

Metropolitan Melbourne Investigation

FINAL REPORT



August 2011

VICTORIAN ENVIRONMENTAL ASSESSMENT COUNCIL

The Victorian Environmental Assessment Council (VEAC) was established in 2001 under the *Victorian Environmental Assessment Council Act 2001*. It provides the State Government of Victoria with independent advice on protection and management of the environment and natural resources of public land.

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Victorian
Environmental
Assessment
Council

1 August 2011

The Hon Ryan Smith MP
Minister for Environment and Climate Change
8 Nicholson St
East Melbourne VIC 3002

Dear Minister

METROPOLITAN MELBOURNE INVESTIGATION

In accordance with the requirements of Section 23 of the *Victorian Environmental Assessment Council Act 2001*, the Victorian Environmental Assessment Council is pleased to submit to you the final report for the Metropolitan Melbourne Investigation and copies of each submission received in relation to the investigation.

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Chairperson

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Metropolitan Melbourne Investigation

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Acknowledgement of Country

The Victorian Environmental Assessment Council acknowledges and pays its respects to Victoria's Native Title Holders and Traditional Owners within the investigation area, their rich culture and their spiritual connection to Country. These include the *Wurundjeri*, *Wathaurung*, *Boon Wurrung* and *Bunurong* peoples. The Council also recognises and acknowledges the contribution and interest of Indigenous people and organisations in the management of land and natural resources.

Council members (left to right): ►
Ian Harris, Barry Clugston,
Duncan Malcolm (Chairperson),
Airlie Worrall, Ian Munro



FOREWORD

Public land in metropolitan Melbourne supports the lifestyles of its residents. The well known cultural and historic buildings, the natural environments of national and state parks on the urban fringes, and the bayside beaches make Melbourne a great city to live in. In addition the services and utilities on public land that support everyday life - the schools, roads, railways, local parks, hospitals, water catchments and sewage treatment plants - all contribute to Melbourne's liveability.

VEAC has comprehensively mapped all public land across the investigation area identifying its ownership (i.e. whether it is Crown land, or owned by a department or other government agency) and its primary use. This is the first time that this information has been compiled for urban Melbourne. This mapping and the database supporting it will be valuable information for government as it develops its new metropolitan strategy for Melbourne.

A consistent and ongoing theme in the community views expressed to VEAC during the investigation was that Melbourne's increasing urban density and expansion will negatively impact on the quantity and quality of Melbourne's public open space and its remaining biodiversity values.

Public open space, whether it is city squares, small neighbourhood parks, sportsfields or large national and state parks, is an important contributor to Melbourne's liveability. The Council decided early in the investigation that to consider the issues associated with public open space, it needed to understand its extent and distribution. The Council concluded that it could not consider open space on public land without also considering open space on land owned by local councils. In the absence of an open space inventory for Melbourne, VEAC developed its own and has mapped public open space across the investigation area, including areas owned by local councils. The Council expects that the inventory will be maintained by government and utilised for future open space planning across the metropolitan area.

Many of the recommendations contained in this report are concerned with changes to policies and strategies to protect Melbourne's remaining biodiversity, meet the open space needs of Melbourne's growing population and maximise the contribution of surplus public land to Melbourne's liveability. VEAC has also made a small number of recommendations for changes to land use that will, if accepted by government, further protect some of Melbourne's remaining natural values. Government-accepted recommendations from VEAC's predecessor, the Land Conservation Council, have provided a framework for public land use and management for the outer areas of metropolitan Melbourne. The report completes this work by providing recommendations to confirm existing uses of public land across most of the metropolitan area, including inner and middle municipalities.

The Council wishes to warmly acknowledge and thank the Community Reference Group for its valuable guidance, and those members of the wider community who took the time and effort to make their views known. We would also like to thank the government departments and agencies and the 29 local councils covering the investigation area for the information and assistance provided throughout the investigation. Completion of this final report and its submission to government concludes VEAC's role in the investigation.

Duncan Malcolm AM
Chairperson

THE STRUCTURE OF THIS FINAL REPORT

Part A (chapter 1) provides some background to the investigation and explains the role of the Victorian Environmental Assessment Council (VEAC). It also outlines the terms of reference and other matters to be taken into account in the investigation, describes the investigation timeline and process, and summarises community views and other stakeholder views presented to VEAC following the release of the discussion paper.

Part B (chapters 2 to 6) reports on the contribution of public land to Melbourne's liveability and in particular to enhancing biodiversity, adapting to and mitigating climate change, and providing public open space. It also discusses the processes for enhancing the contribution of surplus public land to Melbourne's liveability and natural values.

Part C (chapter 7) briefly describes the public land within the investigation area and provides recommendations confirming the management and use of land in each public land use category. It also includes recommendations for changes to the public land use of a small number of areas to enhance the protection of natural values.

References are provided as endnotes in the order of citation in the report.

Appendices 1 to 5 consist of:

- ▶ submissions made in the two formal submission periods for the investigation
- ▶ protected areas in the investigation area
- ▶ the extent of Ecological Vegetation Classes in the recommended additions to the protected area system
- ▶ public open space data used for the report
- ▶ regional and metropolitan parks in the investigation area.

Maps showing public land and public open space in the investigation area are inserted in the rear pocket of the report.

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EXECUTIVE SUMMARY

In July 2008, the Minister for Environment and Climate Change requested the Victorian Environmental Assessment Council (VEAC) to investigate public land in 29 municipalities in metropolitan Melbourne.

A discussion paper for the investigation was published in October 2010. The final report was submitted to the Minister for Environment and Climate Change on 1 August 2011.

This investigation provides for the first time a stocktake of public land across most of metropolitan Melbourne and an inventory of open space on both public land and land owned by local councils.

SCOPE OF THE INVESTIGATION

The purposes of the investigation were to:

- a. systematically identify and assess the uses, resources, condition, values and management of Crown land, and public authority land in metropolitan Melbourne;
- b. assess values of Crown land, and public authority land for areas not committed to a specific use, and report on appropriate future uses relevant to Melbourne's liveability and natural values; and
- c. report on the contribution of Crown land, and public authority land to Melbourne's liveability and opportunities for enhancement of this contribution.

The full terms of reference are provided in section 1.3 of this report.

Public land is defined in the *Victorian Environmental Assessment Council Act 2001*. In brief, public land is Crown land, including state forests and national parks, and land owned by public authorities (i.e. Victorian government agencies including government departments). Land owned by the Commonwealth government or local councils is not defined as public land. However, information on open space on local council land is included in relevant parts of the discussion paper and this final report, as this land is integral to open space in metropolitan Melbourne.

The investigation area is approximately 562,740 hectares in total, of which approximately 89,065 hectares is public land (excluding some roads). A large proportion of this public land is used for services and utilities—the roads, railways, hospitals, cemeteries, reservoirs and sewage treatment plants that service and support Melbourne's residents. Another large proportion of land is in parks and reserves managed for conservation and/or recreation and a smaller, but significant area is used for schools, libraries, community halls and cultural, sports and entertainment venues.

CONSULTATION PROCESS

There were five major elements to the public consultation process for the Metropolitan Melbourne Investigation.

- ▶ A Community Reference Group met five times during 2009 and 2010 to provide advice on various aspects of the investigation.
- ▶ There were two formal written submission periods of more than 60 days each.
- ▶ Three roundtable discussions with public authority and local council staff were held during the preparation of the discussion paper. Public authority and local council staff also provided information on relevant issues throughout the investigation.
- ▶ A separate consultation program was undertaken with Indigenous communities to provide additional opportunity for their input.
- ▶ Nine formal and several informal meetings were held with members of the community, other key stakeholders and public authority and local council staff following the release of the discussion paper.

CONTRIBUTION OF PUBLIC LAND TO MELBOURNE'S LIVEABILITY AND NATURAL VALUES

Public land makes a significant contribution to Melbourne's liveability through public infrastructure, community facilities and services, open space and the protection of natural values. While private land can also contribute to liveability (for example, through privately owned hospitals and golf courses), public land is generally more accessible and secure in the long term.

Melbourne's increasing population is likely to create pressures on the public land estate, with more people requiring access to, for example, transport infrastructure, schools, hospitals and recreation areas. Given the contribution of public land to liveability, it is critical that the estate is maintained and enhanced. It is also critical that it expands to meet the needs of new communities in Melbourne's growth areas and to maintain the liveability of established suburbs as they become more densely populated.

ENHANCING BIODIVERSITY

While Melbourne's natural environment has been irreversibly changed through habitat loss, significant areas remain, particularly on the outer fringes. One way to enhance the protection of remaining natural habitats on Melbourne's public land is through additions

to Victoria's protected area system. Approximately 29,790 hectares of public land in the investigation area are currently in the protected area system. The report contains recommendations for the addition of a further 3,640 hectares.

Maintaining natural values on public land outside the protected area system can be difficult in Melbourne because of the pressures to accommodate a number of often incompatible uses. Given the extensive clearance of native vegetation in the investigation area, all Crown land with remnant native vegetation is important, and additional protection can be provided by reserving it, where appropriate, for a purpose that includes the protection of that vegetation.

Maintaining and extending ecological connectivity across the investigation area and surrounds (on both public and private land) is important for the long-term viability of Melbourne's native flora and fauna and may aid the adaptation of some species to climate change. Local biodiversity action programs would improve the link between statewide strategies and priorities and local-scale opportunities for protection, management and restoration of biodiversity.

CLIMATE CHANGE AND PUBLIC LAND

Climate change is likely to impact on Melbourne's public land through increasing mean temperatures, greater rainfall variability, greater bushfire risk, pressures on biodiversity, and coastal inundation from storm surges combined with sea level rise. These environmental changes will in turn impact on Melbourne's liveability and natural values.

As urban densification increases in Melbourne and the climate warms, vegetated public land is likely to become increasingly important. Parks and other treed areas, such as nature strips and roadsides, will help counter increased temperatures resulting from heat absorbed by roads, footpaths and roofs.

Melbourne's coastal Crown land has important social, environmental, scenic and economic values. Much of the coast around Port Phillip Bay and Western Port is low-lying, and will be vulnerable to rising sea levels and storm surges during this century. Some foreshore areas may be lost. The implications of sea level rise and inundation for Crown land foreshores should be considered in the next Victorian Coastal Strategy.

PUBLIC OPEN SPACE

Public open space is a key contributor to Melbourne's liveability and is highly valued by the community. For example, open space contributes to physical and mental health by providing opportunities for physical and social activities.

There are more than 67,000 hectares of public open space in the investigation area, which VEAC has documented in a comprehensive inventory including maps. As well as public land, the inventory includes local council owned land as VEAC found it could not properly consider open space issues in metropolitan Melbourne without taking this land into account. This is the first time that information about open space on public and local council land across metropolitan Melbourne has been brought together in one inventory. The inventory shows that open space is not distributed evenly across municipalities and established municipalities generally have less open space per capita than outer and growth municipalities.

Public open space per capita is likely to decrease over time for almost all municipalities. Existing open space will need to be protected and new open space provided so that Melbourne's open space network can meet the needs of its growing population. The appropriate reservation of open space on Crown land and the application of the principle of no net loss of area when non-park related services and facilities are delivered on public open space are two means of protecting existing open space.

Significant open space planning is occurring in growth municipalities and should continue in order to meet the needs of new communities. There is, however, less scope in established municipalities to create additional open space to meet the demands of an increasing population. The open space contribution policy and provisions in the Victoria Planning Provisions and *Subdivision Act 1988* should be reviewed with the aim of maximising the contribution of open space through subdivision of land. Secondary use of public authority land is also a way of providing additional open space.

A new metropolitan open space policy and strategy is also necessary to respond to the challenges facing Melbourne's open space network. The policy and strategy should consider the entire public open space network and provide an overarching framework for existing open space programs and strategies.

SURPLUS PUBLIC LAND

VEAC defined 'Crown land and public authority land not committed to a specific use' as public land which has no current or planned use or which has a current use that will cease in the foreseeable future. In the main, this can be described as surplus public land. The terms of reference require VEAC to report on appropriate uses of this land relevant to Melbourne's liveability and natural values. VEAC decided to meet this requirement by focusing on the processes for identifying and disposing of surplus public land.

Not all surplus land will be suitable for alternative public uses as it may not be in right location, be the right size or have certain values to meet community needs. While the opportunities for using surplus public land for alternative public purposes may be limited, they need to be taken when they arise.

Existing processes for assessing the values and potential future uses of surplus public land differ for Crown land and public authority land. Crown land is assessed against broad criteria to determine its public land values. Public authority land is assessed for its suitability for another use by its current owner. The report recommends that a formal and transparent whole of government process be developed which involves consultation with local councils (where appropriate) and takes into account, among other things, priority open space needs.

Despite the pressures to sell Crown land, Crown land assessed as suitable for another public use should be retained and assigned to a public land manager for that use. The listing of surplus public land on a central sales register and, in some situations, selling surplus public authority land to local councils at a market value that reflects its intended use will further increase the opportunities for surplus public authority land to contribute to Melbourne's liveability.

PUBLIC LAND USE RECOMMENDATIONS

VEAC and its predecessors have developed an evolving set of public land use categories to describe the primary purposes for the use of public land and the range of permitted activities. These categories provide a useful framework for consistent and transparent allocation of public land to specific broad uses. Applying the established public land use categories to public land in the highly urbanised metropolitan setting has required some reconsideration of the categories, and an additional 'metropolitan park' category has been established for this investigation area.

This report provides public land use recommendations for some categories to confirm existing public land uses across the investigation area. In addition, recommendations are provided for changes to the land use categories of a small number of areas to enhance protection of natural values and for the continued management by Melbourne Water of freehold land with high biodiversity values.

FINDINGS AND RECOMMENDATIONS

This final report contains 10 findings, 24 policy and strategy recommendations, and 21 public land use recommendations. These findings and recommendations can be found in the relevant sections of chapters 3 to 7 and in full or summarised in the following pages.

Many of the policy and strategy recommendations relating to public open space apply to both public land and land owned by local councils. VEAC would not usually make recommendations relating to local council land because it is not public land, but has done so in this investigation because it found it could not properly consider open space in metropolitan Melbourne without taking this land into account.

FINDINGS

The following findings highlight significant observations from the investigation.

Climate change and public land

- F1** All vegetated public land contributes to Melbourne's liveability, including small areas such as nature strips, pocket parks, strips beside roads and railway lines.
- F2** The importance of treed areas of public land and water bodies for ameliorating the urban heat island effect is likely to increase in Melbourne as urban densification increases and the climate warms.

Public open space

- F3** Public open space is a key contributor to Melbourne's liveability.
- F4** The community perceives that Melbourne's increasing population will result in a loss of quantity and quality of public open space.
- F5** Melbourne's public open space is highly valued by the community.
- F6** Different sectors of the community use and value public open space in different ways.
- F7** There is an uneven distribution of public open space across the investigation area, with no clear patterns apparent. However, established municipalities generally have less open space per capita than outer and growth municipalities.
- F8** Without the retention and creation of open space on both public land and local council land, public open space per capita will decrease over time for almost all municipalities in the investigation area.
- F9** Current planning to ensure that adequate open space is provided in growth municipalities needs to continue. Without this planning, there is a risk that areas of these municipalities will have similar or lower levels of open space than some established municipalities because of their rapidly growing populations.
- F10** The projected decrease in public open space per capita is likely to be exacerbated in established municipalities where there is limited scope to create additional open space to meet population increases.

POLICY AND STRATEGY RECOMMENDATIONS

Chapter 3 to 7 of this report contain the following recommendations for enhancing the contribution of public land to Melbourne's liveability and natural and cultural values.

Protecting biodiversity on public land

- R1** Additional protection for Crown land with remnant native vegetation be provided by:
 - (a) reserving unreserved Crown land for a purpose that includes the protection of its remnant native vegetation; and
 - (b) amending the reservation purpose of reserved Crown land, where appropriate, to include the protection of its remnant native vegetation.
- R2** Local biodiversity action programs, as outlined in the final report for VEAC's Remnant Native Vegetation investigation, be established in metropolitan Melbourne.

Planning for sea level rise and coastal inundation

- R3** The next Victorian Coastal Strategy consider the implications of sea level rise and inundation for Crown land foreshores, and provide guidance on how the adaptation options of protect, accommodate and retreat should be implemented in relation to this land.

Maintaining and using the public open space inventory

- R4** Government maintain the public open space inventory developed by VEAC and:
 - (a) update the public open space data for public land and land owned by local councils at least every five years
 - (b) make the spatial dataset available to local councils; and
 - (c) make the information in the inventory available to the community.
- R5** The public open space inventory data be used to inform the Government's proposed metropolitan strategy for Melbourne.

Meeting the open space needs of Melbourne's growing population

- R6** Prior to considering proposals that would result in the reduction of open space, government and local councils undertake a public process to assist them to determine the costs and benefits to the community of proposed reductions in public open space on public land and land owned by local councils.
- R7** The principle of no net loss of area be applied when public open space on public land and land owned by local councils is used to deliver non-park related services and facilities.
- R8** Public open space on public land and land owned by local councils be managed to maximise public access and to provide the widest range of user opportunities.
- R9** Government review the open space contribution policy and provisions in the Victoria Planning Provisions and *Subdivision Act 1988* with the aim of assisting metropolitan local councils meet the challenges of population increase by maximising the contribution of open space through subdivision of land. This would include:
- (a) reviewing the contribution level in the Subdivision Act to determine whether the minimum contribution should be set at five per cent
 - (b) streamlining the process for creating a contribution schedule to clause 52.01 of the Victoria Planning Provisions
 - (c) removing the uncertainties in the interpretation and use of the Subdivision Act and clause 52.01 of the Victoria Planning Provisions
 - (d) reviewing the provisions in the Subdivision Act and clause 52.01 of the Victoria Planning Provisions that exempt some subdivisions from the requirement to make an open space contribution
 - (e) considering whether the open space objectives in clause 56.05-2 of the Victoria Planning Provisions, which detail standards for neighbourhood open space, can be made to operate with the provisions in clause 52.01, which require people proposing to subdivide to make specified contributions to the local council.
- R10** Government encourage multiple uses of public authority land where appropriate as one means of providing additional public open space in metropolitan Melbourne.
- R11** Government develop a standard framework for the shared management and use of public open space on public authority land that provides certainty of management and use for public authorities and open space managers.
- R12** Government prepare a metropolitan open space policy and strategy that provides a long-term plan for public open space in metropolitan Melbourne. Such a document:
- (a) encompass public open space on both Crown and public authority land (public land) and local council land in metropolitan Melbourne
 - (b) provide strategic actions to address key issues relating to the provision and protection of public open space in metropolitan Melbourne, in particular to respond to Melbourne's expected population increase. These issues could include, but should not be limited to:
 - (i) addressing the uneven distribution of open space across metropolitan Melbourne
 - (ii) developing appropriate standards for the distribution and accessibility of public open space in established municipalities
 - (iii) considering approaches and mechanisms for creating new open space, including the use of public authority land, and for meeting an anticipated increase in intensity of use of existing open space, particularly in established municipalities
 - (iv) developing guidelines for providing opportunities for different open space uses across metropolitan Melbourne.
- R13** Government require metropolitan local councils to prepare municipal open space strategies or update their existing open space strategies in accordance with the framework established by the metropolitan open space strategy. Municipal open space strategies should continue to reflect the local on-ground knowledge and expertise of local council open space planners.

