1.3 Public land contributes to sustainable built and natural environments

4.1.3.1 Public land enhances water quality and food security

- Forested water catchments are Melbourne's primary source of pure drinking water. Most of Melbourne's forested water catchments are national parks. While some of these catchment areas are not accessible for recreation, the contribution to the city's citizens is immense (Melbourne Water 2005).
- Community gardens and associated vegetable markets improve access to organic fresh food. They contribute to lower greenhouse gas emissions by providing locally grown produce to inner city residents (Abraham 2008).
- Local community gardens contribute to food security (Higgins 2006). As food prices increase opportunities to grow edible gardens increase community access to fresh fruit and vegetables (Halweil et al. 2007). In inner city areas with high densities, apartment living and small residential block sizes, community gardens enable individuals to grow their own food.

4.1.3.2 Trees on public land absorb greenhouse gases and other atmospheric pollutants

- Trees are essential to human life. They are the 'green lungs' of urban spaces, absorbing the carbon dioxide produced by human life (Parks Forum 2008). State forests, parks, and other vegetated public land absorb carbon and offset greenhouse gas emissions.
- Climate change threatens access to water, food production and air quality. Highly vegetated public land contributes to reducing climate change and global warming through the absorption of greenhouse gas emissions. The Australian Government's Carbon Emission Trading Scheme report includes possible carbon offset priorities which include revegetation programs in rural and urban areas (Garnaut 2008). The report's policy recommendations highlight the value of existing natural environments on public land.

4.1.3.3 Urban parks alleviate heat stress

- Urban parks and trees have a lower heat absorption rate than roads and buildings. Vegetation and tree cover reduces the 'urban heat island' effect by enhancing evapotranspiration, shading and reflection of solar radiation (Climate Change Taskforce 2008; Environmental Protection Agency 2008). A large tree is estimated to produce the cooling effect of 10 room-sized air-conditioners (Maller et al 2008).
- Parcels of natural public land help people cope with high temperatures by cooling people and environments (Wilson et al. 2008).

4.1.3.4 Urban parks sustain biodiversity

- National parks, nature conservation reserves, including native grassland protection areas make specific contributions to the conservation of Australia's natural ecosystems. A range of other vegetated regional parks and reserves contribute to the protection of regional and local ecosystems. These reserves foster the protection of biodiversity including the protection of endangered vegetation communities and species of flora and fauna. Further, they provide links to heritage lost through colonial development (Department of Sustainability and Environment 2002).
- Melbourne's onshore coastal environments contain a wide range of habitats which support a diversity of flora and fauna (Victorian Coastal Council 2008)

- Parkland corridors form the core of the 'connectivity conservation' approach. Urban parklands contribute to habitat linkages established through vegetation corridors across the landscape (on both public and private land). Many scientists view 'connectivity conservation' as the best way of maximising nature's resilience against climate change and other threats (Taylor et al. 2007).
- School parkland programs redevelop school grounds from asphalt to green park space. These green spaces become integrated into broader urban ecological corridors contributing to the restoration of local urban ecosystems and stewardship among urban children and adults (Higgins 2006).
- The Royal Botanical Gardens which includes the National Herbarium of Victoria, Australian Research Centre for Urban Ecology, run programs focused on the protection and cultivation of Victoria's flora biodiversity. Programs include the Rare and Threatened species bed, as well as the Victorian Conservation Seedbank (Royal Botanic Gardens Melbourne 2009).
- Native reforestation programs, run on urban public land areas, contribute to biodiversity protection and further reduce greenhouse gas emissions through carbon capture (Australian Government NRM Team 2005).

4.1.3.5 Public land contributes to phyto-remediation

- Public land that supports plants and vegetation has an important function in retaining nitrogen thereby reducing nitrate pollution to stream and coastal waters (Cadenasso et al. 2008; Adriano et al. 2004)

4.1.3.6 Walking and cycling on public land contribute to environmentally sustainable urban areas

- Increased walking and cycling will contribute to reductions in greenhouse gas emissions. In 2004, 13.5% of Australia's national greenhouse gas emissions were derived from vehicle transport (Australian Local Government Association 2008).

4.1.4 Public land contributes to culturally rich and vibrant communities

4.1.4.1 Public land provides venues for artistic expression and cultural diversity

- Predominantly, art institutions such as the National Gallery of Victoria and the Victorian Art Centre are state-owned and publically accessible. On a smaller scale, many local community centres, public libraries, halls and public offices provide a venue for local community activities. These institutions contribute to the vitality, diversity and liveliness of urban areas, increasing their liveability (Arts Victoria 2008).
- Public spaces offer opportunities for art installations and performances. For example the various art installations along major roads and freeways.
- Streets are the sites of numerous cultural festivals which engage communities in accessible celebration and cultural experiences.

4.1.4.2 Public land hosts local, metropolitan and international sporting events

- Public sporting grounds and beaches enable participation in sports and surf lifesaving clubs. Membership of these clubs contributes to building cultural identity at local, regional and metropolitan levels (VicHealth 2009)
- Public facilities, ovals, swimming pools, sports stadiums and streets stage large scale sporting events. These events and the sites at which they are staged

contribute to the cultural fabric of the community (VicHealth 2009). Large scale sports events draw civic engagement and generate community revitalisation (Jarvie 2003).

4.1.4.3 Public land supports heritage sites and knowledge

- The Royal Botanic Gardens is furthering knowledge about, and fostering the conservation of, Australia's plant biodiversity (Royal Botanical Gardens 2009). The Royal Botanical Gardens also hosts an aboriginal heritage walk enabling experience of the rich heritage of the local Indigenous people (Koorie Heritage Trust 2009)
- Sites such as the Exhibition Buildings, Melbourne Museum, Federation Square and Captain Cook's Cottage all reside on public land. These, and many other less prominent sites, all contribute to knowledge about the heritage of Melbourne.
- In the urban, developed landscape of Melbourne, the remaining intact Indigenous cultural heritage sites are largely on public land.

4.1.5 Public land contributes to democratic and engaged communities

4.1.5.1 Public land and its management provides consultation and engagement opportunities

- Some public land is managed by community based committees or boards of management (Parks Forum 2008). Community participation in governance structures results in enhanced democracy.
- Public land provides opportunities for conservation and other groups to become involved in land management and related activities (Maller et al. 2008).

4.1.5.2 Public land provides a forum for community action

- Public land such as Federation Square, Collins Street, Spring Street and St Kilda Beach foreshores have hosted some of the largest public demonstrations Melbourne has witnessed (Macarthur et al. 2003). These demonstrations enable political expression within the broader community.

4.1.6 Summary

This review groups evidence from the literature of the 'public good' benefits of public land within five liveability domains. Each domain has multiple sources of evidence and at least one sub category of liveability contribution.

Two domains in particular are heavily populated with evidence: healthy, safe and connected communities, and sustainable built and natural environments. As a result there are a disproportionate number of sub categories of liveability contributions in each of these domains.