R14 The metropolitan open space strategy and municipal open space strategies be regularly updated; at least every ten years.

R15 Government assign responsibility and allocate resources for:

- (a) maintaining the open space inventory and making available the information it contains; and
- (b) developing and implementing a metropolitan open space policy and strategy.

Assessing surplus public land for alternative public uses

R16 A formal and transparent whole of government process and criteria be developed for assessing the potential for surplus public land to meet alternative public uses, and involve consultation with relevant local councils where appropriate.

R17 Crown land and public authority freehold land that is not required by its land manager for a current or future use be:

- (a) assessed through the process recommended in R16 against a range of criteria including whether the land:
 - (i) would contribute to the implementation of government priorities identified in its future metropolitan strategy for Melbourne
 - (ii) meets priority open space needs identified in the metropolitan open space strategy recommended by VEAC (see R12)
 - (iii) contributes to ecological connectivity or recreational corridors
 - (iv) forms part of a water frontage; and
- (b) retained as public land where these and other specified public land values are identified.

R18 Government allocate resources for the assessment of surplus public land for alternative public uses.

R19 Crown land assessed as suitable for another public use be retained by the Crown and assigned to a new public land manager for this public purpose.

Selling public land that is suitable for another public use

R20 Impending sales of Crown land and public authority freehold land be listed on a central register, such as the Government Land Monitor's sales bulletin board. Listings:

- (a) be for a minimum of 60 days
- (b) continue until the land is sold; and
- (c) be accessible to all public authorities, local councils and the public.

R21 *The Policy and instructions for the purchase, compulsory acquisition and sale of land* be amended so that public authority freehold land can be sold at a market value that reflects its intended public use where it is assessed that significant community benefits will be achieved.

R22 Criteria and conditions be developed for the sale of public authority land at a reduced market value.

Awareness of Aboriginal cultural heritage values

R23 That public land managers undergo, or continue to undergo, cultural heritage training to increase or maintain their awareness of the existence of Aboriginal cultural heritage values on public land.

Resourcing implementation of public land use recommendations

R24 Government allocate resources:

- (a) to implement previously accepted LCC recommendations on Crown land through appropriate reservation
- (b) for areas not subject to accepted LCC recommendations, to formalise current public land use shown on map A of this report (except those areas recommended for a change in use) through reservation of Crown land as provided for in each public land use general recommendation
- (c) to implement government accepted recommendations for changes to public land use (A1 to E5).

RECOMMENDATIONS FOR PUBLIC LAND USE

The final report contains the following land use recommendations:

- ▶ ten general recommendations to confirm existing public land use across the investigation area;
- ▶ eight recommendations for changes to land use categories; and
- ▶ three recommendations for the continued management by Melbourne Water of freehold land with high biodiversity values.

These recommendations are listed below and provided in full in chapter 7.

General recommendations

- B** Nature conservation reserves and Trust for Nature protected areas
- C** Regional parks
- D** Metropolitan parks
- E** Natural features reserves
- F** Coastal reserves
- G** Water production areas
- H** Historic and cultural features reserves
- I** Community use areas
- J** Service and utility areas
- K** Uncategorised public land

Recommendations for changes to public land use

- A1** Additions to Kinglake National Park
- A2** Additions to Bunyip State Park
- A3** Point Cook Coastal Park
- E1** Bandicoot Corner Bushland Area
- E2** Edithvale Wetland Bushland Area
- E3** Addition to Seaford Wetland Bushland Area
- E4** Beaumaris Cliffs Geological and Geomorphological Features Area
- E5** Yallock Creek Streamside Area

Recommendations for the management of melbourne water freehold land

- N1** Ryans Swamp and surrounds
- N2** Truganina Swamp
- N3** Edithvale–Seaford Wetlands



PART **A**

INTRODUCTION

1

INTRODUCTION

1.1 Background to the investigation

Australia is one of the most urbanised countries in the world, with 75 per cent of its population living in cities of more than 100,000 people. With more than 4 million people living within its boundaries, Melbourne is Australia's second largest city and is considered to be a global city.¹

Melbourne's population is growing. The metropolitan area, including the Shires of Mornington Peninsula and Yarra Ranges, had the largest population growth of any Australian capital city for the last nine years. In June 2010 its population reached 4.08 million—an increase of 79,000 people or two per cent since June 2009.²

As Melbourne's population grows, its landscape is becoming increasingly urbanised. Urbanisation (along with agriculture) has impacted, and continues to impact, on the natural environment of metropolitan Melbourne. Most of the natural environment of suburban Melbourne has been irreversibly changed. It is the most altered landscape in Victoria from a biodiversity perspective. While substantial biodiversity values remain, these are mostly outside Melbourne's urban areas. Kinglake and Dandenong Ranges national parks on Melbourne's fringe; Warrandyte, Lerderderg and Bunyip state parks; and the many conservation reserves on public land play an important role in protecting these values.

Successive Victorian governments have aimed to limit Melbourne's outward development with an Urban Growth Boundary and to concentrate urban expansion in designated growth areas. The Cities of Wyndham, Whittlesea and Casey—all growth municipalities—had the largest population growth of all Victorian municipalities in 2009–10. The City of Wyndham also had the fastest annual growth rate (8.8 per cent). Melbourne's established suburbs are also becoming more densely populated. The City of Melbourne, for example, continued to experience relatively fast population growth, growing by 3.6 per cent in 2009–10.

A focus for government has been accommodating this growing population. There are challenges associated with both maintaining liveability in established suburbs, where urban density is increasing, and creating new liveable communities in growth areas. Over the next two years the Victorian government will be developing a new

metropolitan strategy for Melbourne. It is envisaged that, in planning for Melbourne's growth, a major focus will be addressing the liveability, productivity and sustainability of the city. It is likely that public land will be a key part of this strategy. Public transport, health and educational services and facilities and open space are all provided on public land.

Some insights into the government's future directions can be gained from the government's 2010 election policies, which included a number of commitments related to public land. Its planning policy, for example, made commitments to establish a State register of significant public land to protect it from sale, and increase the transparency of public land sales. It also committed to assessing the public parkland and open space requirements across Melbourne to ensure that, as the city grows, adequate open space and parkland exists for public use. Other commitments that may have implications for public land include auditing the capacity of Melbourne's transport and road networks and water and sewerage systems.³

In 2008 the Victorian government requested the Victorian Environmental Assessment Council (VEAC) to investigate public land in 29 municipalities in metropolitan Melbourne (see figure 1.1). The investigation area is approximately 562,740 hectares or 5,627.4 square kilometres in total, of which approximately 89,074 hectares or 890.7 square kilometres (16 per cent) is public land (excluding some roads).

A large proportion of this public land is used for services and utilities—the roads, railways, hospitals, cemeteries, reservoirs and sewerage treatment plants that service and support Melbourne's residents. Parks and reserves managed for conservation and/or recreation also account for a large proportion of public land. A smaller but significant proportion is used for schools, libraries, community halls and cultural, sports and entertainment venues.

VEAC released a discussion paper in October 2010 which documented the values, uses and ownership of this public land and its contribution to Melbourne's liveability. It also included a small number of draft recommendations for public land use changes aimed at enhancing the protection of biodiversity in metropolitan Melbourne.

Figure 1.1
The investigation area



1.2 The Victorian Environmental Assessment Council

The *Victorian Environmental Assessment Council Act 2001* (VEAC Act) came into effect on 31 December 2001. This Act repealed the *Environment Conservation Council Act 1997* and established the Victorian Environmental Assessment Council (VEAC) to conduct investigations and make recommendations relating to the protection and ecologically sustainable management of the environment and natural resources of public land. VEAC is a successor organisation to the Land Conservation Council (LCC), established in 1971, and the Environment Conservation Council, which replaced the LCC in 1997.

The current five members appointed to VEAC are Mr Duncan Malcolm AM (Chairperson), Mr Barry Clugston, Mr Ian Harris, Mr Ian Munro PSM and Dr Airlie Worrall. A brief biography of each of the Council members can be found on VEAC's website at www.veac.vic.gov.au. The Council is supported by a small research, policy and administrative staff. The VEAC Act requires the Council to consult with departments and public authorities, and requires departments and public authorities to give practicable assistance to the Council in carrying out investigations. VEAC papers and reports are, however, prepared independently.

The Council conducts its affairs in accordance with the VEAC Act. In particular, Section 18 specifies that

“Council must have regard to the following considerations in carrying out an investigation and in making recommendations to the Minister-

- a** the principles of ecologically sustainable development;
- b** the need to conserve and protect biological diversity;
- c** the need to conserve and protect any areas which have ecological, natural, landscape or cultural interest or significance, recreational value or geological or geomorphological significance;
- d** the need to provide for the creation and preservation of a comprehensive, adequate and representative system of parks and reserves within the State of Victoria;
- e** the existence of any international treaty ratified by the Commonwealth of Australia which is relevant to the investigation;
- f** any agreement at a national, interstate or local government level into which the Government of Victoria has entered, or under which the Government of Victoria has undertaken any obligation in conjunction with the Commonwealth, a State, Territory or municipal council, which relates to the subject matter of the investigation;
- g** the potential environmental, social and economic consequences of implementing the proposed recommendations;
- h** any existing or proposed use of the environment or natural resources.”

1.3 Terms of reference for the investigation

The then Minister for Environment and Climate Change requested VEAC to undertake the Metropolitan Melbourne Investigation in July 2008. The terms of reference for the investigation are copied below.

TERMS OF REFERENCE

Pursuant to section 15 of the *Victorian Environmental Assessment Council Act 2001* the Minister for Environment and Climate Change hereby requests the Council to carry out an investigation of Crown land and public authority land in the cities constituting metropolitan Melbourne* and the Shire of Cardinia.

The purposes of the Metropolitan Melbourne investigation are to:

- a** systematically identify and assess the uses, resources, condition, values and management of Crown land, and public authority land in metropolitan Melbourne;
- b** assess values of Crown land, and public authority land for areas not committed to a specific use, and report on appropriate future uses relevant to Melbourne's liveability and natural values; and
- c** report on the contribution of Crown land, and public authority land to Melbourne's liveability and opportunities for enhancement of this contribution.

In addition to the considerations specified in section 18 of the *VEAC Act*, the Council would need to take into account the following matters:

- ▶ relevant State Government policies, programs, strategies and Ministerial Statements relating to the use of open space in Melbourne, including *Melbourne 2030* and *Planning for all of Melbourne* and *Linking People and Spaces*;
- ▶ public authority plans and strategies such as the Port Phillip Catchment Management Authority *Regional Catchment Strategy* and *Native Vegetation Plan*; and
- ▶ land required by transport and other utilities for their functions and appropriate access for social, recreational and community activities.

The Council is required to consult with the community in accordance with the *VEAC Act*, to release a Discussion Paper, and to submit a Final Report on the results of its investigation. The Final Report must be submitted by May 2010.**

* Municipalities of Banyule, Bayside, Boroondara, Brimbank, Casey, Darebin, Frankston, Glen Eira, Greater Dandenong, Hobsons Bay, Hume, Kingston, Knox, Manningham, Maribymong, Maroondah, Melbourne, Melton, Monash, Moonee Valley, Moreland, Nillumbik, Port Phillip, Stonnington, Whitehorse, Whittlesea, Wyndham, Yarra, Melbourne Docklands.

** In July 2009, the then Minister extended the timeline for the completion of the investigation until May 2011. In April 2011, the Minister extended the timeline until 1 August 2011.

1.4 Scope of the investigation

This investigation includes both Crown land and public authority land—collectively referred to as public land—within 29 of the 31 municipalities that make up metropolitan Melbourne. The Shires of Yarra Ranges and Mornington Peninsula are not included as they were part of previous investigations undertaken by VEAC's predecessor, the Land Conservation Council.

The VEAC Act defines public land. In brief, this is Crown land, including state forests and national parks, and land owned by public authorities. It does not include land owned by the Commonwealth government or local councils. However, for this investigation VEAC has decided to include information on, and discussions relevant to, open space on local council land in the relevant chapters of the discussion paper and this final report. This is partly for context—as local councils are significant providers of open space—and partly because VEAC found it could not properly consider open space issues in metropolitan Melbourne without taking this land into account.

The terms of reference for the investigation specify that VEAC is to identify and assess the uses, resources, condition, values and management of public land in the investigation area. Chapter 4 of the discussion paper describes the public land within the investigation area and its ownership, uses, resources, values, and management. This is the first time that the ownership and use of public land has been identified for the inner and middle municipalities of metropolitan Melbourne. Chapter 7 of the final report includes general recommendations that, if accepted by government, will formally confirm the existing uses of public land within the investigation area as shown on map A in the back pocket of this report.

The terms of reference also require VEAC to report on the contribution of public land to Melbourne's liveability and opportunities for enhancing this contribution. Chapter 5 of the discussion paper documents this contribution. This is likely to be the first time that this contribution has been articulated for metropolitan Melbourne. Both the discussion paper and final report consider public land's contribution to open space and the conservation of biodiversity, and the role of public land in aiding communities to adapt to climate change.

In addition, VEAC is required to report on the values and appropriate future uses of public land not committed to a specific use, and report on future uses relevant to Melbourne's liveability and natural values. The Council has taken the view that land not committed to a specific use is public land that is surplus to the requirements of its current owner or manager. It also decided to focus on the processes for disposing of surplus public land and determining its future uses, rather than

identifying particular surplus land that could make these contributions. The discussion paper and final report describe the values and scope of this land and the policies and processes for determining its appropriate future uses.

The discussion paper invited comment on discussion points relating to the contribution of public land to Melbourne's liveability. It also invited comment on draft recommendations for confirming existing public land use across the investigation area and draft recommendations for a small number of additions to protected areas. This final report contains 10 findings highlighting significant observations, 24 policy and strategy recommendations, and 21 public land use recommendations.

1.5 The investigation process

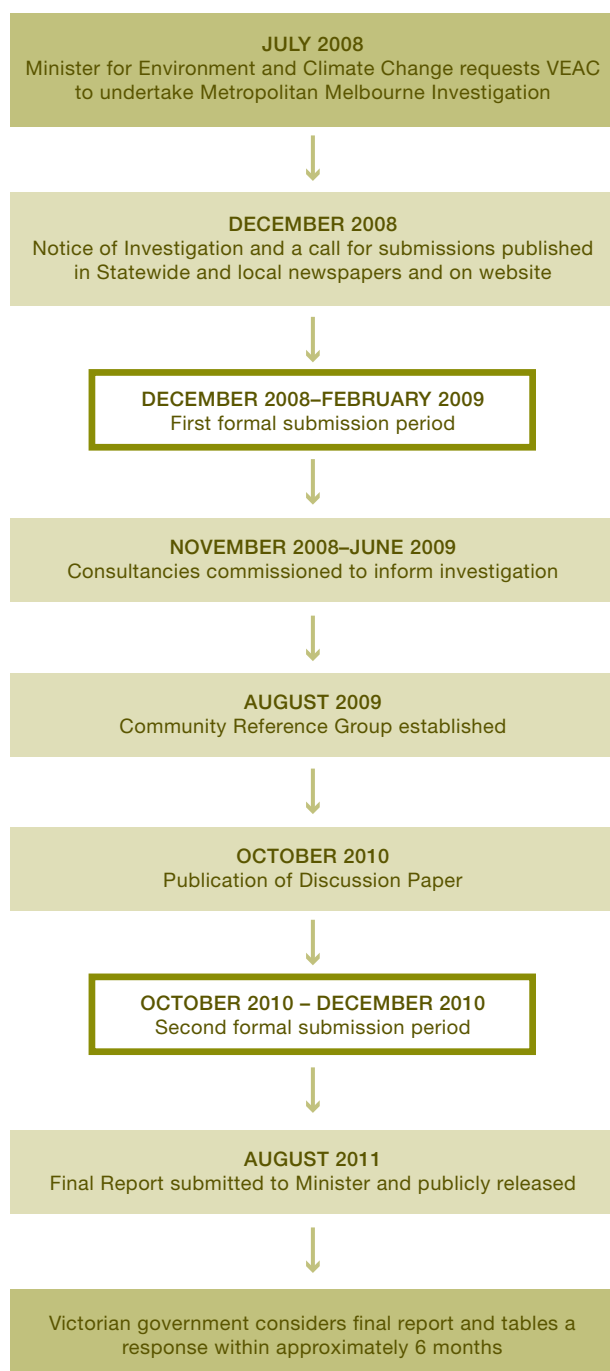
The process for this investigation is specified in both the VEAC Act and the terms of reference for the investigation. The process and timeline are shown in figure 1.2 and include two formal submission periods of more than the minimum 60 days required under the Act.

The terms of reference specified that VEAC was to release a discussion paper and submit a final report. The usual process for VEAC investigations also includes the preparation of a draft proposals paper for public comment. As this was not specified for this investigation, the Council decided to invite comment on particular issues and on a small number of draft land use recommendations in the discussion paper.