The literature review shows that specific public land sites make contributions to specific liveability domains. For example, some public land sites have heritage value whilst others have environmental value. No one site on its own delivers all five liveability outcomes. It is the combination of sites and their functions that operate as a network to deliver the range of liveability outcomes. Thus, together, the mix of public land within a network results in contributions to each of the liveability domains and therefore liveability more generally.

There are two important characteristics of public land networks that can impact on liveability outcomes: the supply of public land and the utilisation of public land sites – both matters of public policy. If we accept that public land contributes to liveability, a failure

to secure an adequate supply of public land means that governments and community members have reduced capacity to affect liveability for current and future generations. Equally, where the land is, what happens on the land and how it's managed makes a difference to liveability outcomes.

Key Message 5: Public land contributes to Melbourne's liveability. This contribution is dependent upon both the supply and utilisation of public land.

In summary, the liveability domains act as a framework or lens through which to understand multidisciplinary literature on the value of public land. The result is that there is strong evidence to support the view that public land contributes to liveability in general and more specifically to the liveability of metropolitan Melbourne. However, this literature does not measure the extent of the contributions made by public land and whether they are sufficient to meet the liveability goals. The following section explores how to measure this contribution.

4.2 Measuring the contribution of public land to liveability

This section of the report summarises a review of the literature from the perspective of how the contribution of public land to liveability can be measured.

4.2.1 Liveability goals and indicators

The literature review revealed any measurement of the contribution of public land to liveability requires goals which identify liveability priorities and indicators for measuring movement toward, or away from, these goals (VCEC 2008; Harrop 2008; Balsas 2004; Memon and Johnston 2008).

In the case of metropolitan Melbourne, government endorsed liveability goals do not exist. This makes the task of measuring liveability very difficult. This view is endorsed by VCEC who identify that a large amount of data relevant to liveability is collected in Victoria but the absence of a 'co-ordinated reporting framework' means that it is not possible to create a liveability report for Victoria (VCEC 2008).

"Developing a suite of liveability indicators that are directly linked to liveability policies and programs can allow policy objectives to be assessed, indicate how well a program is performing against its goals and objectives and indicate where policy objectives can be improved." (VCEC 2008 p 40)

In the absence of a government endorsed liveability framework, this report has adopted five liveability goals based on a well researched, and practitioner verified, community wellbeing framework.

As documented in the previous section, this framework was utilised to review the literature for evidence of the contribution public land makes to each of these goals. The findings were grouped into clusters of contributions under each goal. These clusters were discussed with the *Liveability Reference Group* and subsequently modified before being adopted as the key indicators for measuring the contribution of public land to Melbourne's liveability – see Table 2.

Table 2. Liveability goals and indicators for measuring the contribution of public land.

Liveability framework: goals and indicators
<p>Goal 1: Healthy, safe and inclusive communities</p> <p><u>Indicators</u></p> <ul style="list-style-type: none"> Physical health Mental health Social capital Perceptions of safety Sense of pride and attachment to place Early childhood development and lifelong learning
<p>Goal 2: Dynamic resilient local economies</p> <p><u>Indicators</u></p> <ul style="list-style-type: none"> Stimulated and sustainable economies
<p>Goal 3: Sustainable built and natural environments</p> <p><u>Indicators</u></p> <ul style="list-style-type: none"> Water quality Air quality Heat stress Sustainable biodiversity Environmentally sustainable urban areas Heritage sites and knowledge
<p>Goal 4: Culturally rich and vibrant communities</p> <p><u>Indicators</u></p> <ul style="list-style-type: none"> Artistic expression and cultural diversity Local, metropolitan and international sporting events
<p>Goal 5: Democratic and engaged communities</p> <p><u>Indicators</u></p> <ul style="list-style-type: none"> Consultation and engagement Community action

Not surprisingly a review of the literature reveals that qualitative and quantitative data that specifically measures the contribution of Melbourne's public land to these indicators does not exist. The next question then is how should these contributions be measured. This is the subject of the next section and a review of literature in this area raises as many questions as it answers.

Key Message 6: A co-ordinated reporting framework for understanding Melbourne's liveability does not exist. As a result there is no existing means of measuring Melbourne's liveability let alone the contribution that the public land network makes to it.

4.2.2 Measurement strategies

The literature review identified three strategies for measuring the contribution of public land to liveability and an overview of each is offered below. Examples of each measurement strategy are provided as appendices to this report.

4.2.2.1 Opportunity measurement and benchmarks

Because public land availability offers *opportunity* for enhanced liveability, one way to measure the contribution of public land to Melbourne's liveability is to measure the opportunity provided in relation to specific indicators of liveability. In this case, measurement may include:

- Amount of land and intended use;
- Location and the spread of opportunity; and
- Potential for linkages and partnerships.

This opportunity could then be benchmarked at a local government area level or at a metropolitan level and comparisons to other cities could be made. For example, the hectares of public land per capita. A review of policy literature in this area suggests that measurements are expressed as 'best practice guidance' or benchmarks to strive toward (ASR Research 2008).

Benchmarks of public land *availability* relate to land available for particular purposes/functions and the scale of catchment for that function. Take for example hospitals. Benchmarks may include the size of public land needed for a hospital and the number of hospital sites per capita. This could be used as a measure to indicate an opportunity for improving the *physical health* of the community.

Appendix Two provides examples of best practice benchmarks identified in the literature. It should be noted that they apply to municipal freehold land in some cases.

There are several benefits of an opportunities measurement and benchmark approach:

- The value of benchmarking the *availability* of public land is that it brings government attention to securing and preserving public land for future generations – a key goal for the Victorian Environmental Assessment Council. For example, the current UGB investigation provides an opportunity to explore the public land availability needed for urban growth to meet the five liveability goals not just housing development needs;
- They can highlight inequities of opportunity across metropolitan Melbourne. For example, do some local government areas have more public land available for physical health opportunity than others?;
- Benchmarks, such as the ones outlined in Appendix Two, focus on local communities;
- They provide minimum standards in relation to the provision of public land, without which we could be left with insufficient public land; and
- There are benchmarks in use which can easily be adopted for this investigation.

The down side of an 'opportunity measurement' is that it does not measure the actual benefits realised through public land availability. Other limitations include:

- Current public land benchmarks may not adequately support 'liveability' goals if

- established by government and the community;
- They do not reflect quality of space;
- Land provision benchmarks do not adequately address issues of connectivity, safety and access.
- They apply blanket measures to diverse communities with diverse natural land assets.
- They may be applicable in growth areas but not in established areas.
- They do not provide insight into the causal relationship between land and liveability outcome.

4.2.2.2 Performance measurement

A second way to measure the contribution of public land to Melbourne's liveability is to consider the actual use of public land and the contribution this use makes to Melbourne's liveability. This could involve measuring the performance of particular public land sites. To take public open space as an example, the measurement would relate to how well a site or sites provide for passive and active recreation: how many people use a park, what they use it for and how have they benefitted from it.

Performance measures are mostly the purview of the government departments who manage the public land and its uses. The measures relate to program outcomes. For example, Arts Victoria collects data on the performance attendance rates at facilities it funds etc.

The literature review indicates that most public land value is measured in this way. Measurement is of how well a site (facility, program, park, track) performs the particular function for which it was intended. Appendix Three provides examples of public land performance measures in use in Victoria.

The benefits of this approach are that government departments responsible for the management of public land will be likely to have performance measurement data available for the sites they manage, and this data will provide evidence of current activity thus giving a sense of whether the status quo is satisfactory.

However, a key challenge is that these measurements may tell us more about the performance of government programs than outcomes in the community. Other limitations include that they do not:

- Reflect any short falls in service provision to the community -i.e. many children may be involved with AusKick which is evidenced in the data, but many more may want to be involved with AusKick or with soccer or hockey which is not evidenced in the data.
- Provide clear directions for policy makers and decision makers about land protection.
- Provide insight into areas of improvement in terms of facilities or opportunities missed etc.

Similarly to a benchmarking approach, a limitation of a performance measurement approach is that the examples in the literature relate to the performance of particular types of public land or government programs rather than the whole public land network.

4.2.2.3 Community outcome measurement

An 'outcome measurement' approach measures the community outcomes which result from the provision of public land. For example, the literature suggests that public land can contribute to community safety. The community outcome is 'community safety' and the measure would identify changes to community safety as an outcome of public land provision. Appendix Four provides examples of community outcome measures.

Benefits of an outcomes measurement approach are that it:

- Brings government attention to whether changes to community outcomes are occurring and starts to answer the question – 'Is Melbourne becoming more liveable?'
- Can combine subjective and objective aspects.

But, as Innes (1990) warns, outcome indicators:

"...give us an idea about whether things are improving generally along the dimensions that interest us, but cannot provide evaluations of specific programs." (Innes 1990, 105)

Other challenges of an outcome measurement approach are that:

- The link between the outcomes, for example, improved community safety, and the contributions made by public land to that outcome, is tenuous. Isolating the contribution that public land makes to community outcomes is difficult. A direct causal link between public land and specific outcomes will require stringent and lengthy investigation.
- Public land catchments vary in scale so there is a question about the size of the community expected to experience outcomes from a particular site.
- There is no data currently available.

4.2.3 Other measurement considerations

Two additional measurement considerations emerged in the literature review.

Firstly, as mentioned in Section 2, there are implications of the lack of public distinction between different sorts of public land for any measurement of its benefits. Public land as defined by VEAC's Terms of Reference constitutes large proportions of the spaces contributing to Melbourne's liveability. However, these spaces are also made up of municipal freehold land and other freehold land resources.

The literature review revealed that:

- Communities do not differentiate between different sorts of public land (The Select Committee on Public Land Development 2008). In fact it is unclear if communities are aware of land ownership per se when it comes to the 'public' spaces they value.
- Public land is valued by virtue of the opportunities it provides rather than by virtue of its ownership.
- Successful public space networks may include a mixture of public, municipal and other freehold land, while the value of large crown land areas can be diminished by inappropriate uses bordering the area.
- Public land can be used in partnership with other types of land such as municipal freehold and green wedge land to leverage increased liveability outcomes. Examples include: community hubs, walking and cycling trails, and open space networks.

Measurement that requires community perceptions of public land's contribution to liveability may not result in clear findings for VEAC. In addition, measuring the benefit of public land, when that public land is co-dependant on municipal freehold or other freehold land may prove equally challenging.

4.2.4 Summary and a proposed way forward

Liveability measurement is clearly a challenging task but an important one when having liveable cities is a goal of governments. In Victoria, liveability is a policy term with growing significance but clearly defined goals and indicators have not yet been adopted by the State Government. This report proposes five general liveability goals and seventeen indicators specifically pertinent to the contribution of public land to Melbourne's liveability.

The literature review suggests that there are three strategies in use which seek to measure

the benefits of public land. These strategies tend to be utilised for measuring: public land supply; particular public land programs with little reference to liveability; and, community level outcomes with little reference to public land.

Each of the reviewed measurement strategies has its strengths and weaknesses, but could be used in combination to assess the value of public land to the liveability of metropolitan Melbourne. Appendix Five contains a list of measurement questions that could be posed to measure this contribution.

Key Message 7: A new strategy to specifically measure the contribution of the public land to Melbourne's liveability is needed. Existing measurement strategies could be used in combination to overcome any of their individual weaknesses.

A further consideration to be taken into account when assessing the contribution of public land relates to conflict between the various liveability goals. For example, selling public land may generate an economic benefit but may decrease opportunities for physical activity. Transport is perhaps the greatest example of where a tension between goals exists – public land delivers roads as well as environments for remediating the impact of car emissions on the environment.



Yarra Bend Park

5. CONCLUSION

Like other Australian cities Melbourne is under pressure with trends such as climate change and population growth likely to have an impact on Melbourne's liveability. In the face of these pressures, a key challenge for governments is to continue to create the sort of city we want: for all inhabitants and for future generations to come.

Public land is one vehicle for governments to secure and maximise benefits for communities. The characterisation of those benefits is based on the goals of government and the values of communities (Burroughs 2001) and 'liveability' is a policy concept of increasing interest to the Victorian state government. This liveability lens provides a useful tool for understanding how Melbourne is progressing as a city and for reporting these changes. However, without a clear set of liveability goals and a reporting framework, the full value of public land may never be realised.

This report makes a unique contribution to the task of understanding the contribution of public land in Melbourne's liveability by identifying a set of liveability goals and applying them to a review of the public land literature. The five goals are based on a community wellbeing framework developed to assess the social, economic, environmental, cultural and governance outcomes in communities and have strong resonance with definitions utilised by recent Victorian Government reports on Victoria's liveability. Through an application of the goals to a review of the public land literature, a strong link is revealed between public land and a full range of liveability outcomes.

Further, the literature review reveals clusters of liveability benefits within each goal. These are reframed as a set of 17 indicators of liveability which the literature, along with confirmation from a *Liveability Reference Group*, suggests are most relevant to public land.

The report argues that, based on the literature review findings, Melbourne's public land network makes contributions to the liveability of Melbourne. A supply of public land provides a set of opportunities for liveability goals to be realised and it is important for future generations that these opportunities are preserved. In addition, the resources, services and facilities provided on public land impact on its utilisation and therefore on liveability outcomes. Both the supply and utilisation of the public land network are important.

Finally, the report considers how to measure this contribution to enable further understanding of the role of Melbourne's public land network in maintaining and enhancing liveability. Three measurement strategies are identified and an outline of the strengths and weaknesses of each is provided.