A number of submissions responding to the discussion paper proposed additional land use recommendations, some of which covered quite extensive areas. VEAC has considered these proposals and made recommendations in relation to two small areas (see chapter 7). In most cases, however, the Council decided that it was inappropriate to make recommendations for major land use changes that have not been subject to a public consultation process. For this reason, VEAC considers that all future investigations should include the preparation of a draft proposals paper.

This final report completes the investigation and was submitted to the Minister for Environment and Climate Change, the Hon Ryan Smith MP on 1 August 2011.

Figure 1.2
Investigation process and timeline



1.6 Consultation and information gathering

VEAC gathered information from a number of sources during the investigation including seeking advice from the Community Reference Group for the investigation and commissioning expert consultancies. Consultation with the community, public authorities and local councils was an important aspect of the investigation. The information gained from all of these sources provided VEAC with valuable insights into the values, uses and management of public land in metropolitan Melbourne and associated issues.

1.6.1 COMMUNITY REFERENCE GROUP

VEAC established a Community Reference Group for this investigation in accordance with section 13 of the VEAC Act. The group comprised representatives of a broad range of interests related to the investigation. Members are listed on the inside front cover of this report. Over the course of its five meetings during 2009 and 2010, the Community Reference Group provided advice on the contribution of public land to Melbourne's liveability. In particular, the group provided input on the importance of public open space and the conservation of remaining biodiversity values in the context of Melbourne's population growth and increasing urban density.

1.6.2 CONSULTANTS' REPORTS

VEAC commissioned six reports from consultants to inform the investigation. These reports are listed in box 1.1 and are available at www.veac.vic.gov.au.

Box 1.1

Consultants' reports commissioned by VEAC

- ▶ *The contribution of public land to Melbourne's liveability*⁴
- ▶ *Demographic characteristics of communities within the Metropolitan Melbourne Investigation Area*⁵
- ▶ *Biodiversity of metropolitan Melbourne*⁶
- ▶ *Sites of geological and geomorphological significance on public land*⁷
- ▶ *Indigenous cultural heritage and history within the Metropolitan Melbourne Investigation Area*⁸
- ▶ *Non-Indigenous cultural heritage and historic places on public land in VEAC's Metropolitan Melbourne Investigation Area*⁹

1.6.3 COMMUNITY AND STAKEHOLDER CONSULTATION

VEAC received significant input from a range of public authorities and local councils within the investigation area. This input included advice on public landholdings from public authorities and participation at three roundtables on public land issues. VEAC also received invaluable information from local councils on the distribution of public open space within their municipalities and on local open space issues.

A separate consultation program was undertaken with Indigenous communities to provide additional opportunity for their input.

Public consultation on issues associated with public land is a key source of information for VEAC. During the first submission period VEAC received 189 written submissions which were considered during the development of the discussion paper. One hundred and twenty-three submissions were received during the second submission period following the release of the discussion paper on 15 October 2010. These submissions can be viewed on VEAC's website.

In addition, nine formal meetings and several informal meetings were held with members of the community, other key stakeholders and local council staff soon after the release of the discussion paper. These meetings provided VEAC with the opportunity to discuss the contents of the discussion paper with the community and to receive feedback on the issues raised in the discussion paper.

VEAC wishes to thank everyone who made a submission, attended meetings or otherwise participated in the consultation process over the course of the investigation. The information and perspectives were considered when preparing this final report. A list of individuals and organisations who made submissions is in appendix 1. A summary of community and other stakeholder views provided to VEAC in submissions or at meetings in response to the discussion paper is provided below and in relevant places throughout this final report. For a summary of community and other stakeholder views provided to VEAC in the first round of submissions, see chapter 1 of the discussion paper.

Community and other stakeholder views

Many submissions commented on the important contribution of public land to Melbourne's liveability, particularly its contribution to open space, enhancing biodiversity and mitigating and adapting to climate change. A small number discussed other contributions such as social and affordable housing, community gardens and food production. A number of submissions commented on the pressures on liveability and public land from Melbourne's increasing population, urban consolidation and expansion and climate change. Comments were also made about contributions to liveability of specific areas of public land or public open space.

The importance to Aboriginal people of the entire landscape, regardless of its tenure, was raised during consultation with Indigenous communities, as was the importance of Aboriginal cultural heritage sites and places on public land, and the ongoing management and identification of these sites. It was suggested that public land managers should have greater access to information sources to assist with the identification of cultural heritage sites and therefore avoid on-ground works that could result in the inadvertent loss of cultural heritage sites. The responsibility to identify, conserve and protect cultural heritage sites is reflected in the public land use general recommendations contained in section 7.2, and a recommendation emphasising the need to be aware of Aboriginal cultural heritage values on public land is also provided in chapter 7.

Submissions commented on the importance of metropolitan Melbourne's remaining habitat for native flora and fauna—often within the context of climate change—and pressures on biodiversity. A number of submissions stressed the importance of protecting natural values on public land from urban development and degrading processes, and suggested that additional areas of public land with natural values in the investigation area be protected. Submissions also discussed the need for an interconnected, multi-tenure conservation network to provide habitat links, enhance ecosystem resilience and allow native species to adapt to climate change. Recommendations relating to biodiversity conservation can be found in chapters 3 and 7 of this report.

Submissions commented on the implications of climate change for public land, focusing on impacts such as increasing temperatures and rainfall variability, and storm surge inundation and erosion. The importance of urban vegetation on public land, particularly native vegetation, in mitigating the urban heat island effect and maintaining and protecting natural values was highlighted. Several submissions commented on the vulnerability of coastal foreshores to climate change impacts, and the measures necessary to mitigate these impacts. The impact of climate change on current water and fire management practices was also mentioned in several submissions. Chapter 4 contains a finding and recommendation relevant to climate change and public land.

Public open space was the most common theme raised in submissions. Many submissions highlighted the importance of public open space to Melbourne's liveability. Submissions commented on the public open space inventory and analysis provided in the discussion paper. Submissions also commented in detail on the protection, creation and future planning of metropolitan Melbourne's public open space network. Chapter 5 contains recommendations and findings relating to the protection, provision and planning of Melbourne's public open space.

A large number of submissions commented on surplus public land. Some considered that surplus public land with biodiversity or open space values should be retained to enhance biodiversity or to provide open space for Melbourne's growing population. Other submissions stated that surplus public land should be used for a range of alternative public uses such as social and affordable housing, community gardens, urban agriculture and respite facilities. There was also the view that public land should be valued as an intergenerational and a community wide resource, and that it should be retained indefinitely to respond to new and emerging needs.

Submissions provided detailed comments on the surplus public land issues examined in the discussion paper: namely listing all surplus public land on a central register, retaining Crown land that is suitable for another public use and making it available at no cost to a new manager, selling public authority freehold land at a price that reflects its intended public use and clarifying responsibilities and resourcing for the management of Crown land. Recommendations and key findings relating to surplus public land are provided in chapter 6 of this report.

There was a range of comments on the draft general and site-specific public land use recommendations proposed in the discussion paper. The majority of submissions agreed with the general recommendations. Others proposed changes to the range of permitted activities in specific public land use categories. Several submissions identified specific sites that they considered should be re-categorised or were missing from the public land or public open space maps. Others suggested minor modifications to the recommendations—usually extending the area under recommendation—and/or proposed that new areas be added to, or recommended as, conservation reserves. Chapter 7 contains general and site-specific public land use recommendations.

Many submissions commented on Melbourne's increasing population and the pressures that this has, or will have, on liveability and on public land values. Some submissions linked this to the need to provide more open space and/or to protect and enhance Melbourne's remaining biodiversity. A small number linked population growth to the need to contain Melbourne's urban expansion.

Although most submissions focused on the topics and issues covered in the discussion paper, a small number raised additional issues. Some considered that public land should be made available for urban food production. Some wanted public land allocated for community gardens to facilitate social and health outcomes in communities. Others were concerned with the extensive transportation of food and wanted to foster larger urban agriculture projects on public land to reduce urban communities' reliance on fossil fuels for food distribution and to reduce greenhouse gas emissions.

A small number of submissions considered that there is too much reliance on volunteers to manage public land and that there is a need for additional resourcing for the management of Crown land.



PART **B**

THE CONTRIBUTION OF
PUBLIC LAND TO LIVEABILITY
AND NATURAL VALUES

2 PUBLIC LAND AND MELBOURNE'S LIVEABILITY

Terms of reference (b) and (c) for this investigation specify that the Victorian Environmental Assessment Council (VEAC) is to:

- ▶ assess values of Crown land, and public authority land for areas not committed to a specific use, and report on appropriate future uses relevant to Melbourne's liveability and natural values; and
- ▶ report on the contribution of Crown land, and public authority land to Melbourne's liveability and opportunities for enhancement of this contribution.

Chapter 5 of the discussion paper defined liveability and outlined the ways in which public land contributes to Melbourne's liveability and natural values. This chapter of the final report summarises the material in the discussion paper and addresses the responses of the community and other stakeholders.

2.1 Importance of public land

*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.*¹⁰

Public land makes a significant contribution to Melbourne's liveability through, for example, roads and public transport infrastructure, public housing, public hospitals, schools, police and emergency services, art galleries, museums, national parks, water catchments, sportsgrounds and other recreation areas, and walking and cycling trails. This contribution facilitates a broad range of community outcomes including mental and physical health, social cohesiveness, attachment to place, lifelong learning, sustainable local economies and conservation of Melbourne's natural environment and heritage.

Table 5.1 in the discussion paper documents these contributions within a framework of five liveability domains, namely:

- ▶ healthy, safe and inclusive communities
- ▶ dynamic, resilient local economies
- ▶ sustainable built and natural environments
- ▶ culturally rich and vibrant communities
- ▶ democratic and engaged communities.⁴

These domains can be considered as goals towards which governments can work to maintain or enhance liveability.

VEAC's legislation restricts its investigations to public land; that is, land owned by the Crown and public authorities. VEAC recognises, however, that land owned by local councils makes significant contributions to Melbourne's liveability through community facilities and services and public open space. It also recognises that local communities often consider land owned by local councils to be part of the public land estate.

The discussion paper noted that some of the contributions to Melbourne's liveability documented in table 5.1 could be made on private land. For example, privately owned hospitals, art galleries, golf courses and heritage buildings add to Melbourne's liveability. However, it also noted that public land, unlike private land, provides governments with opportunities to use land for the purposes it sees fit. These are generally 'public good' or utilitarian purposes such as conservation of the natural environment, provision of opportunities for recreation and relaxation, delivery of public services and utilities, and securing land for the use of future generations.

Public land provides these community benefits, often without people being required to pay for access to private services or land holdings, and generally without being excluded on the basis of ownership or club membership. In addition, its contributions are often more secure and enduring than those provided on private land.

While public land may be more accessible and secure, it does not provide a guarantee that the 'public good' will be realised. An inadequate supply of public land may result in pressures on Melbourne's current and future liveability. The location of public land and how it is used and managed makes a difference to liveability outcomes.

2.2 Pressures on liveability and public land

Nearly half of the submissions responding to the discussion paper commented on the value of public land to Melbourne's liveability. Most of these were comments about the importance of public land for providing open space, protecting and enhancing biodiversity values and for countering the urban heat island effect. A small number of submissions considered that there should have been more emphasis in the discussion paper on the use of public land for other liveability outcomes including social housing, community gardens and food production.

VEAC recognises that a broad range of important community benefits are provided on public land and documented these in chapter 5 of the discussion paper. While preparing the discussion paper VEAC concluded that further consideration of many of these community benefits is best done by the relevant government agencies. For example, the Departments of Human Services, Health, Transport, and Education and Early Childhood Development have the expertise and the authority to provide advice on the use of public land for social housing, health care, transport and education respectively. Consequently, in responding to the terms of reference in the discussion paper, VEAC decided to focus on the contributions of public land to public open space, adapting to and mitigating climate change and enhancing biodiversity. Most submissions commenting on liveability considered that these are key contributors to Melbourne's liveability.

VEAC also recognises that urban agriculture and community gardens contribute to Melbourne's liveability. Whether public land should be used for these purposes would depend on the values of the land as well as the current and proposed future uses of that land. This investigation found that the majority of public land already has existing or proposed future community uses. As both urban agriculture and community gardens preclude other uses and access by other users, VEAC considers that these particular contributions to Melbourne's liveability would generally be best achieved on private or local council land.

Recently released Australian Bureau of Statistics population estimates indicate that the population of metropolitan Melbourne (including the Shires of Mornington Peninsula and Yarra Ranges) increased by 79,000 people or two per cent in the twelve month period to June 2010. The largest population growth occurred in the outer suburban fringes of Melbourne in the growth municipalities of Wyndham, Whittlesea and Casey. The highest population densities were in central Melbourne, St Kilda and Prahran.²

A number of submissions commented on the pressures on liveability and public land from Melbourne's increasing population, urban consolidation and expansion, and climate change. Some of these submissions considered that there should be more public open space and that Melbourne's remaining biodiversity should be conserved to counter these pressures.

Pressure on public land is likely to increase as Melbourne's population increases and more people require access to, for example, schools, roads, railways, hospitals and parks. Open spaces, both natural and landscaped, may come under pressure in response to the need for more community facilities and services. Given the significant contributions made by public land to liveability, it is critical that Melbourne's public land estate is maintained and enhanced. It is apparent that this involves not only valuing and protecting existing public land, but also expanding the estate.

A challenge for government is meeting the needs of new communities in Melbourne's growth areas and maintaining the liveability of established municipalities as they become more densely populated. New schools, hospitals, community facilities and parks are needed and are being provided on public land in growth areas. Additional public land to provide these services is likely to be needed in established municipalities as their populations grow. Another challenge for government is protecting remaining natural environments as the metropolitan area becomes both larger and more densely built.

Chapters 3 to 6 discuss the contribution public land makes to enhancing biodiversity, adapting to and mitigating climate change and public open space, as well as the values and future uses of surplus public land. These chapters include VEAC's key findings relevant to, and recommendations for, enhancing these contributions.

3 ENHANCING BIODIVERSITY

The area around Port Phillip Bay historically supported a diverse natural environment, with widespread forests, woodland, heathland, wetlands and grassland, as well as a diverse range of native fauna. However, much of Melbourne's natural environment has been irreversibly changed through habitat loss. Many land uses between remaining habitats are inhospitable to native flora and fauna, and there are many species of introduced flora and fauna present. The following section summarises the biodiversity values of metropolitan Melbourne today. Section 2.3 of the discussion paper provides further detail.

Much of the native vegetation within inner Melbourne has been cleared. Despite this, significant areas remain, particularly on Melbourne's fringes. Approximately 145,600 hectares of land in the investigation area contains native vegetation, of which two thirds is private land and one third is public land (i.e. Crown and public authority land). Approximately half of the public land with remnant native vegetation is managed for conservation within the protected area system.⁶

Melbourne is located at the junction of three major geomorphological landscapes, which has resulted in high plant diversity. Vegetation condition is highly variable across the investigation area, and there are large areas of threatened native vegetation, particularly in Melbourne's west. Melbourne's native fauna species have responded to Melbourne's urbanisation in different ways, with some adapting to the changed environment more successfully than others. Perhaps surprisingly, metropolitan Melbourne still retains a diverse vertebrate fauna. Section 2.3 of the discussion paper provides detail on the native vegetation diversity and condition and native fauna in the investigation area.

Metropolitan Melbourne contains internationally recognised wetlands such as Edithvale-Seaford Wetlands and the Western Treatment Plant at Werribee. These and other smaller wetlands provide important habitat for a range of flora and fauna (including migratory birds) and provide refuge in times of drought. Within the investigation area 6,400 kilometres of natural rivers and streams provide important habitat for riparian, semi-aquatic and aquatic flora and fauna, and also act as habitat corridors for wildlife.

A number of submissions responding to the discussion paper highlighted the importance of metropolitan Melbourne's remaining habitat for native flora and fauna, often within the context of climate change. For example, one submission noted that metropolitan Melbourne provides habitat for species, such as the scarlet honeyeater *Myzomela sanguinolenta*, that have recently extended or shifted their range, probably as result of climate change. Another submission noted the importance of the metropolitan area as a drought refuge.

Several submissions focused on the importance of retaining native vegetation in an urban area such as Melbourne to provide habitat for native flora and fauna and movement corridors for species that have shifted range due to climate change.

3.1 Pressures on Melbourne's biodiversity

The discussion paper identified a range of processes impacting on natural values. These include habitat loss, fragmentation and degradation, altered fire regimes, climate change and the impacts of recreation and tourism.

Several submissions discussed these pressures on biodiversity, and were concerned about the perceived lack of resources to appropriately manage these pressures on public land. A number of submissions stressed the importance of protecting natural values on public land from urban development and degrading processes, particularly remnant vegetation along Melbourne's waterways, coasts and roadsides. The proposed grassland and grassy woodland reserves in Melbourne's west were cited as good examples of protection of remnant native vegetation.

3.2 Protecting biodiversity on public land

Biodiversity is intrinsically valuable in its own right. It is also essential for human existence, contributing to the healthy environments, clean air and water that support human life. This contribution is reflected in community attitudes towards nature, with natural habitats within urban areas generally highly valued by the local community.¹¹ A key opportunity to enhance biodiversity, and also liveability, in the investigation area is to protect natural habitats on public land.

3.2.1 ADDITIONS TO THE PROTECTED AREA SYSTEM

There are many approaches to protecting biodiversity. Globally, protected areas are the cornerstone of these efforts. Victoria's protected area system contributes to the National Reserve System (see chapter 8 of the discussion paper for more detail). To be considered part of the National Reserve System, areas must be clearly defined geographical spaces, recognised, dedicated and managed through legal or other effective means to achieve the long-term conservation of nature with associated ecosystem services and cultural values. About 29,790 hectares or 33 per cent of public land, and about half of all Crown land (29,680 hectares) in the investigation area is in the protected area system. Appendix 2 lists protected areas in the investigation area.

Chapter 7 of this report contains recommendations for the addition of approximately 3,640 hectares of public land to the protected area system. The additions range from large areas such as the 2,590 hectare Yan Yean Reservoir and surrounds in Melbourne's north, to the small 8 hectare area known locally as 'Bandicoot Corner' at Bayles in Melbourne's south-east. The majority of these additions were presented as draft recommendations in the discussion paper.

These recommended additions aim to enhance the protection of natural values in the investigation area through the conservation of threatened species and communities, and by consolidating management and strengthening links along vegetated corridors. While there is limited scope in Melbourne's highly urbanised environment to make significant contributions to meeting the nationally agreed criteria for a comprehensive, adequate and representative reserve system on public land, even small improvements are important, given the very high pressures on biodiversity.

Appendix 3 lists, by bioregion, Ecological Vegetation Classes (EVCs) found in the areas recommended for addition to the protected area system. The extent of EVCs in the recommended additions is approximately 2,600 hectares. The remaining areas in the recommended additions include cleared land and water bodies. Threatened EVCs present in the recommended additions include valley grassy forest, plains grassy woodland, plains grassland, coastal saltmarsh and coastal alkaline scrub. Improved protection of plains grassy woodland and plains grassland through the addition of approximately 640 hectares into the protected area system is significant. Additional protection for these endangered EVCs will be provided on Melbourne Water freehold land at Ryans Swamp and surrounds (see recommendation N1).

The representation of vulnerable coastal saltmarsh in the Victorian Volcanic Plain bioregion will be substantially increased through the addition of approximately 525 hectares of this EVC into the protected area system. The endangered mangrove shrubland/coastal saltmarsh/berm grassy shrubland/estuarine flats grassland mosaic is also present in the recommended additions. While the 28 hectares of this EVC that is proposed to be added is small in area, it is a considerable proportion of the remaining EVC in the Victorian Volcanic Plain bioregion, none of which is currently in the protected area system. Similarly, the 22 hectares of coastal alkaline scrub EVC recommended to be added to the protected area system is a substantial proportion of its remaining extent in the Victorian Volcanic Plain bioregion, none of which is currently in the protected area system. Other notable additions include approximately 270 hectares of the vulnerable valley grassy forest EVC and almost 1000 hectares of grassy dry forest in the Highlands - Southern Fall bioregion.

Several submissions suggested that additional areas of public land with natural values be made protected areas. The areas ranged from small isolated blocks of remnant vegetation to substantial areas that provide habitat linkages across the landscape. Chapter 7 contains recommendations for two of the smaller areas to be added to the protected area system. Some submissions considered the retention and protection of surplus public land with natural values to be another option for enhancing biodiversity in metropolitan Melbourne.

3.2.2 RESERVING CROWN LAND WITH BIODIVERSITY VALUES

Maintaining natural values in areas outside conservation reserves or the protected area system can be more difficult in Melbourne than elsewhere because of the pressures on public land to accommodate a number of often incompatible uses. Indeed not all conservation can be undertaken on public land and private land will play an increasing role. Some apparently narrow public land connections between sites can also be greatly enhanced by complementary protection of natural values on adjoining private land. Examples of narrow biolinks include stream frontages, the coastline and government roads (both used and unused).

Other approaches to protecting biodiversity on public land include appropriate reservation and management of Crown land. Some reservation purposes mean that the land is dedicated to, and managed for, biodiversity conservation, thus making it part of the protected area system. Other reservation purposes are more general or have a primary purpose unrelated to biodiversity protection.

Using Geographical Information System (GIS) mapping of DSE modelled data,* VEAC estimates that more than 41,000 hectares of reserved Crown land and more than 5,400 hectares of unreserved Crown land within the investigation area has native vegetation. In the investigation area, about 485 hectares of unreserved Crown land with remnant native vegetation are outside of previous Land Conservation Council (LCC) investigation areas and consequently are not managed in accordance with any government accepted LCC recommendations.

The figures for unreserved Crown land derived from the GIS mapping may be over-estimates given that some reserved Crown land areas such as stream frontages, some areas of coastline and some roads are often not shown as reserved in DSE's Crown land database. Note also that some of the recommendations in chapter 7 of this report propose reserving currently unreserved Crown land with remnant native vegetation.

Preventing habitat loss and improving the condition of native vegetation are more cost effective and have significantly better conservation outcomes than revegetation.¹² Given the high level of clearing in metropolitan Melbourne, VEAC considers that all Crown land with remnant native vegetation is important.

Unreserved Crown land with remnant native vegetation should be reserved, particularly land that is not subject to government accepted LCC recommendations. The reservation purposes should, as far as possible, include the retention and protection of vegetation. The reservation purpose should also be amended for reserved Crown land with native vegetation, where the conservation of biodiversity is not the primary reservation purpose, so that retention and protection of native vegetation is a secondary purpose.

RECOMMENDATION

- R1** Additional protection for Crown land with remnant native vegetation be provided by:
- (a) reserving unreserved Crown land for a purpose that includes the protection of its remnant native vegetation; and
 - (b) amending the reservation purpose of reserved Crown land, where appropriate, to include the protection of its remnant native vegetation.



Above: Grassland and saltmarsh of the Victorian Volcanic Plain bioregion, including those at Point Cook Coastal Park and Cheetham Wetlands, are some of the most threatened vegetation communities in Victoria.

* The modelled dataset of native vegetation and major water-based habitats (NV2005_EXTENT) was created from a time-series of images captured between 1989 and 2005. The modelling was completed in 2007 by DSE's Arthur Rylah Institute.

3.3 Improving connectivity across the landscape

Given the fragmented nature of metropolitan Melbourne's remaining native vegetation, maintaining and extending ecological connectivity is important for the long-term viability of native flora and fauna in this patchy urban environment.

The final report for VEAC's Remnant Native Vegetation Investigation¹² highlighted the need to improve the link between statewide strategies and priorities with local-scale opportunities for protection, management and restoration of biodiversity. The report's recommendations aimed to consolidate management to improve biodiversity protection and increase ecological connectivity in fragmented landscapes.

A number of past and current programs promote connectivity across metropolitan Melbourne. These include:

- ▶ the Port Phillip and Westernport CMA's *Living Links* program which aims to create biolinks within the Dandenong creek catchment in the south-east of the investigation area
- ▶ the Merri Creek Management Committee's mapping of a proposed habitat corridor network for the upper Merri Creek catchment in Melbourne's north, with a focus on waterways in the catchment¹³
- ▶ the Australian Conservation Foundation's and DSE's regional sustainability framework for the Werribee Plains region (comprising the municipalities of Wyndham, Melton, Brimbank, Maribyrnong and Hobsons Bay in Melbourne's west), which provides a plan for habitat linkages across the catchment, focusing on waterways, the coastal zone and roads reserves
- ▶ various local government biodiversity strategies that promote ecological connectivity within individual municipalities.

Many submissions discussed landscape connectivity, with a focus on the need for an interconnected, multi-tenure conservation network across the investigation area and surrounds.

VEAC considers that such a network is important to provide habitat links for wildlife, facilitate adaptation to climate change and enhance ecosystem resilience (the ability of a system to absorb and recover from disturbance, such as vegetation loss and fragmentation, while retaining the same basic function).

About two-thirds of remnant vegetation in the investigation area is on private land, and many patches of native vegetation cross public land–private land boundaries. The protection of natural values on private land (for example, through mechanisms such as conservation covenants and

agreements) can complement the existing conservation network, and private land will play an important role in consolidating linkages across the landscape. The final report for the Remnant Native Vegetation Investigation recommended support for existing and new incentives for conservation of native vegetation on private land, and provides detail on how this can be achieved.

The Remnant Native Vegetation Investigation final report also recommended that government progressively establish an ongoing biodiversity action program across fragmented landscapes in Victoria which links local programs with regional administrative support and state-wide program co-ordination. It recommends that the program's priority be those landscapes:

- ▶ where there is a clear need for improved ecological connectivity and biodiversity conservation;
- ▶ where there is some community interest or activity towards improving ecological connectivity, but where there is not already a high level of activity;
- ▶ that have achievable initial outcomes.

Many landscapes in metropolitan Melbourne meet these criteria, although further work is needed to determine priority areas for local action programs. Metropolitan Melbourne also has diverse ecological and social settings, and there is support for current programs that address connectivity.

RECOMMENDATION

- R2** Local biodiversity action programs, as outlined in the final report for VEAC's Remnant Native Vegetation Investigation, be established in metropolitan Melbourne.

4 IMPLICATIONS OF CLIMATE CHANGE FOR PUBLIC LAND

The evidence is increasingly clear that the earth is experiencing a period of rapid warming associated with increased levels of greenhouse gases. Discussion and research continue around the details of future climate change scenarios based on modelling. These discussions relate to the magnitude of change for specific levels of greenhouse gases and not the basic premise that climate change is occurring.

Some uncertainties will continue given the complexity of the climate system and the range of possible future greenhouse gas emissions scenarios. Accordingly, many uncertainties surround projections of the risks that climate change poses, especially at finer spatial scales, and how communities and natural systems will be affected by, and respond to, these changes.¹⁴

Climate change is likely to impact on Melbourne's public land through increasing mean temperatures, greater rainfall variability (ranging from drought to heavy rainfall events), greater bushfire risk, pressures on biodiversity, and coastal inundation from storm surges combined with sea level rise. These environmental changes will in turn impact on Melbourne's liveability and natural values.

Section 2.4 of the discussion paper described Melbourne's climate and the projected climate changes. Chapter 7 of the discussion paper considered the predicted impacts of this changing climate on public land, with an emphasis on how these will affect Melbourne's liveability and natural values, and discussed the role that public land can play in mitigating and adapting to the impacts of climate change. The pressures on biodiversity from climate change were also discussed in chapter 8 of the discussion paper.

This chapter of the final report summarises and updates the information provided in the discussion paper on climate change and public land with a further discussion of some issues. Readers are encouraged to also refer to the discussion paper.

4.1 Increasing temperatures and rainfall variability

Globally, 2010 was one of the warmest years on record occurring at the end of the warmest decade recorded since 1880. The global mean annual temperature has now been above average each year for the last 25 years.¹⁵ In Australia, mean temperatures were not as high as global mean temperatures, but were none-the-less significantly above the long-term average for both mean minimums and maximums, with the last decade also the warmest ten year period on record.¹⁶

Although Melbourne has experienced a relatively wet 2011 so far, it is uncertain if this reflects a long-term shift back to more historical rainfall patterns. The severe rainfall shortages over the preceding decade may reflect a step-down reduction to a lower long-term average; however further research is needed to improve our understanding between climate change and the climatic processes that influence rainfall.

4.1.1 COUNTERING URBAN HEAT ISLANDS

Chapter 7 of the discussion paper described how urban heat islands are caused by hard impermeable surfaces (such as roads, footpaths and roofs) absorbing heat during the day and slowly releasing it during the night.¹⁷ It also discussed how parks and other treed areas and water bodies can help counter this effect. The importance of vegetated public land for ameliorating the urban heat island effect is likely to increase as urban densification increases in Melbourne and the climate warms.

Numerous submissions responding to the discussion paper commented on the importance of retaining vegetation on public land to reduce the urban heat island effect (see box 4.1), provide biodiversity corridors and contribute more generally to Melbourne's liveability. Several submissions stressed the importance of trees on public land, such as nature strips, parks and wildlife corridors along rail and road reserves. The "boundary to boundary" development of housing blocks, and the subsequent reduction in private trees and gardens, was one of the reasons cited as making urban forests on public land even more important. Some submissions called for the protection of existing urban vegetation, particularly native vegetation, and for the planting of more trees in urban

areas. There were some comments on the need to replant native vegetation or to select urban vegetation that can adapt to the predicted higher temperatures and increasing rainfall variability.

There were also some comments on the need to protect water catchments and practice water sensitive urban design given Melbourne's increasingly erratic rainfall and projected population increases.

Box 4.1

The importance of vegetated land for countering the urban heat island effect

Trees and other vegetation in public and private spaces can be thought of as an urban forest that provides shelter, shade, beauty, cleans the air, regulates the temperature, reduces energy needs of nearby spaces, treats and cleans stormwater, reduces loads on stormwater drains, protects and increases the life of infrastructure and provides habitat.¹⁸

Urban forests are the sum of all vegetation in an urban area. They include vegetation on private land such as backyard gardens, rooftop gardens and green roofs, and trees on industrial and commercial properties. They also include the vegetation on public land in significant parks and smaller nature strips, roadsides and land beside railway lines. As urban density increases, so does the importance of this vegetated public land.

There are measured differences in mean temperature of up to four degrees Celsius between the built up areas of Melbourne and outer areas such as Narre Warren. The higher city temperatures are attributed largely to the urban heat island effect.¹⁹⁻²¹

Trees provide shade which can keep surface temperatures close to air temperatures. Additional cooling by evapo-transpiration can reduce summer peak temperatures by one to five degrees Celsius.²²

The ability of urban trees to reduce the urban heat island effect is dependent on soil moisture and water supply. Periods of low rainfall can result in trees dropping leaves, with the reduced canopy providing less shading and evaporative cooling.

FINDINGS

- F1** All vegetated public land contributes to Melbourne's liveability, including small areas such as nature strips, pocket parks, and strips beside roads and railway lines.
- F2** The importance of treed areas of public land and water bodies for ameliorating the urban heat island effect is likely to increase in Melbourne as urban densification increases and the climate warms.

4.1.2 BUSHFIRE RISK

Climate change is predicted to increase bushfire risk, but the link is complex and geographically variable, making it difficult to quantify the risk.²³ Climate change may result in changes to fuel loads (in terms of composition and biomass), the condition of fuel loads (i.e. make them drier) and also increase the probability of extreme weather days (a combination of conditions with extreme temperatures, low humidity and high winds). The intensity and seasonality of large bushfires in south eastern Australia appears to be changing, with climate change a possible contributing factor.²⁴

Many Melburnians live on the urban fringes in areas susceptible to bushfire. In 2009, bushfires affected more than 24,400 hectares of land within the investigation area, including about 17,250 hectares of public land within the municipalities of Nillumbik, Whittlesea, Casey and Cardinia.

Following the 2009 bushfires and subsequent 2009 Victorian Bushfires Royal Commission, the Victorian government decided to substantially increase fuel reduction by prescribed burning and other measures, and to eliminate the source of some fires.

The Department of Sustainability and Environment's planned burning program has a target of 200,000 hectares on public land per year, increasing to 275,000 hectares net of wildfire (which is five per cent of treatable public land*) per year by 2013–14. The focus of this program is on reducing risk to life and property. The program will be based on scientific understanding of the impacts of fire on the landscape, industry and biodiversity and be increasingly informed by adaptive management through enhanced research and monitoring. The effectiveness of this approach will be reviewed to determine how best to proceed towards the target of 385,000 hectares by 2015–16.²⁵

4.2 Impacts on biodiversity

Major land use change in metropolitan Melbourne over the last 200 years has greatly altered many ecosystems and species compositions. Habitat loss and habitat fragmentation and degradation continue to impact on Melbourne's biodiversity. More erratic rainfall, increased temperatures, more frequent extreme weather events and sea level rise associated with climate change will exacerbate these existing stressors for many plants and animals.

It is difficult to predict the exact impacts of climate change on flora and fauna due to our incomplete understanding of how ecological processes will interact with one another. Impacts may include changes in the distribution, abundance and life cycle of flora and fauna species. For example, a global analysis of biodiversity distributions shows a profound shift in species ranges over a wide range of taxa with movement of about six kilometres per decade toward the poles.²⁷ Similarly, the early emergence of a butterfly species in Melbourne has been attributed to climate change.²⁸ Some species that are not currently threatened may become so.

Maintaining and extending ecological connectivity in metropolitan Melbourne will improve the resilience of flora and fauna species and is likely to aid adaptation to climate change. Some species may be able to expand their range by extending into areas with decreased competition or disease.²⁹ It is unlikely, however, that enhancing connectivity will be sufficient to protect all species. For example, the climate in which some species currently exist will over time either cease to exist or will shift to regions with unsuitable conditions for the establishment of identical or appropriate habitats.

Several submissions commented on the impact of climate change on biodiversity, including changes in ecosystem distribution, composition and function, and changes in species distribution. Submissions discussed the importance of remnant native vegetation on public land for providing new habitat and movement corridors for species that may shift in range due to climate change. Others discussed the importance of cross-tenure management across private and public land to help mitigate the impacts of climate change on flora and fauna.

One submission likened the metropolitan area to a drought refuge for some native plants and animals. Many urban parks and golf courses are well-watered, and can provide food resources (such as nectar-bearing plants) for fauna during periods of drought. Wetlands such as the Edithvale–Seaford Wetlands and other areas such as the Western Treatment Plant at Werribee are also recognised as important drought refuges for a number of bird species when inland lakes and wetlands dry out. The role of these areas as drought refuges may become increasingly important in the context of climate change.

The final report for VEAC's Remnant Native Vegetation Investigation¹² focused on opportunities to improve ecological connectivity. Its recommendations were aimed at improving biodiversity protection and ecological connectivity in fragmented landscapes. It recommended that government progressively establish a program for improving the link between statewide biodiversity strategies and priorities and local scale opportunities.

Chapter 3 of this report provides further discussion on enhancing Melbourne's biodiversity, including recommendations for enhancing the protection of remnant native vegetation on public land and across the landscape.



Above: Lake Borrie at the Western Treatment Plant is recognised as an important drought refuge for many bird species and is part of a Ramsar wetland of international importance.

* Treatable public land is the available area of public land in which planned burning can be safely and effectively undertaken to reduce fuel loads.²⁶

4.3 Planning for sea level rise and coastal inundation

4.3.1 IMPLICATIONS OF SEA LEVEL RISE

Victorians love the coast. Between 1996 and 2006 approximately nine out of ten Victorians visited the coast every year.³⁰ The open spaces and the opportunities for a broad range of recreational activities draw both those who live in coastal areas and visitors who come to the beach.