6. REFERENCES

- Abrahams, A. B., Gaballa, S. 2008. Food Miles in Australia: A preliminary study of Melbourne, Victoria. *CERES Community Environment Park*. www.ceres.org.au sourced April, 2009.
- Adriano, D.C., Wenzel, W.W., Vangronsveld, J. & Bolan, N.S. 2004. Role of assisted natural remediation in environmental cleanup. *Geoderma*, Vol. 122, pp. 121-142.
- Arts Victoria 2008. The Role of Arts and Culture in Liveability and Competitiveness – Precis; submission to the Victorian Competition and Efficiency Commission's *Inquiry into Enhancing Victoria's Liveability*.
- Australian Bureau of Statistics 2006. Australian Demographic Statistics 2006. Australian Commonwealth Government.
- Australian Bureau of Statistics 2006b. *The air and atmosphere: air quality - Measures of Australia's Progress, 2006*. Australian Commonwealth Government.
- Australian Bureau of Statistics 2008. *Population by Age and Sex: Regions of Australian 2007*. Australian Commonwealth Government.
- Australian Bureau of Statistics 2009. *Environmental views and behaviour, 2007-2008*. Data released 15 January 2009.
- Australian Government NRM Team 2005. *Biodiversity: On Our Agenda*. Commonwealth of Australia. <http://www.nrm.gov.au/publications> accessed June 2009
- Australian Local Government Association 2008. Healthy Spaces and Places: Towards a National Planning Guide. *Draft for Discussion Purposes - From Scoping Stage*. Australian Local Government Association.
- Australian Social & Recreational Research 2008. Planning for Community Infrastructure in Growth Areas. <http://www.wyndham.vic.gov.au> accessed June 2009.
- Balsas, C. J. L. 2004. Measuring the Liveability of an Urban Centre. *Planning, Practice & Research*, Vol. 19, No. 1, pp. 101-110, February 2004.
- Burrouhs, R. 1966. Should Urban Land Be Publicly Owned. *Land Economics*, Vol. 42, No. 1 pp. 11-20
- Cadenasso, M.L., Pickett, S.T.A., Groffman P.M., Brush G.S., Galvin M.F., Grove J.M., Hagar G., Marshall V., McGrath B.P., O'Neil-Dunne J., Stack W.P., Troy A.R. 2008. Exchanges across Land-Water-Scape Boundaries in Urban Systems: Strategies for Reducing Nitrate Pollution. *Annals of the NY Academy of Sciences*, Vol. 1134, pp. 213-232.
- Cantrill, J. 1998. The environmental self and a sense of place: Communication foundations for regional ecosystem management. *Journal of Applied Communication Research* 26(3): 301-318.
- City of Melbourne 2007. *Active Melbourne Strategy*. City of Melbourne.
- Climate Change Taskforce 2008. *Future Map-Melbourne 2030*. An Initiative of the Committee for Melbourne.
- Commissioner for Environmental Sustainability Victoria 2008. *State of the Environment Victoria 2008*. Victorian State Government.
- Commonwealth Science and Industrial Research Organisation 2007. *Climate change in Australia: Technical Report 2007*. <http://www.csiro.au/resources/Climate-Change-Technical-Report-2007.html#3> sourced May, 2009.

Danish Architecture Centre 2009. *Sustainable Cities*. <http://sustainablecities.dk/> sourced April 2009.

Department of Education and Early Childhood Development 2007. *Best Start*. Department of Human Services. Victorian State Government.

Department of Environment and Climate Change 2007. *Who Cares About Water and Climate Change in 2007?* Department of Environment and Climate Change. New South Wales Government.

Department of Human Services 2009. *Because Mental Health Matters: Victorian Mental Health Reform Strategy 2009 – 2019*. Department of Human Services. Victorian State Government.

Department of Infrastructure 2002. *Melbourne 2030: Planning for Sustainable Growth*. Department of Infrastructure. State Government Victoria.

Department of Planning and Community Development 2006. *A Fairer Victoria: Progress and Next Steps*. Department of Planning and Community Development. State Government Victoria.

Department of Planning and Community Development 2007. *A Fairer Victoria: Building on our commitment*. Department of Planning and Community Development. State Government Victoria.

Department of Planning and Community Development 2008. *A Fairer Victoria: Strong People, Strong Communities*. Department of Planning and Community Development. State Government Victoria.

Department of Planning and Community Development 2009a. *A Fairer Victoria: Standing Together in Tough Times*. Department of Planning and Community Development. State Government Victoria.

Department of Planning and Community Development 2009. *Melbourne 2030: A Planning Update, Melbourne @ 5 Million*. Department of Planning and Community Development. State Government Victoria.

Department of Premier and Cabinet 2004. *Beyond 5 Million*. Department of Premier and Cabinet. State Government Victoria.

Department of Sustainability and Environment 2002. *Victoria's Native Vegetation Management: A Framework for Action*. Department of Sustainability and Environment. Victorian State Government.

Department of Sustainability and Environment 2007. *Our Water Our Future: The Next Stage of the Government's Water Plan*. Department of Sustainability and Environment. Victorian State Government.

Department of Sustainability and Environment 2008. *Climate change in Port Phillip and Westernport*. Department of Sustainability and Environment. State Government Victoria.

Department of Transport 2008. *Transport Demand Information Atlas for Victoria 2008*. Department of Transport. State Government Victoria.

Economist Intelligence Unit 2009 Liveability survey <http://www.eiu.com/>

Eddington, R. 2008. *Investing in Transport: East West Link Needs Assessment*, Victorian State Government.

Elliot, S. 2003. *Patches of Green: Early Childhood Environmental Education in Australia: Scope, Status and Direction*. EPA Social Research Series. Environmental Protection Authority. New South Wales Government.

Environment Protection Authority 2008. *Melbourne Mortality Study: Effects of Ambient Air*

Pollution on Daily Mortality in Melbourne 1991-1996. Environmental Protection Authority Victoria. State Government Victoria.

Environmental Protection Agency 2008. Reducing Urban Heat Islands: Compendium of Strategies -Urban Heat island basics. Environmental Protection Agency. United States of America.

Ferris, J., Norman, C. & Sempik, J. 2001. People, Land and Sustainability: Community Gardens and the Social Dimension of Sustainable Development. *Social Policy and Administration*. 35(5). 559-568.

Garnaut, R. 2008. *The Garnaut Climate Change Review Final Report*. Australian Commonwealth Government.

Gehl, J, Kaefer L J & Reigstad S 2006. Close encounters with buildings. *Urban Design International* 11, 29-47.

Halweil, B. & Nierenberg, D. 2007. Farming the Cities. Starke, L. (ed). *2007 State of the World: Our Urban Future*, New York. pp. 48-63

Harrop, L .2008 Tests for Liveability: Keeping pace with change. *Social City 23 RMIT* Victoria.

Heritage Victoria 2008. *Victorian State of the Historic Environment Survey, Analysis and Report*. <http://www.heritage.vic.gov.au> sourced May, 2009.

Higgins, N. 2006. *How can schools become an integral link in the open space network?* Opens Space Seattle 2100, <http://www.open2100.org/> sourced April, 2009.

Hoehner, C.M., Brennan Ramirez, L.K., Elliott, M.B., Handy, S. & Brownson, R.C. 2005. Perceived and Objective Environmental Measures and Physical Activity Among Urban Adults. *American Journal of Preventive Medicine*. Vol. 28 No. 2S2 pp.105-116.