During this century the Victorian coastline is likely to be impacted by sea level rise and increased frequency and severity of storm events leading to inundation and erosion.³⁰ In 2007, the International Panel on Climate Change (IPCC) forecasted that, relative to 1990 levels, sea levels will rise between 0.18–0.59 metres by 2090–2099 plus an additional ice sheet melt contribution of up to 0.2 metres. The panel also noted that larger rises could not be excluded.³¹ The 2008 *Victorian Coastal Strategy* established a policy for planning for sea level rise of not less than 0.8 metres by 2100 and allowing for the combined effects of tides, storm surges, coastal processes and local conditions.³⁰ The Australian government used a risk based approach in 2009 to identify a sea level rise of 1.1 metres as a plausible scenario for this century.³² The rate of sea level rise is now tracking near the upper bounds of the IPCC projections.^{33,28}

The potential impacts of sea level rise include loss of beaches and coastal land, threats or damage to infrastructure, loss of habitat and biodiversity, and adverse effects on lifestyle and amenity values.³⁰ The most significant impacts of increased frequency and severity of storm events are erosion of beaches and loss of coastal landscapes, damage and loss of infrastructure or property, and flooding or permanent inundation.^{34,35} Local factors such as topography, elevation and geomorphology will determine which areas suffer the most damage from the combined effects of sea level rise, the impact of tides, storm surges and wave processes.

Access to beaches and foreshores will be impacted by sea level rise and storm surges. Many natural systems, including estuaries, coastal vegetation such as salt marsh and mangroves, wetlands and reefs are likely to become increasingly vulnerable. Areas currently subject to erosion—typically where development has occurred in places subject to active coastal geomorphological processes—are likely to be the sites most affected.³³

The *Victorian Coastal Strategy* 2008 highlights three broad strategies for adapting to climate change: protect, accommodate and retreat.³⁰ Protection strategies include 'hard' engineering measures, such as sea walls, and 'soft' measures, such as beach renourishment or breakwaters. Strategies to accommodate climate change impacts involve planning and design approaches that increase resilience to coastal climate change, such as higher floor levels or strengthened building materials. A strategy of retreat (or phased retreat) refers to land uses that will need to change or relocate in the future as a result of climate change impacts. These are not stand alone options; rather they provide broad adaptation strategies for consideration across varying timeframes.

4.3.2 VULNERABILITY OF COASTAL CROWN LAND IN METROPOLITAN MELBOURNE

The coastline of the investigation area stretches approximately 186 kilometres from Werribee to Frankston on Port Phillip Bay and from Warneet to Lang Lang on Western Port. Ninety-four per cent of the coastal foreshore is Crown land and about two-thirds of this is in parks and reserves such as Point Cook Coastal Park–Cheetham Wetlands, Altona Coastal Park, Truganina Coastal Park and Western Port Nature Conservation Reserve.

Melbourne's beaches and foreshore areas have important social, environmental, scenic and economic values. Being largely public land, the coast provides accessible recreational spaces for both residents and visitors. Most beaches and foreshores provide opportunities for walking, relaxing and socialising. Port Phillip Bay's many piers and jetties provide opportunities for other recreational activities such as fishing. The coast contains a range of vegetation communities, including coastal alkaline scrub, coastal dune scrub, coastal saltmarsh and coast banksia woodland. Melbourne's richly diverse intertidal and coastal environment is home to a number of species endemic to southern Australia, and also provides important habitat for migratory birds from places such as Japan and China.

Much of the coast around Port Phillip Bay and Western Port is low-lying, and vulnerable to rising sea levels and storm surges. Significant areas of this foreshore are likely to be at risk from inundation from sea level rise and storm events leading up to and beyond 2100. Storm surge inundation simulations for the Western Port region suggest that a current one-in-100 year storm surge could become a one-in-one to one-in-four year storm surge by 2070.³⁶

Sea level rise and storm events may cause significant loss of coastal open space in some municipalities. For example, approximately 115 hectares of public open space in one bayside municipality in metropolitan Melbourne (or one quarter of its total public open space) is on the coast. Depending on the elevation of the land and local conditions, this open space could be inundated or eroded.

Alterations to boundaries between land and water that change at a rate not readily noticeable, are governed broadly by a doctrine known to Common Law as the 'Doctrine of Accretion'. The doctrine broadly holds that, unless there is a clear contrary intention, gradual accretions of land from the water belong to the owner of the land gradually added to and conversely, land encroached upon by water ceases to belong to the former owner.³⁷

Climate change will lead to sea level rise and the principles that govern the application of the doctrine will apply. In general terms this may result in loss of land in relation to the water boundary resulting in altered land ownership. The coastal Crown land reserve boundary between land and marine waters is often indicated by reference to 'high-water mark' or 'the ocean' or 'the sea'. Where the sea invades reserved Crown land along the coast, the area of the reserve is reduced or even lost completely although it would remain vested in the Crown. Changes to the sea boundary does not of itself cause any change to a boundary between the coastal reserve and any abutting freehold land.

Although individual cases need to be considered separately, application of the doctrine will become increasingly relevant as sea level continues to rise.

Several submissions commented on the importance of coastal foreshores for open space, coastal ecosystems and community and commercial infrastructure and on their vulnerability to inundation and erosion from sea level rise and storm events. Some submissions considered that greater protection from climate change impacts is necessary (e.g. sand bags and storm surge barriers). Others thought that risks should be avoided by not developing flood-prone and coastal areas that will be affected by climate change.

Figure 4.1 shows the elevation above sea level of a section of the coast in the investigation area using the statewide Digital Elevation Model (DEM) developed for the Future Coasts program.³⁸ Mapping elevation gives a broad indication of the future vulnerability of coastal land to rising sea levels and storm surge inundation. It is illustrative only, as it does not account for this coastline changing over time, infrastructure or other barriers or the effects of local environmental conditions, such as risk of erosion. It does, however, give an indication of the significant vulnerability of coastal Crown land from sea level rise and storm surges. The Victorian government is currently assessing the vulnerability of coastal areas.

Elevation level intervals of 0–0.8 metres, 0.8–2 metres, 2–3 metres and greater than 3 metres above sea level were chosen to encompass the following scenarios for sea level rise by 2100:

- ▶ *Victorian Coastal Strategy 2008* recommendation for planning for sea level rise of not less than 0.8 metres³⁰
- ▶ Department of *Climate Change, Climate Change Risks to Australia's Coast*, scenario of 1.1 metre sea level rise for this century³²
- ▶ CSIRO projection of 1-in-100 year storm tide levels around the northern part of Port Phillip Bay of 1.91 to 2.55 metres.³⁹

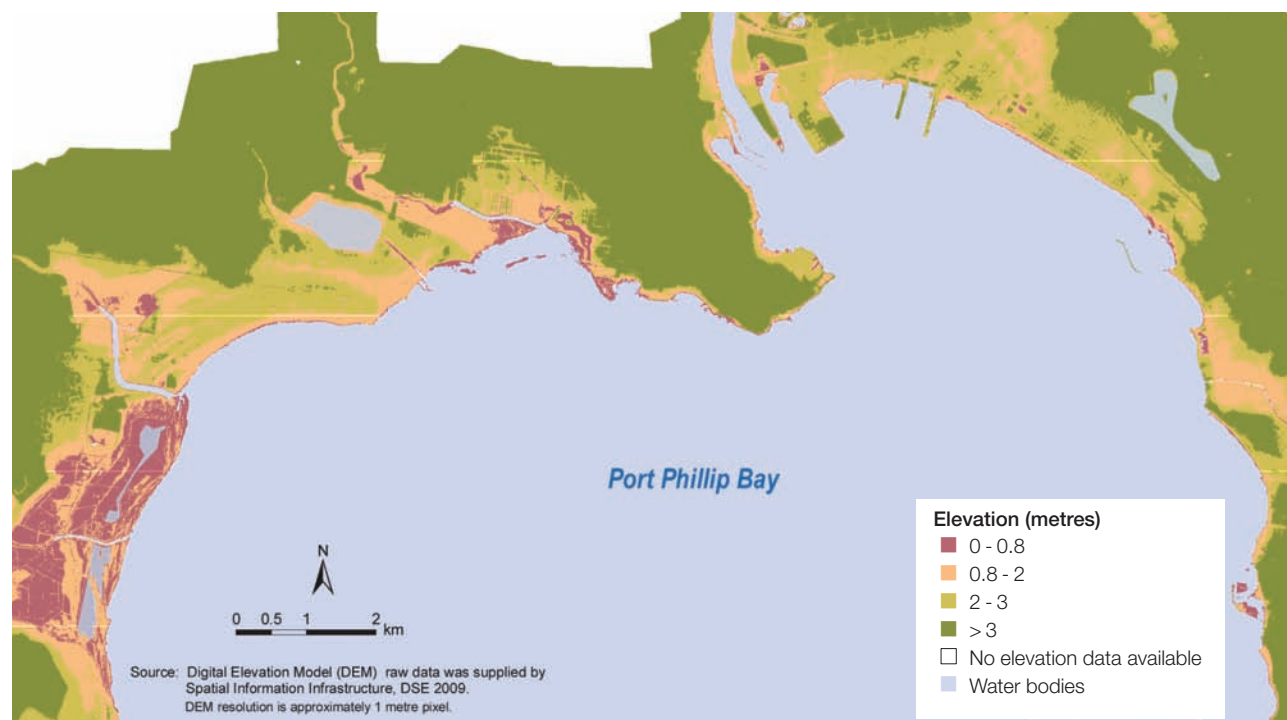
While simplified at this scale, figure 4.1 gives an indication of the significant vulnerability of coastal Crown land from sea level rise and storm surges.

RECOMMENDATION

- R3** The next Victorian Coastal Strategy consider the implications of sea level rise and inundation for Crown land foreshores, and provide guidance on how the adaptation options of protect, accommodate and retreat should be implemented in relation to this land.

Figure 4.1

Elevation above sea level of a section of coastline in metropolitan Melbourne



5 PROVIDING PUBLIC OPEN SPACE

Chapter 6 of the discussion paper examined the contribution of public open space to Melbourne's liveability and provided some background on open space planning in the metropolitan area. It described the extent and ownership of public open space across the investigation area, and discussed some of the major issues associated with, and future options for, providing open space. This chapter further considers the issues associated with Melbourne's open space network. It includes findings and final recommendations relating to the protection and distribution of public open space across the investigation area and the need to maintain data on, and develop a strategy for, Melbourne's open space network.

VEAC defines public open space as "those areas of public land and local council land that have an accepted and ongoing community use for outdoor recreation and informal activities, and that are freely accessible to the public". Further detail on the definition of public open space is provided in section 6.1 of the discussion paper.

Local council land is an integral part of metropolitan Melbourne's public open space network. Although VEAC's legislation specifies that VEAC is to conduct investigations and make recommendations relating to public land (which does not include local council-owned land), VEAC found it could not properly consider open space issues in metropolitan Melbourne without taking local council land into account. This is due to the integrated nature of local council and public land in Melbourne's public open space network and because local council-owned open space provides essential context for any discussion of open space on public land. For these reasons, the analyses of public open space discussed later in this chapter cover data on local council land and public land and many of VEAC's findings and recommendations contained in this chapter relate to open space on both public and local council land.

Public land within metropolitan Melbourne has a range of purposes and uses, including public open space. Other uses include water and transport infrastructure and community services such as hospitals, police stations and schools. In chapter 7 all public land is categorised according to its primary use.

Open space is an important contributor to Melbourne's liveability. Section 6.7 of the discussion paper examined this contribution in detail. Some examples of the contribution of public open space to liveability are provided below. These are drawn from the literature review undertaken in *The contribution of public land to Melbourne's liveability*⁴ and from information collected by local councils through municipal household and on-site surveys.⁴⁰⁻⁴⁵

Public open space contributes to:

- ▶ **physical health** (including addressing obesity) by providing opportunities for physical activity and children's play in parks, beaches, sportsgrounds, playgrounds and along walking and cycling paths
- ▶ **mental health** by providing opportunities to undertake informal activities such as relaxing and being in natural environments
- ▶ **social capital** by providing opportunities for group gatherings (such as picnics and barbecues), socialising and meeting new people and integrating new members of the community in parks, beaches and playgrounds and sports venues
- ▶ **stimulated and sustainable economies** by providing a venue for a variety of community, tourism and commercial activities in city squares and promenades, beaches and parks, which in turn generate employment
- ▶ **environmentally sustainable urban areas** through the protection of nature values in parks, provision of ecosystem services and reduction in the urban heat island effect
- ▶ **artistic expression and cultural diversity** through the provision of venues for community, sporting and cultural events and festivals in city squares and promenades, parks, beaches and sportsgrounds, which contribute to the diversity and liveliness of urban areas.

Public open space was the most common theme raised in submissions, indicating its importance and relevance to the wider community. Many people commented on the mental and physical health benefits of open space. There was, however, concern that open space quantity and quality would decline as a result of development and the intensified demand for open space resulting from increased population and reductions in private open space. Submissions also expressed concern that predicted climate change impacts such as drought, flooding and erosion might decrease the quality of open space, affecting Melbourne's liveability.

Open space has a range of users with different preferences and capabilities. Open space use varies between different age groups. For example, several local council surveys indicate that young children largely use playgrounds and open play areas.^{46,40} For older children, a national study found that two-thirds of children aged between five and fourteen participate in organised recreational activities such as Australian Rules football, netball and soccer, as well as a range of non-organised and informal activities.⁴⁷ Older residents generally participate less in contact sports and more in activities such as golf, non-organised activities such as walking and cycling and informal activities.^{48,49}

Some research has been undertaken in relation to use of parks by different cultural groups, although conclusions from this research are not always consistent. Regular community surveys of public open space use in the Sydney metropolitan area suggest little difference in park usage between overseas born and Australian born, although those speaking a language other than English at home were less likely to have visited a park in the week preceding the survey.⁵ Another survey conducted by the Monash Tourism Research Unit in 2008 suggests lower rates of park use by first generation migrants.⁵ It has also been reported that some cultural groups (particularly those of southern European background) seek open space areas where large extended family groups can gather for informal activities.⁵⁰ Other research suggests that residents born in non-English speaking countries value parkland and garden areas more highly than natural landscapes.⁵¹

There is limited information available on the use of open spaces such as civic squares and promenades in metropolitan Melbourne. Federation Square in Melbourne's centre is one of the city's most well-known civic squares, and is a popular area for cultural activities and dining. One study indicates that almost one quarter of Melburnians who visited the central business district (CBD) on weekends visited Federation Square, and that this was the most popular area visited in the CBD.⁵²

FINDINGS

- F3** Public open space is a key contributor to Melbourne's liveability.
- F4** The community perceives that Melbourne's increasing population will result in a loss of quantity and quality of public open space.
- F5** Melbourne's public open space is highly valued by the community.
- F6** Different sectors of the community use and value public open space in different ways.



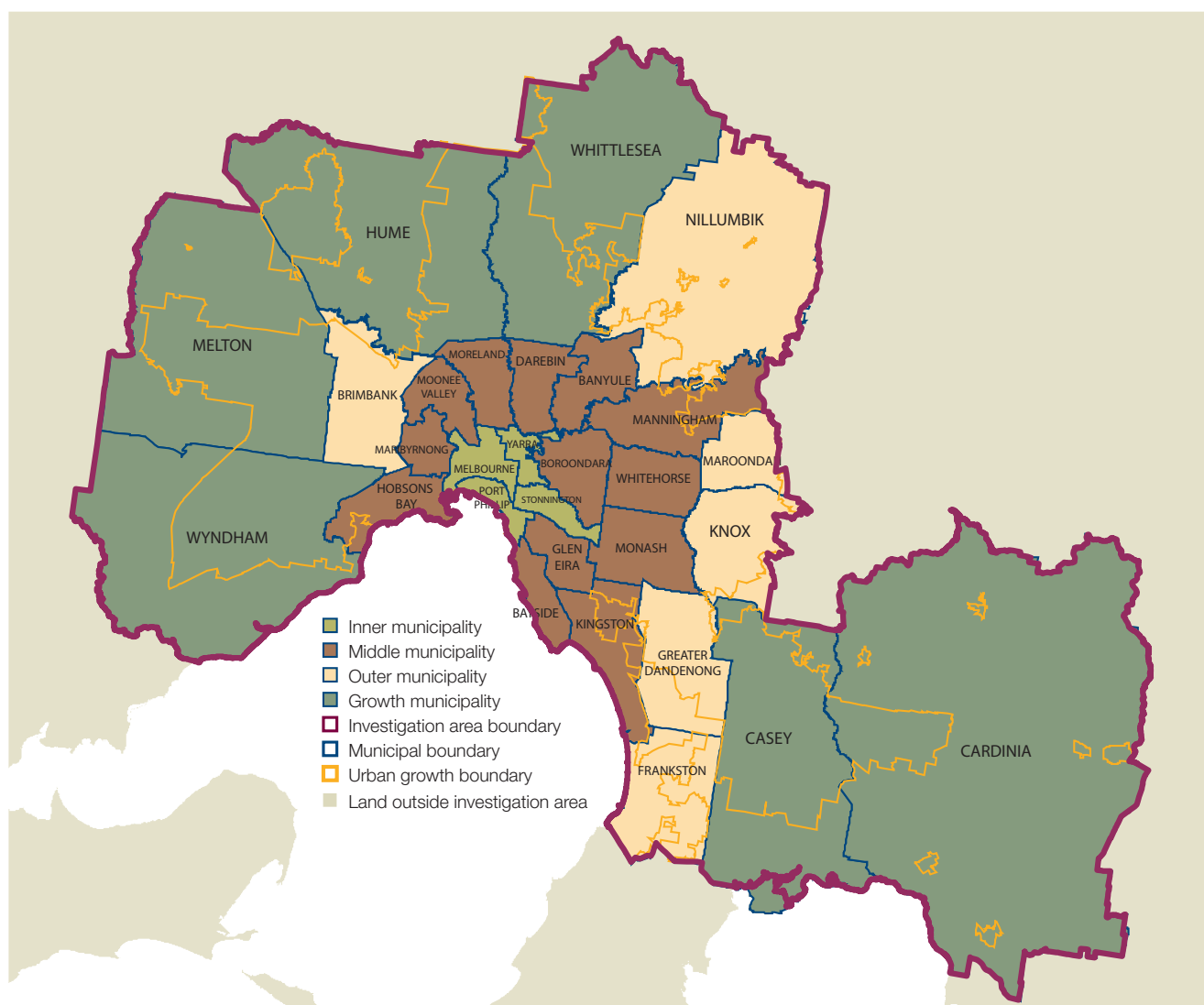
Above: The Yarra River at Studley Park provides opportunities for recreation and relaxation.

5.1 Melbourne's public open space network

The open space network includes local parks, gardens and sportsgrounds, the national and state parks that border the metropolitan area, metropolitan/regional parks including those along Melbourne's major waterways, Port Phillip Bay and Western Port foreshores, streamside corridors, and the pathways and bicycle trails that link these spaces along road, rail and streamside corridors. Open space is managed by a range of organisations—generally public authorities, local councils and committees of management. Maps C and D in the rear pocket of this report show open space within the investigation area.

Section 6.6 of the discussion paper included a description of Melbourne's open space network in terms of ownership, categories of open space and distribution across municipalities in the investigation area. This information was derived from the analysis of data in VEAC's open space inventory (see section 5.2 for more detail). The data and analysis have been updated since the release of the discussion paper based on further information received from public authorities, local councils and the community on the categorisation of a range of specific open space sites and other corrections (see appendix 4). Updated data on Melbourne's population have also become available since the release of the discussion paper.

Figure 5.1
Inner, middle, outer and growth
municipalities in the investigation area



The following sections provide a revised description of Melbourne's open space based on the updated data. Readers should note that most differences between the descriptions and data provided in the discussion paper and those provided in this report relate to changes to open space categories and are largely due to VEAC's decision to combine two of the open space categories used in the discussion paper ('multiple-purpose area' and 'nature-based recreation area') into one category ('natural and semi-natural area').

Two descriptions of open space are generally provided—one for the entire investigation area and another for those parts of the investigation area that are within the Urban Growth Boundary. The second description is provided to give a better indication of open space that is easily accessible to most residents in outer and growth areas. For example, the residential areas of municipalities such as Nillumbik and Cardinia are primarily inside the Urban Growth Boundary and large rural areas and parks (such as Kinglake National Park and Bunyip State Park) are outside the Urban Growth Boundary. These large parks are not in close proximity to most residents within these municipalities.

There are, however, some limitations to the second approach as some open space immediately outside the Urban Growth Boundary is readily accessible to urban residents (see maps C and D). Key examples are the following metropolitan and regional parks: Braeside Park in Kingston; Point Cook Coastal Park and Cheatham Wetlands in Wyndham and Hobsons Bay; Police Paddocks Reserve in Casey; Woodlands Historic Park in Hume; and Plenty Gorge Parklands in Whittlesea and Nillumbik. The second approach also assumes that almost all of a municipality's population resides within the Urban Growth Boundary.

Comparisons have also been made between the inner, middle, outer and growth municipalities (shown in figure 5.1). Inner and middle municipalities are collectively referred to as 'established' municipalities throughout this chapter.

5.1.1 EXTENT, CATEGORY AND OWNERSHIP OF PUBLIC OPEN SPACE

The Metropolitan Melbourne Investigation area contains more than 67,080 hectares of public open space, while the investigation area within the Urban Growth Boundary contains more than 22,360 hectares of open space.

Public open space comes in many forms ranging from large national parks to local sportsgrounds and pocket parks. It can be categorised according to form, use and the size of the visitor catchment it services. The different categories developed and used by VEAC to describe public open space in metropolitan Melbourne are outlined in table 5.1. Map C shows open space in the investigation area according to these categories.

Recreation corridors (off-road trails used for walking and cycling) are an important component of the public open space network. However, it is difficult to map all trails in such an extensive network. The metropolitan trail network is shown as an overlay on maps C and D, but is not included in the analysis of open space discussed in the following parts of this chapter. Only major civic squares and promenades are included in the inventory due to the difficulty in mapping the full range of these areas.

Figure 5.2 shows the proportion of public open space in each category across the entire investigation area and for those parts of the investigation area within the Urban Growth Boundary. Almost half of all public open space in the investigation area is protected areas (largely Kinglake National Park and Bunyip State Park). About one third is natural and semi-natural areas, and about twenty per cent is parkland and gardens and organised recreation areas combined. These proportions change substantially when only land within the Urban Growth Boundary is considered. About seven per cent of public open space within this boundary is protected areas (Kinglake National Park and Bunyip State Park are outside the Urban Growth Boundary). Parkland and gardens and organised recreation combined make up more than half of all open space.

Map D shows the ownership of open space in the investigation area. Most public open space in the investigation area is Crown land (72 per cent or 48,371 hectares). Approximately 24 per cent (15,845 hectares) is local council land and four per cent (2,865 hectares) is public authority land. In those parts of the investigation area within the Urban Growth Boundary, a higher percentage of open space is local council land (58 per cent or 12,922 hectares), with approximately 34 per cent (7,457 hectares) being Crown land and nine per cent (1,988 hectares) being public authority land.

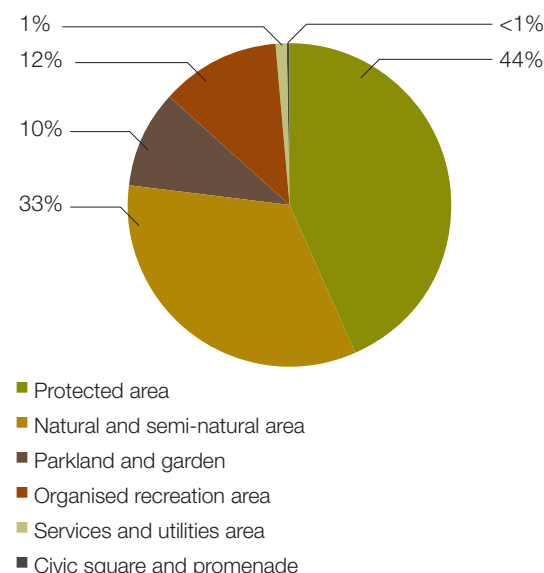
Section 6.7 of the discussion paper examined historic patterns of public open space provision and acquisition in inner and middle municipalities and provided further detail on the ownership patterns of open space across the investigation area.

Table 5.1**Public open space categories**

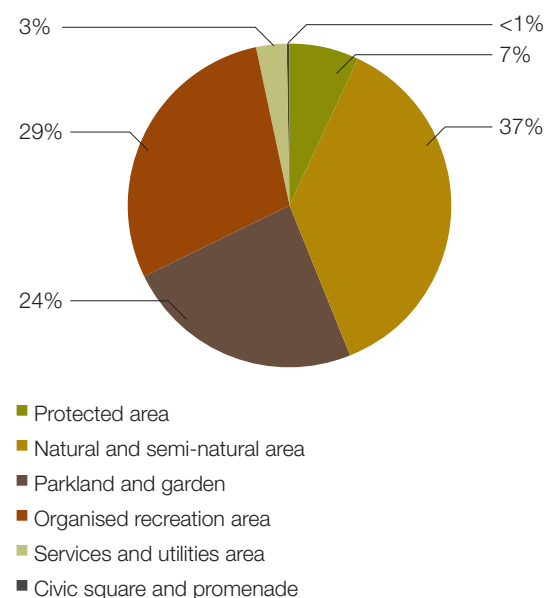
CATEGORY/DESCRIPTION	EXAMPLE	VISITOR CATCHMENT
Protected area These areas are set aside for the conservation and protection of natural ecosystems, landscape character and/or historical and scenic features. All are Crown land and part of Victoria's protected area system. They can be used for some non-organised recreation and informal activities, in accordance with management plans.	National and state parks, nature conservation reserves, natural features reserves that are part of the protected area system (bushland areas, streamside areas and scenic reserves)	State
Natural and semi-natural area These areas are vegetated and can range from remnants of native vegetation through to revegetated and semi-landscaped areas. This category includes areas managed for the conservation of their natural and heritage values that are not included in the protected area system. It also includes long, relatively narrow, interconnected open space areas which can provide visual buffers, movement corridors for pedestrians, cyclists (where appropriate) and/or flora and fauna. Some Crown and public authority land may have a resource use (e.g. state forests) or drainage function (e.g. stream frontages). Recreational uses vary, depending on how compatible they are with the conservation values and other uses of the area. In some areas (e.g. regional parks), recreation may be the primary use.	Wetlands, stream frontages, state forests, corridors located along waterways, regional or metropolitan parks, coastal parks, coastal reserves, larger local council parks	State/regional/ district/ local
Parkland and garden These are generally landscaped areas that provide for a range of non-organised recreation and informal activities. Some parkland can have some natural values.	Open parkland, reservoir parks, formal public gardens, pocket parks and playgrounds	Generally local, but also regional/district
Organised recreation area Areas primarily used for playing organised, often club-based, sport in an outdoor setting. Many areas also have space for informal activities.	Sportsgrounds, bowling greens, public golf courses and driving ranges, tennis courts, netball and basketball courts	Regional/district/local
Services and utilities area Areas used primarily for service delivery purposes that have a secondary recreational use.	Pipe tracks, retarding basins, aqueducts and some power line easements	District/local
Civic square and promenade Major hard-surfaced open areas and long, open areas (often adjacent to rivers) used for non-organised recreation and informal activities, such as community gatherings.	Areas such as Federation Square and Southbank promenade	Regional/district/local
Recreation corridor Off-road trails used for walking and cycling that link areas of public open space.	Trails such as the metropolitan trail network and rail trails	Regional/district/local

Figure 5.2

Public open space by category in the investigation area



Public open space by category within the Urban Growth Boundary



5.1.2 DISTRIBUTION OF PUBLIC OPEN SPACE

There are a number of ways to describe the distribution of public open space across the investigation area. The proportion of municipal area and area per capita ratios are discussed below. More detail on these measures is provided in section 6.7 of the discussion paper.

These are just two methods of measuring open space provision. Accessibility in terms of walking distance, the range of open space opportunities available and the quality of the open spaces are other important measures.

Proportion of municipal area

Approximately 12 per cent of all land in the investigation area is currently public open space. This figure increases to almost 18 per cent if areas zoned in the planning scheme as industrial, green wedge, farming and rural conservation zones are excluded. Similarly, while about four per cent of all land within the Urban Growth Boundary is currently public open space, this increases to about 11 per cent if these zones are excluded. It is expected that these proportions will change over time with the creation of new open space such as new regional and local council parks and changes to planning scheme zones.

Areas zoned in the planning scheme as industrial, green wedge, farming and rural conservation zones were excluded from the analysis as it is assumed that a low proportion of the population currently resides in these areas. It is interesting to note that areas zoned in the planning scheme as green wedge, farming and rural conservation zones have decreased in some municipalities since the release of the discussion paper, particularly in the growth municipalities. This is largely due to the rezoning of areas of green wedge zone to urban growth zone (i.e. for urban development) in these municipalities.

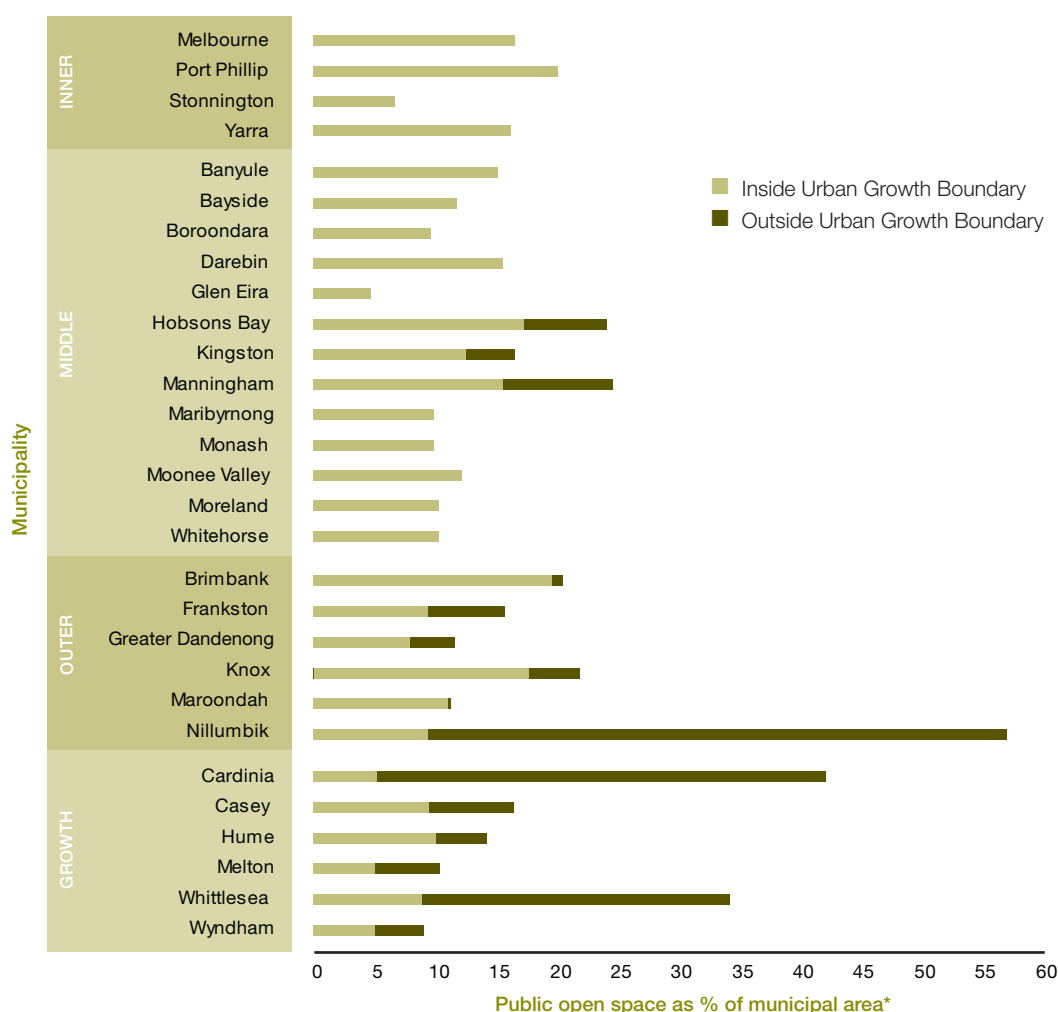
Figure 5.3 shows public open space as a proportion of the total area of each municipality (excluding areas zoned in the planning scheme as industrial, green wedge, farming and rural conservation zones) for the entire investigation area and for these parts of the investigation area within the Urban Growth Boundary. No clear pattern is apparent when comparing established and outer and growth municipalities.

Public open space as a proportion of the entire municipality is lowest in Glen Eira (4.7 per cent), Stonnington (6.7 per cent), Wyndham (9.1 per cent), Boroondara (9.6 per cent) and Maribyrnong and Monash (both 9.9 per cent). The highest proportion is found in Nillumbik (56.9 per cent), Cardinia (42.1 per cent), Whittlesea (34.2 per cent), Manningham (24.6 per cent) and Hobsons Bay (24.1 per cent).

The proportion of open space in most growth municipalities and the outer municipality of Nillumbik changes substantially when considering areas within the Urban Growth Boundary, as only part of these municipalities lie within this boundary. For example, the proportion of open space in Cardinia is about five per cent when considering areas within the Urban Growth Boundary—this figure is about 42 per cent when considering the entire municipality, largely due to Bunyip State Park and Kurth Kiln Regional Park. Public open space as a proportion of this area in some growth municipalities, for example, Melton, Wyndham and Cardinia, is lower than that of many established municipalities. However, it is anticipated that the Growth Areas Authority's precinct structure planning process will provide for higher proportions of open space in these municipalities than these figures indicate.

The Growth Areas Authority's precinct structure plan guidelines set out a consistent approach for the preparation of precinct structure plans. The guidelines are based on delivering passive and active open space within 400 metres of 95 per cent all residents. They state that the equivalent of approximately 10 per cent of 'net developable' land in residential areas should be unencumbered public open space. The Growth Areas Authority has indicated that, on average, significantly more open space is delivered through precinct structure plans than the 10 per cent provided on unencumbered land. This is because encumbered land, such as land used for drainage and easements, can in many circumstances also provide some types of open space.

Figure 5.3
Proportion of public open space in each municipality



**'Municipal area' excludes areas zoned in the planning scheme as industrial, green wedge, farming and rural conservation zones.*

Some local councils in growth municipalities commented during consultation that the 10 per cent standard in the guidelines does not take into account housing densities of 15 dwellings per hectare and hence the relatively high future population densities. One local council suggested that an open space standard based on population density (with open space provision increasing with population growth) would be more appropriate.