Innes J. 1990. Knowledge and Public Policy: The Search for Meaningful Indicators. Transaction Publishers.

Jacobs, J. 1961. *The Death and Life of Great American Cities*. Random House, Random House, New York.

Jarvie, G. 2003. Internationalism and Sport in the Making of Nations. *Identities* 1070-289X. Oct-Dec 2003, v10 i4, p537(15).

Kaplan, R. and Kaplan, S. 1989. *The Experience of Nature: A Psychological Perspective*. Cambridge University Press, Cambridge, New York.

Katcher, A., Friedmann, E., Beck, A. and Lynch, J. J. 1983. Looking, talking, and blood pressure: the physiological consequences of interaction with the living environment. In Katcher, A., and Beck, A. (eds) *New Perspectives on Our Lives with Companion Animals*. University of Pennsylvania Press, Philadelphia, pp. 351-360.

Kavanagh A, Goller J, King T, Jolley D, Crawford D, & Turrell G. 2005. Urban area disadvantage and physical activity: a multilevel study in Melbourne, Australia. *J Epidemiol Community Health*, 59:934-940.

Kingsley, J. and Townsend, M. 2006. 'Dig In' to Social Capital: Community Gardens as Mechanisms for Growing Urban Social Connectedness., *Urban Policy and Research: an Australian and New Zealand guide to urban affairs*, Vol 24 No 4, pp. 525-537.

Koorie Heritage Trust 2009. <http://www.koorieheritagetrust.com/> sourced May, 2009.

Legislative Council Select Committee on Public Land Development 2008. *Legislative Council Select Committee on Public Land Development: Final Report*. State Government Victoria.

- Litman, T. 2002. Evaluating Transportation Equity. *World Transport Policy & Practice*. Volume 8, No. 2, Summer 2002, pp. 50-65.
- Lloyd K. & Auld, C. 2003. Leisure, Public Space and Quality of Life in the Urban Environment. *Urban Policy and Research*, Vol. 21, No. 4, 339-356, December 2003.
- Louv, R. 2008. *Last Child in the Woods: Saving Our Children from Nature Deficit Disorder*. Workman Publishing, New York.
- Macarthur, J., Graham C. 2003. Federation Square, *Architecture Australia*; Mar/Apr2003, Vol. 92 Issue 2, p46, 18p.
- Maller, C., Townsend, M., St Leger, L., Pryor, A., Prosser, L., Moore, M. 2008. *Healthy Parks Healthy People: The health benefits of contact with nature in a park context*. Deakin University and Parks Victoria.
- Maller, C. (in press). 'Promoting Children's Mental, Emotional and Social Health through Contact with Nature: A Model', Health Education.
- Malone, K. 2007. The Bubble-Wrap Generation: Children Growing Up in Walled Gardens. *Environmental Education Research* 13(4), 2007, 513-527.
- Manzo, L.C. 2005. For better or worse: Exploring multiple dimensions of place meaning. *Journal of Environmental Psychology*, 25(1), pp67-86.
- Marsden Jacobs and Associates 2004. *Economic Analysis of the Value of Public Land in Victoria*. Department of Sustainability and the Environment. State Government Victoria.
- Melbourne Water 2005. *Protecting Melbourne's Water Catchments*. Melbourne Water.
- Mercer 2009. *Defining 'Quality of Living'*, <http://www.mercer.com/qualityofliving> sourced May, 2009.
- Mind. 2007. *Go Green to Beat the Blues*. Press release. National Association for Mental Health. www.mind.org.uk/News+policy+and+campaigns/Press/Mind+Week+ecotherapy.htm
- Moore, M., Townsend, M. & Oldroyd, J. 2006. Linking Human and Ecosystem Health: The Benefits of Community Involvement in Conservation Groups. *EcoHealth*, Vol. 3 No. 4, pp. 255-261.
- Parks Forum 2008. *Value of Parks*, Parks Forum in partnership with IUCN World Commission on Protected Areas (WCPA) and The People and Parks Foundation. <http://www.parksforum.org/> sourced April, 2009.
- Parks Victoria 2002. *Linking People and Spaces*. Parks Victoria.
- Parsons, R. 1991. The Potential Influences of Environmental Perception on Human Health. *Journal of Environmental Psychology*, 11: 1-23.
- Peacock, J., Hine, R., Pretty, J. 2007. *Got the Blues, then find some Greenspace: The Mental Health Benefits of Green Exercise Activities and Green Care*. Mind Week Report, February 2007, Centre for Environment and Society, University of Essex, Colchester.
- Royal Botanic Gardens Melbourne 2009. <http://www.rbg.vic.gov.au> sourced May, 2009.
- Rowe, R & Thomas, A, 2008. *Climate Change Adaption: A Framework for Local Action*. McCaughey Centre: VicHealth Centre for the Promotion of Mental Health and Community Wellbeing, School of Population Health, University of Melbourne.
- Slattery D. 2005. Scotland's most famous mountain range: Land 'ownership' in Scotland, *Journal of Adventure Education & Outdoor Learning*. Vol 5 (1), 119 - 130, 2005

- SMEC Australia 2007. *Climate Change Adaptation Actions For Local Government*. Australian Greenhouse Office Department of the Environment and Water Resources. Australian Commonwealth Government.
- Sports and Recreation Victoria 2005. *Everybody Wins: Victoria's Innovative Sports and Recreation Industry*. Department of Victorian Communities. State Government Victoria.
- Sullivan, W. C., Kuo, F. E., & Depooter, S. F. 2004. *The Fruit of Urban Nature: Vital Neighborhood Spaces*. *Environment and Behavior* 2004; 36; 678.
- Taylor, A.F., Kuo, F.E. and Sullivan, W.C. 2002. Views of nature and self-discipline: Evidence from inner city children. *Journal of Environmental Psychology* 22: 49-63.
- Taylor, P., Fahrig L. & With K. A. 2001. Landscape Connectivity: A Return to the Basics. In Crooks, K. & Sanjayan M. (ed) *Connectivity Conservation*. Conservation Biology Series (14). Cambridge University Press.
- Townsend, M. Ebdon, M. 2006. *Feel Blue Touch Green: Final Report*. Deakin University, Barwon Health, Parks Victoria, Alcoa Anglesea, ANGAIR and Surf Coast Shire.
- Ulrich, R. S., Dimberg, U. and Driver, B. L. 1991. Psychophysiological Indicators of Leisure Benefits. In: *Benefits of Leisure* (Ed. by Driver, B. L., Brown, L. R. and Peterson, G. L.). pp. 73-89. Venture Publishing, State College, Pennsylvania.
- United Nations Department of Public Information 2002. *Water: A Matter of Life and Death*. United Nations.
- VicHealth 2007. *Burden of Disease Due to Mental Illness & Mental Health Problems 2007*. VicHealth. State Government Victoria.
- VicHealth 2008. *People, Places, Processes: Reducing Health Inequalities Through Balanced Health Promotion Approaches*. VicHealth. State Government Victoria.
- VicHealth 2008b. *A Sporting Chance: The inside knowledge on healthy sports clubs*. VicHealth. State Government Victoria.
- VicHealth 2009. *Participation in community sport and active recreation*. VicHealth. State Government Victoria.
- VicHealth 2009b. *Obesity and Overweight Fact Sheet*. VicHealth. State Government Victoria.
- Victorian Coastal Council 2008. *Victorian Coastal Strategy 2008*. Victorian State Government
- Victorian Competition & Efficiency Council 2008. *A State of Liveability: An Investigation into Enhancing Victoria's Liveability Final Report*. State Government Victoria.
- Victorian Government 2009. *Victorian Government Response to the VCEC Final Report: A State of Liveability: An Inquiry into Enhancing Victoria's Liveability April 2009*
- Victoria Police 2007. *Community Safety*. Department of Justice. State Government Victoria.
- Wendel-Vos, G.C.W., Schuit, A.J., De Neit, R., Boshuizen, H.C., Saris, W.H.M. and Kromhout, D. 2004. Factors of the Physical Environment Associated with Walking and Bicycling. *Medicine and Science in Sports and Exercise* 36(4): 725-730.
- West, S. and Badham, M. 2008. *A Strategic Framework for Creating Liveable New Communities: Final Report Prepared for the Growth Areas Authority*. Growth Areas Authority Victoria.
- Whitzman, C 2008. *The Handbook of Community Safety, Gender and Violence Prevention: Practical Planning Tools*. Earthscan Publications Australia.
- White, R. 1999. *Hanging Out: Negotiating Young People's Use of Public Space*. National Crime