Public open space per capita

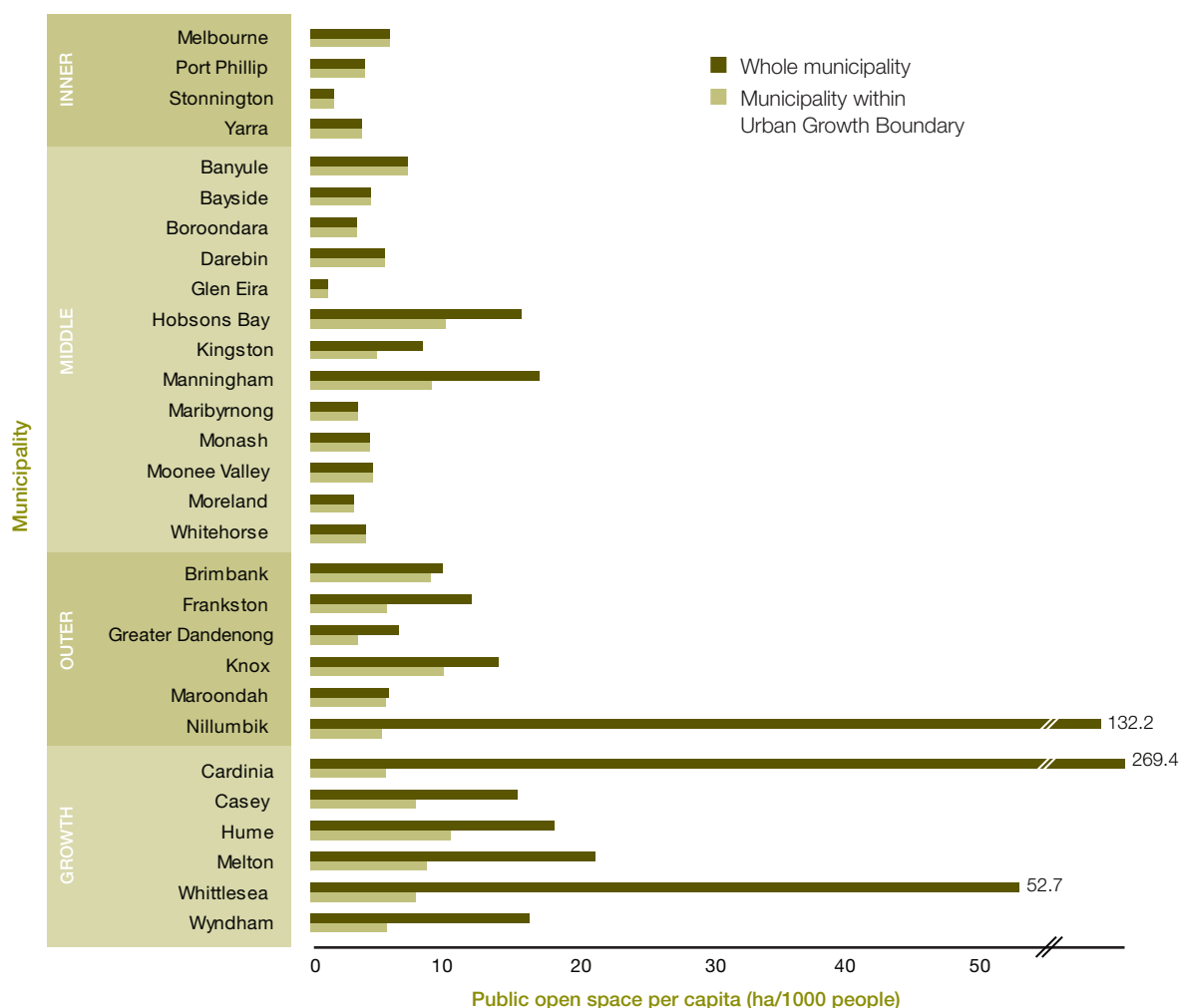
Section 6.7 of the discussion paper provided an indication of current and future open space per capita for each municipality using *Victoria in Future*⁵³ population data and projections for 2006, 2016 and 2026. Due to the difficulties in projecting future open space, only land subject to Public Acquisition Overlays for addition to

regional parks was included as future open space. While limited in this respect, the analysis provided some insights and identified potential pressures from existing and increasing population densities on public open space across metropolitan Melbourne.

Across the investigation area, the analysis indicated that growth municipalities have, and are projected to retain, higher per capita levels of open space than most other municipalities. It is anticipated that new open space will be provided in these areas through the planning process and, in some cases, new regional parks.

Public open space per capita in the City of Melbourne was projected to decrease significantly given its anticipated strong population growth. Municipalities like Glen Eira and Stonnington, with low per capita provision, will in all likelihood have decreased per capita levels of open space.

Figure 5.4
Public open space per capita (hectares/1000 people) in the investigation area and within the Urban Growth Boundary, 2010



Several submissions were concerned about this predicted decline in public open space per capita, particularly in established municipalities. While there are potential opportunities for increasing the amount of public open space in growth municipalities, there are fewer opportunities in established municipalities.

For areas within the Urban Growth Boundary, public open space per capita was projected to decrease over time for all municipalities except Knox and Nillumbik. Growth municipalities, such as Cardinia and Wyndham, will be relying on new open space to offset population growth. Otherwise, levels of open space per capita in some growth municipalities and the outer municipality of Greater Dandenong may decrease to lower levels than some established municipalities.

Recently released Australia Bureau of Statistics¹² population estimates for metropolitan Melbourne indicate that the current population in some municipalities (Bayside, Brimbank, Glen Eira and Moonee Valley) has already exceeded the projections for 2016 (that is, population growth has been more rapid than anticipated). As the revised *Victoria in Future* population projections have not yet been released, this report is providing open space per capita for 2010 only. Readers are referred to the discussion paper for VEAC's previous projections of open space per capita over time.

Figure 5.4 shows public open space in hectares per thousand people for each municipality in the investigation area. As can be seen, public open space per capita differs widely across the investigation area, from one hectare/1000 people in Glen Eira to 269 hectares/1000 people in Cardinia (a function of this municipality's large area and relatively small population).^{*} Public open space per capita is generally higher in the growth municipalities and lower in the inner municipalities.

Figure 5.4 also shows public open space in hectares per thousand people for the areas of municipalities within the Urban Growth Boundary. As shown in this figure, public open space per capita changes considerably for growth and outer municipalities. For example, open space per capita in Greater Dandenong (3.6 hectares/1000 people) is less than that of many established municipalities. Most other growth and outer municipalities have between five and ten hectares of open space per thousand people.

FINDINGS

- F7** There is an uneven distribution of public open space across the investigation area, with no clear patterns apparent. However, established municipalities generally have less public open space per capita than outer and growth municipalities.
- F8** Without the retention and creation of public open space on both public land and local council land, public open space per capita will decrease over time for almost all municipalities in the investigation area.
- F9** Current planning to ensure that adequate public open space is provided in growth municipalities needs to continue. Without this planning, there is a risk that areas of these municipalities will have similar or lower levels of public open space over time than some established municipalities because of their rapidly growing populations.
- F10** The projected decrease in public open space per capita is likely to be exacerbated in established municipalities where there is limited scope to create additional public open space to meet population increases.

^{*} The analysis uses population figures from the Australia Bureau of Statistics (ABS).² The ABS does not provide separate population figures for areas inside and outside the Urban Growth Boundary. For the purposes of these analyses it has been assumed that a low proportion of the population currently resides outside the Urban Growth Boundary in the investigation area and the population figures for entire municipalities have been used to approximate population figures within the Urban Growth Boundary.

5.2 Maintaining and using the public open space inventory

The data discussed in the previous sections were derived from an inventory of public open space on Crown land, public authority land and local council land for the investigation area. The inventory was compiled by VEAC with the assistance of public authorities and local councils. VEAC also drew upon DSE's Crown land database. Section 6.6 of the discussion paper provides further detail on the inventory.

There have been minor changes in the amount and ownership of public open space since the discussion paper was published in 2010. VEAC also received comments from public authorities, local councils and the community on the categorisation of a range of specific open space sites. Appendix 4 provides updated data for the amount and type of public open space in metropolitan Melbourne, the proportion of public open space in each municipality, public open space ownership and open space per capita for each municipality in the investigation area. Maps C and D show public open space across the investigation area by type and land ownership.

VEAC's consultation with the community and local councils found that the inventory was widely regarded as an important and valuable resource for strategic open space planning and for monitoring trends in open space provision over time. Many submissions, largely from public authorities and local councils, supported its regular maintenance and update and requested that the inventory be made available to local councils and the community. Some submissions stressed the importance of quality and accessibility when assessing open space. Possible future additions to the inventory, such as categorising areas of open space according to the visitor catchment they service (local, district, regional, state and national) and mapping open space accessibility, would allow for further analysis of inventory data.

The open space inventory is an important resource that will provide a baseline for future investigations of Melbourne's open space network and support strategic open space planning and policy development by state government and local councils. The open space network will change over time (for example, through the creation of regional parks in growth areas and local parks by local councils), and the inventory will need to be updated accordingly.

RECOMMENDATIONS

- R4** Government maintain the public open space inventory developed by VEAC and:
- (a) update the public open space data for public land and land owned by local councils at least every five years
 - (b) make the spatial dataset available to local councils; and
 - (c) make the information in the inventory available to the community.
- R5** The public open space inventory data be used to inform the Government's proposed metropolitan strategy for Melbourne.

5.3 Meeting the public open space needs of Melbourne's growing population

Metropolitan Melbourne's* population is projected to grow from 4.08 million people in 2010 to between 5.1 million and 5.7 million people by 2031.⁵⁴ Metropolitan Melbourne had the largest growth of any Australian capital city in 2009–10 (and has had for the past nine years), with most of this population growth occurring in Melbourne's growth municipalities.² In order to maintain the current contribution of open space to Melbourne's liveability, existing open space will need to be protected and new open space will need to be provided so that Melbourne's open space network can meet the needs of its growing population.

* These population figures include the Shires of Mornington Peninsula and Yarra Ranges.

5.3.1 PROTECTING MELBOURNE'S PUBLIC OPEN SPACE NETWORK

Crown land can be reserved for a variety of purposes. Some specific reservation purposes such as 'public parks, gardens and public recreation' secure open space for that purpose. Other reservation purposes are more general or have a primary purpose unrelated to recreation and leisure.

Section 6.8 of the discussion paper sought comment on the protection of open space through the reservation of Crown land. About one-third of submissions commented that public open space should be secured by ensuring that appropriate legal status is given to the land.

VEAC estimates that about ten per cent of 'organised recreation areas' and 'parkland and gardens' within this investigation area, but outside previous Land Conservation Council investigations areas, are unreserved Crown land. The reservation of these areas for public parks, public recreation or other more specific purposes would help secure this open space. Reservation also enables regulations to be made and the appointment of committees of management.

Some public land managers consider that general 'public purposes' reservations provide for flexible and changing land use. However, this approach can be counterproductive where the principal aim is to protect open space, biodiversity or other specific values for the long term.

In most of the public land use recommendations in chapter 7, VEAC is recommending that any unreserved Crown land be permanently reserved under the *Crown Land (Reserves) Act 1978* for the purposes specified. Of particular relevance to this discussion are the recommendations for regional parks (recommendation C), metropolitan parks (recommendation D) and community use areas (recommendation I).

Another mechanism for protecting open space is in the State Planning Policy Framework. Clause 11.03 of this policy states that where there is a change in land use or in the nature of occupation resulting in a reduction of open space, the overall network of open space must be protected by the addition of replacement parkland of equal or greater size and quality. This is based on the principle of no net loss of open space.

While the State Planning Policy Framework requires the replacement of open space, there is currently no requirement to consult with the community when reductions in open space are proposed. Furthermore, some specific legislation, such as that relating to freeway construction entities, can override the general planning principles in the State Planning Policy Framework.

Section 6.8 of the discussion paper sought comment on the replacement of public open space and the importance of a public process to review the losses and gains in open space. Submissions strongly supported the replacement of public open space permanently lost through development. Submissions also generally supported the comment that proposed losses be subject to a public process to review any losses or gains in open space extent, quality and/or accessibility.

Melbourne's public open space is highly valued by the community, and it is important that public processes are utilised so that the costs and benefits of these changes to the community can be considered.

Public open space can also be reduced in area by new building works or expansion of existing buildings that are compatible with the use of the open space e.g. sports facilities, shelters and other community buildings. In these cases, the buildings would often be compatible with the reservation purpose and they would not be considered losses of open space under the State Planning Policy Framework. While their impact may be relatively small on an individual basis, there may be a cumulative impact, particularly in municipalities with a low level of public open space.

Submissions highlighted the increasing demand for the construction of community facilities and public infrastructure in existing open space areas, particularly as land values increase. A further issue raised in submissions was the perceived trend from freely accessible open space, such as parkland, to areas with exclusive use such as indoor sports venues in an existing park. Box 5.1 provides an example of different community perspectives on the construction of buildings in open space areas.

The construction of facilities such as sportsgrounds, change rooms and clubrooms can enhance the enjoyment and use of open space for some members of the community. For others, the construction of such buildings in parkland areas reduces their enjoyment as it decreases the amount of freely accessible open space. As Melbourne's population increases, it is expected that there will be a greater demand for sporting and related facilities. Public open space will need to be managed to maximise public access and to provide the widest range of user opportunities.

Box 5.1

Development of facilities on public open space in Caulfield Park

Caulfield Park is in the south-eastern Melbourne suburb of North Caulfield. The Park is about 25 hectares in area and is on Crown land. It was permanently reserved for public park, gardens and public recreation in 1866. It is managed by Glen Eira City Council as a committee of management. Much of the park contains sportsgrounds and hard courts, while the western end contains a parkland area. The park also contains a playground and conservatory.

The construction of a new Caulfield Park Pavilion in the central part of the park was completed in 2009. The 0.4 hectare pavilion and car park replaced a small sports building and storage shed (0.04 hectares in size). The footprint of the new pavilion is significantly larger than that of the old building and shed, and involved the construction of an additional access road in the park. The expansion of the pavilion transformed freely accessible public open space into an enclosed area where access generally requires membership of a particular sports club or payment of hire fees.

Sporting groups using the park generally favoured the construction of the new building as it enhanced their sporting activities. There was, however, opposition to the redevelopment from other users who were concerned about the loss of amenity and reduced area available for non-organised recreation and informal activities at the park.



RECOMMENDATIONS

- R6** Prior to considering proposals that would result in the reduction of open space, government and local councils undertake a public process to assist them to determine the costs and benefits to the community of proposed reductions in public open space on public land and land owned by local councils.
- R7** The principle of no net loss of area be applied when public open space on public land and land owned by local councils is used to deliver non-park related services and facilities.
- R8** Public open space on public land and land owned by local councils be managed to maximise public access and to provide the widest range of user opportunities.

5.3.2 PROVIDING ADDITIONAL PUBLIC OPEN SPACE

Planning for the provision of new open space differs greatly across the investigation area. In the growth areas in Cardinia, Casey, Hume, Melton, Whittlesea and Wyndham, open space planning occurs as part of overall precinct structure planning for new residential communities and new employment areas. The plans must be approved and incorporated into local planning schemes before urban development can proceed.

The Growth Areas Authority's Precinct Structure Planning Guidelines set out a consistent approach for the preparation of precinct structure plans. Among other things, they provide guidance on the design of, and standards for, delivering well distributed, multi-functional and appropriately sized open space. For example, the standards for residential areas include providing local parks within 400 metres of at least 95 per cent of all dwellings, active open space within one kilometre of 95 per cent of all dwellings and linear parks and trails within one kilometre of 95 per cent of all dwellings.

Planning for the delivery of new open space in established suburbs can be more challenging. Land for open space may not be readily available where it is most needed or local councils may not have budget funds set aside for land purchases when suitable land comes on the market. High land prices can add to the difficulties.

Delivery of new open space in established suburbs is by necessity more opportunistic. For example, in addition to land purchases, some municipalities have delivered new open space through residential street closures and urban renewal projects. Despite the limited opportunities, at least one established municipality – the City of Boroondara – has recently established a ‘Strategic Acquisition Fund’ so it can purchase land for community services or additional open space when opportunities arise.

The remainder of this section discusses in detail two ways of delivering additional public open space– from the purchase or improvement of land with the open space contributions required when land is subdivided, and from the secondary use of public authority land.

Open space contributions

Section 6.9 of the discussion paper examined mechanisms used to provide new public open space, focusing on open space contributions under the *Subdivision Act 1988* and the Victoria Planning Provisions.

The Subdivision Act is the most common mechanism used by local councils to require open space contributions. The Act provides for an open space contribution not exceeding five per cent of the area of the land or site value from a subdivision applicant, where the contribution amount is not specified in the planning scheme. Open space contributions received as cash must be used to purchase new, or improve existing, open space.

Local councils can only require an open space contribution under the Subdivision Act if there is a requirement for more open space as a result of the subdivision. The contribution may be subject to challenge by the subdivision applicant if they consider that there is adequate open space nearby or that it is provided as part of the development.

Many submissions, including most from local councils, supported a review of the approaches used to determine open space contributions. Some local council submissions expressed the view that there is no strategic basis for setting contributions at a maximum of five per cent, and that the provisions should be reviewed to take account of the number of new residents in a subdivision, not only the area of the subdivision. One local council also commented that while cash contributions are based on the unimproved value of land, local councils are often required to purchase land for open space at a higher value based on the ‘best use’ value of the land (normally the residential or commercial value).

One submission suggested that if an open space contribution was not required as adjacent open space was declared to be adequate, then the developer should be required to make a cash contribution so that local councils could upgrade existing areas of public open space.

As outlined in section 6.9 of the discussion paper, the provisions of the Subdivision Act relating to open space contributions do not appear to be responsive to the changing needs of municipalities. These changing needs include a greater demand for open space due to increases in population and urban density. For example, open space contributions made under the Subdivision Act relate to the area under subdivision, not the increase in population resulting from the subdivision. As such, open space contributions may not be sufficient to meet the needs of additional residents in higher density developments.

VEAC considers that exemptions to paying a contribution and the contribution level specified in the Subdivision Act should be reviewed. This review should, among other things, consider whether there should be a minimum open space contribution under the Subdivision Act of five per cent. The introduction of a minimum contribution would enable local councils to be more responsive to local open space needs by providing additional open space or improving existing open space to cater for additional users.

The Victoria Planning Provisions are statewide provisions that form a template for municipalities’ planning schemes. Particular provisions of the Victoria Planning Provisions provide mechanisms for requiring public open space contributions and for the provision and design of open space. These provisions are discussed here briefly, and in more detail in section 6.9 of the discussion paper.

Clause 52.01 of the Victoria Planning Provisions enables local councils to require an open space contribution from subdivision applicants. Local councils can specify their own contribution rate (either area or percentage of site value) in the schedule to the clause, in place of the maximum five per cent specified in the Subdivision Act, provided this can be justified via a planning scheme amendment. This gives local councils greater flexibility as they can set an open space contribution rate that is tailored to local open space needs. This rate cannot be challenged at the Victorian Civil and Administrative Tribunal (VCAT).

Several local council submissions outlined the difficulties they experienced in preparing the strategic case required to justify the creation of a contribution schedule to clause 52.01. For example, submissions highlighted the high cost of researching the requirements, noting that the research

and amendment process must be repeated for each municipality. Other councils suggested that there should be a minimum open space contribution as part of the schedule to clause 52.01 in local planning schemes.