Prevention, Commonwealth Attorney-General's Department, ACT.

Wilson, E., Nicol, F., Nanayakkara, L. & Ueberjahn-Tritta, A. 2008. Public Urban Open Space and Human Thermal Comfort: The Implications of Alternative Climate Change and Socio-economic Scenarios. *Journal of Environmental Policy and Planning*, Vol. 10, No. 1, pp. 31-45.

Wiseman J, Heine W, Langworthy A, McLean N, Pyke J, Raysmith H, Salvaris M 2006.

Measuring Wellbeing: Engaging Communities: developing a community indicators framework for Victoria: The final report of the Victorian Community Indicators Project (VCIP).

Wiseman, J 2007. Climate Change and Social Justice: towards an Australian Research and Policy

Agenda. *Just Policy*. 1 (46): 8-11.

World Health Organisation 1986. *Ottawa Charter for Health Promotion*, World Health Organisation.

Zlot, A., Schmid, T. 2005. Relationships Among Community Characteristics and Walking and Bicycling for Transportation or Recreation. *American Journal of Health Promotion* Mar/Apr2005, Vol. 19 Issue 4, p314-317.

Zoos Victoria 2009. http://www.zoo.org.au/Melbourne/Learning_Experiences sourced April, 2009.

APPENDIX ONE

LIVEABILITY REFERENCE GROUP

Terms of Reference

The purpose of the reference group is to provide a range of information to the consultants on the characteristics of liveability and, in particular, on the contribution of public land to Melbourne's liveability. It is intended that the reference group be comprised of members with knowledge or expertise in one or more of the following areas:

- public land policy;
- the public land estate within the investigation area;
- biodiversity on public land;
- open space and recreation;
- strategic plans for the future of Melbourne, particularly Melbourne 2030;
- local government strategies for maintaining and promoting liveable communities;
- urban planning; and
- urban development and infrastructure.

APPENDIX TWO

Examples of benchmarks related to public land *availability*.

Healthy, Safe and Inclusive Communities

INDICATOR	FUNCTION*	BEST PRACTICE BENCHMARKS	COMMENTS
Physical health	Community Based Health Care Municipal Level; 1 Municipal Community Based Health Care Low Level; Up to 30,000	While no preferred land area allocations for hospital sites have been identified, existing hospitals sites in Melbourne's outer growth areas are typically located on 10 to 15 ha. Land area 0.6 ha for standalone facility. An additional 0.4 ha if combined within a mid level council community centre site (which is on a land parcel of 1 ha) (ASR Research).	Services at this level include emergency departments, radiotherapy, day surgery and/or procedures involving a high degree of clinical risk.
Physical health	Maternal & Child Health Service Low Level; Up to 30,000 people	New school sites are typically 3.5 ha. This would have to be increased to around 3.8 ha to accommodate the early years' facility. The integrated early years' facility of this scale would provide 90 to 100 square metres for a Maternal & Child Health component (ASR Research).	Recent State Government policy aims to locate Maternal & Child Health services on government primary school sites as part of an integrated early years' facility. Presently Maternal & Child Health services are accommodated within Council owned community centres. The new policy direction will mean that new schools need to provide space to accommodate an integrated early years facility.
Physical health	Active open space reserves Low Level; Up to 10,000 people	A minimum of 8 ha (up to 10 ha) for a neighbourhood level active open space reserve (ASR Research).	Active open space reserves consist of on public land, municipal land and other freehold green wedge land.
Physical health	Active open space reserve High Level; 2 Municipal regions	Land area requirements for a higher order recreation reserve will depend on the choice of component elements. Land area: They could range from 10 ha to more than 50 ha. As a general guide 30 ha will be required to accommodate: <ul style="list-style-type: none"> • Active outdoor playing fields (3 full sized AFL ovals and 3 soccer pitches) • A typical council leisure centre (including an aquatics component) 	Active open space reserves consist of on public land, municipal land and other freehold green wedge land.
Physical health	Neighbourhood level passive open space reserves: Low Level; Up to 10,000 people	Land area: <ul style="list-style-type: none"> • A minimum of 0.7 ha, but preferably 1 ha for a neighbourhood level passive open space reserve. Distribution: <ul style="list-style-type: none"> • 400 – 500 metres from residential dwellings 	Neighbourhood level passive open space reserves are located on public land and municipal land

* Function descriptors have been adopted from Australian Social and Recreation Research (2008).

INDICATOR	FUNCTION*	BEST PRACTICE BENCHMARKS	COMMENTS
Physical health	Higher order passive open space reserves High Level; 2 Municipal regions	Land area requirements for a higher order recreation reserve will depend on the choice of component elements. Land Area: From 10 ha to more than 50 ha. As a general guide 30 ha will be required to accommodate: <ul style="list-style-type: none"> • Active outdoor playing fields (3 full sized AFL ovals and 3 soccer pitches) • A typical council leisure centre (including an aquatics component) • A 10 court tennis facility • Perimeter pedestrian / bicycle trail • A higher order playground (e.g.adventure playground) Building area: Refer to other discrete infrastructure items listed that may form part of the higher order reserve (e.g. Council leisure centres)	Higher order passive open space reserves consist of on public land, municipal land and other freehold green wedge land.
Physical health	Outdoor netball Facilities Mid Level; Up to 60,000	Land area: Approximately 7,200 square metres for 8 courts (based on approximately 900 square metres per court).	Netball courts are facilitated by public land, municipal land and privately owned land.
Social capital	Multi-purpose community centres Low Level; Up to 10,000 people	Land area <ul style="list-style-type: none"> • A minimum of 0.8 ha Multi-purpose community centres facilitate a wide variety of services. These may include: <ul style="list-style-type: none"> • Youth services • Arts and cultural events • Meeting rooms • Kindergartens • Maternal & Child Health 	Multi-purpose community centres are accommodated by both public land and municipal land resources
	Multi-purpose community centres Mid Level; Up to 60,000 people	Land area <ul style="list-style-type: none"> • A minimum of 1.5 ha Multi-purpose community centres facilitate a wide variety of services. These may include: <ul style="list-style-type: none"> • Youth services • Arts and cultural events • Meeting rooms • Kindergartens • Maternal & Child Health 	Multi-purpose community centres are accommodated by both public land and municipal land resources

INDICATOR	FUNCTION*	BEST PRACTICE BENCHMARKS	COMMENTS
Community safety	Emergency Services: Victoria Police, Fire (Country Fire Authority), Victorian State Emergency Services (VICSES), Metropolitan Ambulance Service (MAS)	Land area <ul style="list-style-type: none"> • Police – 0.4 ha to 0.6 ha • Fire and SES – 0.4 ha • Ambulance – 0.4 ha • SES Unit – 0.25 ha 	
Community safety	Judicial facilities	Land area <ul style="list-style-type: none"> • 1 ha for a stand-alone judicial facility • 2 ha where an integrated provision strategy with the Victoria Police is identified 	
Early childhood and life long learning	Government Primary Schools Low Level; Up to 10,000 people	The current minimum site area is 3.5 ha. This will need to be increased when additional community infrastructure such as early years' facilities are located at the school sites. A Primary School (Prep to Year 6) requires a long-term enrolment in the order of 451 / 475 to be justified.	
Early childhood and life long learning	Government Secondary Schools: Low level; Up to 30,000 people	A Secondary College (Year 7 to Year 12) requires a long-term enrolment of 1,100 to be justified. The minimum area is 8.4 ha These will need to be increased if additional community infrastructure such as indoor recreation centres, etc. are located at the school sites. • For example, where a secondary college (7-12) incorporates a 4 court indoor stadium, a performing arts facility (with 400 seat capacity), and the equivalent a full sized AFL oval playing area, the overall site allocation would need to increase from 8.4 to approximately 12 ha	
Early childhood and life long learning	Specialist Schools: Mid Level, up to 60,000 people	Land area <ul style="list-style-type: none"> • Stand-alone facility – 2.4 ha • Integrated within a P-12 facility 12.0 ha 	

INDICATOR	FUNCTION*	BEST PRACTICE BENCHMARKS	COMMENTS
Early childhood and life long learning	Higher Education Facilities	Traditional greenfield models of provision indicate that campuses can range from 10 to 30 ha. Additional land and buildings may be required if the facility is located at a school site – potentially around 1-2 ha and 400-800 square metres. A new purpose built site would definitely require land and building footprint. The size will depend on the sale of the operation - allow 2-3ha and 1500-3000 square metres.	
Early childhood and life long learning	Centre Based Libraries: High Level; 60,000 people to a whole municipality	Land area required: 1 to 1.5 ha	

APPENDIX THREE

Examples of performance measures

Health, safe and inclusive communities

INDICATOR	MEASURE	POSSIBLE DATA SOURCE	COMMENTS
Physical Health	Participation levels in sporting and recreational activities on public land	Australian Sports Commission, Sports and Recreation Victoria (DPCD), Australian Bureau of Statistics Sports and Recreation Victoria (DPCD) works with the Australian Sports Commission to produce an Annual Report on Participation in Exercise, Recreation and Sport for Victoria. Participation in 'Recreation areas' (including coastal areas, rivers, lakes, National/State parks), and also for 'cultural' events' were recorded in 1996 in the ABS' 'Leisure Participation' Report	No known data exists in this area which specifically relates to public land. This data is not exclusive to the Melbourne Metropolitan region.
	Numbers of people who use public spaces for regular walking or cycling	Department of Transport, Bicycle Victoria Department of Transport published the Transport Demand Information Atlas in 2008 which contains data on walking and cycling as transport to work.	This data does not include recreational walking and cycling activity.
	Number of residences located with walking distance to a park (400m)	City of Melbourne <i>Municipal Strategic Statement: Performance Monitoring Report 2004</i> provides this data.	This data is only relevant to one municipality within the Melbourne Metropolitan region. An audit of information held by other councils might be appropriate.
Mental Health	Participation levels in ecotherapy activities on public land	Parks Victoria <i>Feel Blue Touch Green</i> was a study undertaken by Parks Victoria, Barwon Health and Deakin University in 2003-2004.	There is currently no data on the number of ecotherapy programs or participants on public land.

INDICATOR	MEASURE	POSSIBLE DATA SOURCE	COMMENTS
	Availability of opportunities for participation in community gardens	Cultivating Community, Australian City Farms and Community Garden Network Both organisations hold records of where Melbourne's community gardens are located and accompanying facilities and opportunities.	An audit of information on community gardens in Melbourne's Metropolitan region would need to be undertaken for an understanding of how community gardens are currently contributing to Melbourne's liveability.
Sense of pride and attachment to place	Number of people visiting attractions hosted on public land	Sports and Recreation Victoria (DPCD) Information on attendance of events on public land is held by a dispersed collection of bodies.	An audit of information on attendance at events on public land would provide data to reflect the extent to public land facilitates community involvement and pride.
	Membership of friends of parks and conservation groups	Parks Victoria	An audit of the information relating to the Melbourne Metropolitan region would reflect how public land facilitates community involvement and pride.
	Public land provides space for social interaction and community connection	Townsend & Marsh (2004) Townsend & Marsh compiled a report titled, <i>Exploration of the Health and Wellbeing Benefits of Membership of Truganina Explosives Reserve Preservation Society</i> . The report provides evidence of a sense of community within groups of volunteers involved in the maintenance & management of public land.	This study provides methodological examples of how to measure liveability outcomes relating to public land access, programs and use. The study compiled results from subjective surveys and the application of Buckner's Neighbourhood Cohesion Scale (Buckner 1988).
	Public spaces contribute to strong attachment to place and engender a higher perceived quality of life	Manzo, L.C. (2005) <i>For better or worse: Exploring multiple dimensions of place meaning</i> , established that people establish natural environments.	This study provides methodological examples of how to measure liveability outcomes relating to public land access, programs and use. The study based its findings on subjective surveys and particular stories told by people in relation to their relationship with place.
Early childhood development and lifelong learning	Participation rates in early childhood and lifelong learning activities held in venues on public land Library	ABS Kindergarten participation rates. Local Councils Library usage rates.	Not all kindergartens are on public land as defined by VEAC
	Number of schools with outdoor environmental education programs	Department of Education, Elliott S (2003) <i>Patches of Green - Early Childhood Environmental Education in Australia: Scope, Status and Direction</i> provides data on outdoor environmental education programs.	An audit of this information and information from the Department of Education could reveal how school programs are extended and enhanced through the availability of natural environments on public land.

Dynamic, resilient local economies

INDICATOR	MEASURE	POSSIBLE DATA SOURCE	COMMENTS
Employment	Employment related to the provision and management of public land and associated facilities, events etc	State Government Departments, organising bodies, Australian Bureau of Statistics, CSIRO, ACF, ASCO, ACTU keep records of publically run events which are held on public land. Much of this information is not in the public domain. ABS data on occupation and employment	An audit of this information would provide insight to the contribution public land makes to enabling employment and stimulating the economy. An audit of ABS occupation and employment figures may provide estimations on jobs numbers which result from public land. A proportion of the labour force organising events on public land many be employed in roles are not obviously related to public land. For example, the Mother's Day walk is organised by the AntiCancer Council. Certain employment positions within this agency may be viewed as connected to public land facilitation, however this would not be clear within general occupation and employment surveys. Further, it is not certain that the Mother's Day walk would not proceed without public land availability.

Sustainable built and natural environments

INDICATOR	MEASURE	POSSIBLE DATA SOURCE	COMMENTS
Pollution concentration	Number of days when pollution concentration exceed NEPM guidelines	Environment Protection Authority, Australian Bureau of Statistics, Melbourne University, Monash University, CRC for Greenhouse Accounting Australia, Local Councils ABS SRIV publish air quality figures.	Currently there is no data that matches pollution concentration with public land acreage. Air quality figures are not reported by local government area.
	Individual tree carbon mass	Melbourne University use Stratum and i-tree to calculate ecosystem services value and economic value of trees (carbon storage, air filtration, etc.). While Monash University have also trialled programs, CityGreen and ArcGIS, that model this. The CRC for Greenhouse Accounting Australia's tree carbon calculator allows calculations to estimate the carbon mass of individual trees.	Stratum and i-tree, CityGreen and ArcGIS would need to be further calibrated to suit Australian vegetation and conditions. An audit of all trees on public land within the Melbourne metropolitan region is required to measure the public land contribution to carbon mass
Heat stress levels	Native vegetation cover of habitat hectares (Ha or km ²) tied with rates of carbon sequestration	Monash University A weather monitoring station in Preston provides basic climatic data (e.g. air temp) for analysis at Monash University.	This information provides info on temperatures relative to the location of the weather station. It does not correlate temperature with vegetation coverage.
Urban parks sustain biodiversity	Proportion of built to natural environment	Municipal Councils Councils hold details of land use zoning and usage data.	This data would provide an idea about natural environment coverage. An audit of this information might be achievable to decipher the proportion of natural environment supported by public land.

Culturally rich and vibrant communities

INDICATOR	MEASURE	POSSIBLE DATA SOURCE	COMMENTS
Local, metropolitan and international cultural events	Opportunities to participate in cultural events on public land.	Department of Planning and Community Development DPCD hold information relating to the staging of events on public land	An audit of this information would provide data on recreation and leisure activity that occurs on public land.

Democratic and engaged communities

INDICATOR	MEASURE	POSSIBLE DATA SOURCE	COMMENTS
Consultation and engagement opportunities for people have a say	People feel they have opportunities to have a say about public land use and management.	Parks Victoria Number of boards, committees with resident membership	Data availability unclear.

APPENDIX FOUR

Examples of outcome measures

Health, safe and inclusive communities

INDICATOR	MEASURE	POSSIBLE DATA SOURCE	COMMENTS
Community safety	People feel safe as a result of vibrant public spaces	Community Indicators Victoria Survey (2007) asks participants to rate their perception of safety within their community	Currently there is no data relating to perceptions of safety as a result of environmental design or use of public spaces.
	Police and emergency services facilities are available on public land	Victoria Police In 2007–08, 91.8 per cent of Victorian respondents to the independently conducted National Survey of Community Satisfaction with Policing (NSCSP) felt 'safe' or 'very safe' out and about in their own neighbourhood (Victoria Police, 2008).	This data does not provide insight into the causality between feeling safe and the availability of facilities. More direct questioning about what contributes to a sense of safety would need to be included into a survey in order to establish the extent to which public land contributes to the feel of safety within the community.
Sense of pride and attachment to place	People feel a strong attachment to their community as a result of having access to public land and facilities on public land.	Community Indicators Victoria Satisfaction with feeling part of the community.	This data does not represent community attachment as a result of access to public land.

Sustainable built and natural environments

INDICATOR	MEASURE	POSSIBLE DATA SOURCE	COMMENTS
Water quality	Condition of natural water systems and waterways	Melbourne Water, Monash University Facility for Advanced Water Biofiltration.	Currently there is no data measuring the contribution of public land to the enhancement of our waterways.
Public Land Sustains Biodiversity	Numbers of native animal species & breeding sites	Birds Australia Bird Australia's Bridata provides information on the distribution of Australian Birds.	An audit of Birdata information would reveal which parts of the Melbourne Metropolitan region. A further examination could reveal the extent to which Australian birds are supported by public land resources.
	Numbers of native plant species and vegetation types	Parks Victoria Parks Victoria report on native plants species within Annual Reports.	An audit of this information would provide insight into how public land within the Melbourne Metropolitan region is contributing to biodiversity.

Culturally rich and vibrant communities

INDICATOR	MEASURE	POSSIBLE DATA SOURCE	COMMENTS
Heritage preservation	Heritage sites preserved on public land	Heritage Victoria <i>Victorian State of the Historic Environment Survey, Analysis and Report</i> provides data on Heritage sites within Victoria (Heritage Victoria 2008).	This report does not indicate percentage of sites that sit on public land or are publicly accessible.

Democratic and engaged communities

INDICATOR	MEASURE	POSSIBLE DATA SOURCE	COMMENTS
Consultation and engagement opportunities	Participation in decision making body about public land.	DPCD community strengthening survey identifies 'People who are members of a decision making board or committee'	No data specific to public land

APPENDIX FIVE

Examples of questions to measure the contribution of public land to Melbourne's liveability:

Measurement questions relevant to public land supply

How much public land is supplied in Melbourne?

How does this supply benchmark against other cities?

What is the distribution of this supply across metropolitan Melbourne and is it equitably spread?

Is there enough public land preserved for future communities?

What is the quality of linkages with other public land supply?

How much land is provided for particular uses related liveability goals and indicators? E.g. What percentage of land is supplied for parks or for hospitals?

Is this sufficient?

Does the supply of public land privilege some liveability outcomes more than others?

How is the supply of public land viewed by the public in relation to liveability goals and indicators?

What is the quality of the partnerships with other agencies in delivering public land supply related to liveability goals and indicators?

Is the management of public land effective?

Measurement questions relevant to public land utilisation

What funded resources, programs and facilities relevant to liveability goals and indicators are provided on public land?

Are the liveability outcomes associated with these programs and facilities attained?

Is the spread of resources, programs and facilities and their community outcomes equitably spread across place and population groups?

What is the quality of the 'resources, programs and facilities available on public land?

What is the quality of the partnerships with other agencies in delivering the resources, programs and facilities available on public land?