The Subdivision Act and clause 52.01 of Victoria Planning Provisions exempt some types of subdivisions from the open space contribution requirement. Examples of exemptions are two lot subdivisions that are unlikely to be further subdivided; subdivisions of residential, industrial and commercial buildings where each lot contains part of the building; and subdivisions of land where a contribution has been made for a previous subdivision. Many submissions argued that the provisions in the Act and clause 52.01 that exempt certain developments from the requirement to make an open space contribution should be removed or reviewed.

Some local council submissions highlighted concerns following a VCAT decision involving public open space requirements in clause 52.01 of the Maroondah Planning Scheme (*Fletcher v Maroondah City Council* [2006] VCAT 2205). In this case, the permit applicant proposed a two-stage subdivision of two existing residential lots into three lots. Maroondah City Council granted a permit for the subdivision subject to a condition that the owner of the land pay to the Council a sum equal to five per cent of the value of the land as a public open space contribution. In support of the condition, the Council relied on clause 52.01 of the planning scheme. The developer applied to VCAT for a review of the condition. The key issue was whether the subdivision was exempt from this requirement under clause 52.01 of the scheme, because it was unlikely that each lot would be further subdivided. VCAT decided that the subdivision was an exempt subdivision and it varied the permit to remove the condition requiring a public open space contribution. A subsequent decision by the Court of Appeal concluded that the specific tests for need, as set out in section 18 of the Subdivision Act, apply to a public open space requirement in a planning scheme. In effect, this decision means that a requirement for a public open space contribution fixed in clause 52.01 of the planning scheme may only be required where the council considers that there will be a need for more open space as a result of the proposed subdivision.

The Court of Appeal decision has created uncertainty for some local councils about whether they can require a mandatory public open space contribution based on clause 52.01 of the planning scheme. The decision affects local councils that have created schedules to clause 52.01 to specify the level of open space contribution (approximately half of local councils in the investigation area), as well as those intending to prepare schedules.

Clause 56.05-2 of the Victoria Planning Provisions contains comprehensive objectives for the provision of open space. This includes the only statutory set of standards for open space codified in the Victoria Planning Provisions. Box 5.2 provides more detail on the open space provision objectives listed in Clause 56.05-2. This clause also provides guidelines on the appropriate design of open space (dimension, quality, orientation etc) to meet its intended use, as well as guidelines on the integration of open space with other landscape elements such as waterways and foreshores.

Box 5.2

Open space standards in the Victoria Planning Provisions

Clause 56.05-2 states that there should be a network of neighbourhood open space that includes:

- ▶ local parks within 400 metres of 95 per cent of all dwellings; these should be generally one hectare in size where not designed to include active open space
- ▶ additional small local parks or public squares in activity centres and higher density residential areas
- ▶ active open space of at least eight hectares in area within one kilometre of 95 per cent of all dwellings
- ▶ linear parks and trails within one kilometre of 95 per cent of all dwellings.

The above standards cover a range of open space attributes including size, accessibility and distribution. Their comprehensive nature means that they are more able to be applied in greenfield locations, particularly in growth areas and some outer municipalities. However, they can be difficult to achieve in many established municipalities which have a relatively mature open space network established prior to the development of the Victoria Planning Provisions in 1996, and an existing low provision of open space and limited capacity to increase the area of open space. Under these circumstances, many municipalities tend to focus on maximising open space accessibility and quality. The absence of open space standards relevant to established municipalities was an important theme arising from submissions from middle and inner local councils.

The contribution schedule attached to clause 52.01 and the objectives and standards for neighbourhood open space in clause 56.05-2 are not compatible and do not operate together under the planning provisions. Because of this, local councils find it difficult to use the standards to develop a schedule to clause 52.01 and to deliver a neighbourhood open space network that is consistent with these standards.

RECOMMENDATION

- R9** Government review the open space contribution policy and provisions in the Victoria Planning Provisions and *Subdivision Act 1988* with the aim of assisting metropolitan local councils meet the challenges of population increase by maximising the contribution of open space through subdivision of land. This would include:
- a) reviewing the contribution level in the Subdivision Act to determine whether the minimum contribution should be set at five per cent
 - b) streamlining the process for creating a contribution schedule to clause 52.01 of the Victoria Planning Provisions
 - c) removing the uncertainties in the interpretation and use of the Subdivision Act and clause 52.01 of the Victoria Planning Provisions
 - d) reviewing the provisions in the Subdivision Act and clause 52.01 of the Victoria Planning Provisions that exempt some subdivisions from the requirement to make an open space contribution
 - e) considering whether the open space objectives in clause 56.05-2 of the Victoria Planning Provisions, which detail standards for neighbourhood open space, can be made to operate with the provisions in clause 52.01, which require people proposing to subdivide to make specified contributions to the local council.

Use of public authority land

Section 6.9 of the discussion paper includes an outline of the use of public authority land as public open space. Public authorities are required to work within a mandated charter, with use of their land for recreation a secondary consideration. For example, Melbourne Water's operating charter sets out its responsibilities, long-term aims and goals for the management of waterways, floodplains and regional drainage. Some Melbourne Water land, however, may also fulfil a significant community recreational function, such as boating and fishing. Local councils and other public authorities often enter into agreements with public authorities such as Melbourne Water, VicRoads and VicTrack for community use of their land. Shared use of public authority land is not always appropriate, but in many cases it provides additional open space for communities.

There are approximately 2,865 hectares of public authority land in the investigation area which have a secondary function as public open space. This includes larger areas such as retarding basins, as well as smaller areas such as pipe tracks, recreation trails and other linear corridors. These corridors can be particularly useful in providing linkages between existing larger areas of public open space.

A number of local council submissions commented that there are limited opportunities to increase the amount of public open space and that any opportunities will largely come from the shared use of public authority land. Several submissions provided successful examples of shared use of public authority land for recreation. Box 5.3 provides an example of land owned by a public authority, Southern Rural Water, which is used as public open space.

Box 5.3

Use of Melton Reservoir as public open space

The Melton Reservoir (also known as Exford Weir) is the main regulation storage for the Werribee Irrigation District and is located on the Werribee River approximately six kilometres south of Melton. The land is Southern Rural Water freehold land.

A visitor area at the southern end of the reservoir encourages a range of recreation uses with picnic facilities provided. While camping and horse riding are not permitted, on-leash dog walking is allowed. Swimming is permitted in some areas and boating is allowed in some areas of the reservoir (depending on the water storage levels).

These secondary uses are compatible with the primary water supply purpose, but may be changed by Southern Rural Water if the quality of water supply and the environment is adversely affected.



Other local councils, however, expressed frustration with the process of negotiating shared use agreements, describing it as complex and onerous. Several local council submissions also commented that ongoing management agreements between state government and local councils need to be streamlined to correctly allocate maintenance costs to relevant authorities.

These comments are supported by the Victorian Competition and Efficiency Commission's (VCEC) report *Getting it together: An inquiry into the sharing of government and community facilities*.⁵⁵ VCEC indicated that the lack of funding from stakeholders for ongoing maintenance and operation of a shared facility was often a barrier to success, and there often appeared to be a lack of understanding among partners about who was responsible for the maintenance and replacement of assets, and the ongoing costs.

The use of public authority land as public open space contributes to Melbourne's liveability as it provides additional opportunities for organised, non-organised and informal recreation, which in turn contribute to improved mental and physical health. Larger areas such as retarding basins can provide opportunities for group gatherings and socialising, and encouraging social cohesion. More natural areas can also aid in the conservation of native plants and animals and help mitigate the urban heat island effect in residential and commercial areas (see section 4.1).

It is important that the shared use of public land be considered as a complementary means of providing additional open space, rather than as an alternative to the acquisition of new open space. Some types of public authority land are also better suited to certain recreation activities than others. For example, retarding basins are generally considered suitable for non-organised recreation and informal activities, but not for sportsgrounds due to the likelihood of inundation and unevenness of the ground.

RECOMMENDATIONS

- R10** Government encourage multiple uses of public authority land where appropriate as one means of providing additional public open space in metropolitan Melbourne.
- R11** Government develop a standard framework for the shared management and use of public open space on public authority land that provides certainty of management and use for public authorities and open space managers.

5.3.3 FUTURE PLANNING FOR MELBOURNE'S PUBLIC OPEN SPACE NETWORK

Melbourne has a long history of open space planning that has continued to the present day. Notable open space plans include the Metropolitan Town Planning Commission's 1929 plan for existing and proposed open space, and the Melbourne and Metropolitan Board of Works' 1971 corridor wedge plan and 1988 Metropolitan Open Space Plan. In 2002, Parks Victoria developed *Linking People and Spaces*, a strategic plan for nature-based regional open space and trails.⁵⁶

Almost all local councils in the investigation area have prepared municipal open space strategies which provide planning for all types of open space (regional, district and local) on both Crown and local council land. However, there is no requirement for local councils to develop open space strategies, or to regularly update an existing strategy. As a result, some open space strategies are current while others were prepared as long ago as 1996 and may no longer be relevant.

Section 6.4 of the discussion paper sought community views on whether a new metropolitan-wide open space strategy should be developed for Melbourne. About one-third of submissions supported the development of a strategy, with a wide range of suggestions on its proposed structure and focus. Some submissions suggested that the strategy should provide a consistent approach to elements such as provision and use of public open space at a metropolitan-wide level. Others indicated that prescriptive provision requirements would not consider local needs, and could set unrealistic standards for local councils to acquire public open space (particularly in established areas).

A number of submissions indicated a preference for overarching guidelines rather than a prescriptive planning and design template for local council open space strategies. Others suggested that a metropolitan-wide strategy could provide a framework for the preparation of local open space strategies, but that it should allow considerable local input into these strategies.

Several submissions saw a metropolitan-wide strategy as an opportunity to develop a 'master plan' for public open space in metropolitan Melbourne. These submissions indicated that the strategy should focus on open space corridors and linkages across metropolitan Melbourne, with both recreation and nature conservation given equal importance. Submissions generally supported the regular maintenance and update of metropolitan-wide and local council strategies.

Metropolitan Melbourne's population is predicted to increase to between 5.1 million and 5.7 million people by 2031⁵⁴, which will increase competition for land for residential and industrial development, infrastructure and other community uses. It is also likely to lead to an increased intensity of use of existing public open space. Increased population is likely to have a greater impact in established municipalities where there is limited scope to create additional open space. To maintain Melbourne's current liveability, new public open space will need to be provided to maintain current standards as Melbourne's population increases. Public open space needs to be an important consideration when planning for Melbourne's future growth.

There is currently an uneven distribution of open space in metropolitan Melbourne, with established municipalities generally having less open space per capita than outer and growth municipalities. Although significant planning has been undertaken by the Growth Areas Authority and councils for new open space networks in the outer growth areas, there is no overall vision or strategic planning framework for open space across the whole of metropolitan Melbourne. There are no metropolitan-wide policies to address the challenges arising from Melbourne's increasing population, which is especially apparent in the existing urban area.

The development of a new metropolitan open space policy and strategy is considered necessary to respond to the challenges facing Melbourne's open space network. There are multiple policies dealing with open space, as well as multiple landowners and user requirements. A new metropolitan open space policy and strategy should consider the entire network, which is not covered in the individual agency and local council strategies. It is envisaged that this policy would be developed in consultation with the community and local councils, dovetailing with and providing an overarching framework for other metropolitan open space programs and strategies (such as regional strategies developed by Parks Victoria, local council open space strategies, and policy and directions specified in the planning scheme). The metropolitan-wide open space strategy could provide input into a broader metropolitan strategy for Melbourne.

While DPCD, DSE and Parks Victoria have responsibility for particular aspects of open space policy and strategy, no single agency currently has responsibility, or resources, for an overarching metropolitan open space policy and planning function.

Further, in order to plan for Melbourne's public open space, it is necessary to have information on what currently exists. VEAC found that this information did not exist in one location and had to create its own inventory for this investigation. VEAC does not have a role to maintain this inventory following the completion of this investigation.

RECOMMENDATIONS

R12 Government prepare a metropolitan open space policy and strategy that provides a long-term plan for public open space in metropolitan Melbourne. Such a document:

- (a) encompass public open space on both Crown and public authority land (public land) and local council land in metropolitan Melbourne
- (b) provide strategic actions to address key issues relating to the provision and protection of public open space in metropolitan Melbourne, in particular to respond to Melbourne's expected population increase. These issues could include, but should not be not limited to:
 - (i) addressing the uneven distribution of open space across metropolitan Melbourne
 - (ii) developing appropriate standards for the distribution and accessibility of public open space in established municipalities
 - (iii) considering approaches and mechanisms for creating new open space, including the use of public authority land, and for meeting an anticipated increase in intensity of use of existing open space, particularly in established municipalities
 - (iv) developing guidelines for providing opportunities for different open space uses across metropolitan Melbourne.

R13 Government require metropolitan local councils to prepare municipal open space strategies or update their existing open space strategies in accordance with the framework established by the metropolitan open space strategy. Municipal open space strategies should continue to reflect the local on-ground knowledge and expertise of local council open space planners.

R14 The metropolitan open space strategy and municipal open space strategies be regularly updated; at least every ten years.

R15 Government assign responsibility and allocate resources for:

- (a) maintaining the public open space inventory and making available the information it contains; and
- (b) developing and implementing a metropolitan open space policy and strategy.

6 VALUES AND FUTURE USES OF 'PUBLIC LAND NOT COMMITTED TO A SPECIFIC USE'

Term of reference (b) for this investigation requires VEAC to assess the values of Crown land and public authority land for areas not committed to a specific use, and report on appropriate future uses relevant to Melbourne's liveability and natural values.

Chapter 9 of the discussion paper defined 'public land not committed to a specific use' and provided a detailed discussion of the values and scope of this land. It also outlined the policies and processes for determining its appropriate future uses, including those uses relevant to Melbourne's liveability and natural values. This chapter of the final report summarises some of this material and provides some further discussion of the issues.

6.1 Surplus public land

In this report VEAC defines 'Crown land and public authority land not committed to a specific use' as Crown land and freehold land owned by Victorian government departments and other public authorities (i.e. public land):

- a) for which there is no current or planned use;
- b) that has a current use that will cease in the foreseeable future; or
- c) that has no current use, but may be required in the long-term future.

In the discussion paper, the land described above was equated to surplus public land. It was noted that public land in categories a) and b) is frequently considered by public authorities to be surplus land that can then be reallocated to another use, leased or sold. It was also noted that land in category c) may also be considered to be surplus by public authorities because of the difficulties involved in projecting long-term demographic changes and the subsequent future demand for land for public purposes. School sites were given as an example of land that may become surplus as local communities age or change, but could conceivably be needed in the future if young families were to return to the locality.

Since the publication of the discussion paper, VEAC has come to the conclusion that while land in category c) is not committed to a specific current or future use, it should not

be described as surplus public land. Some of this public land may be retained as part of contingency plans for meeting longer term community needs.

An understanding of the values of surplus public land in general (rather than of particular sites) was provided in the discussion paper by considering its value to its owners and/or managers and its current and future users—public authorities and the Melbourne community respectively.

For public authorities, the value of land that is surplus to their current and future requirements tends to be its financial value to be realised on sale. A further financial benefit realised on sale is reduced management costs.

In contrast, the Melbourne community appears to value surplus public land in terms of its alternative community uses. Consultation during the course of this investigation revealed a commonly held perception that all or most surplus land is suitable for alternative public uses. Some people held this view to the extent that they objected to the use of the term 'surplus public land'. Many people considered that all land should be retained to meet current and future needs, particularly given Melbourne's projected population growth and increasing urban density. An example of how one community group values surplus public land is provided below.

Often some land is considered surplus to requirements – a narrow lane here, a small path by a train line there, a path through a small park etc. Cyclists rely heavily on small areas or strips of land to provide off road permeability. Land is rarely surplus to requirements.⁵⁷

It is difficult to determine the extent of land that is surplus to public authorities' requirements. There is no comprehensive register or list of surplus public land. Some surplus public land sites can be identified from the Government Land Monitor's* sales bulletin board. However, listing land on the bulletin board is not mandatory and sites are generally only listed for 30 days.

VEAC has categorised public land within the investigation area according to its primary purpose and range of uses (see chapter 7). At the time of finalising the public land database for this investigation, approximately 1,313 hectares (or 13.13 square kilometres) of public land was uncategorised—indicating that it has no clear current or future use as public land. While some of

* The Government Land Monitor operates within the Department of Planning and Community Development and is responsible for providing government with an assurance of accountability and integrity in public land transactions.

this uncategorised public land may be surplus to the requirements of the relevant public land owner, some land may have future uses or values identified through more detailed assessment processes or may be held as contingencies for meeting future needs.

Given that there is no list of surplus public land, VEAC gained some further understanding of the scope and significance of this land from examining the land transactions of four of the largest public authority land owners and managers in the investigation area—Melbourne Water, VicRoads, the Department of Education and Early Childhood Development and VicTrack.

In total, approximately 301 hectares of public land were sold and a further 183 hectares were transferred in the three year period from 2006–09. This indicates that in total about 484 hectares (or 4.84 square kilometres) of

public land were considered surplus by these four public land managers during this period. In comparison, a total of more than 700 hectares (or seven square kilometres) of land were acquired by these public authorities during the same period.

There was, however, great variation in the land transactions of the four public authorities, as is shown in table 6.1. For example, during this three year period, Melbourne Water sold and transferred more than 270 hectares of public land and acquired about 156 hectares, while VicTrack sold and transferred about 11 hectares and acquired about 18 hectares. The size of the blocks sold or transferred also varied greatly from approximately 0.01 hectares to more than 90 hectares. The majority of land disposals by VicTrack, VicRoads and Melbourne Water were less than one hectare. For further information on these transactions see section 9.3 of the discussion paper.

Table 6.1
Land disposals and acquisitions in the investigation area by four public authorities

FINANCIAL YEAR	PUBLIC AUTHORITY	AREA SOLD (HA)	AREA TRANSFERRED AT NO COST (HA)	AREA ACQUIRED (HA)
2006-07	Melbourne Water	50.88	21.91	52.27
	DEECD	11.65	nil	58.28
	VicRoads	16.73	nil	127.80
	VicTrack	1.20	5.82	2.26
Total		80.47	27.73	240.61
2007-08	Melbourne Water	40.39	93.96	42.09
	DEECD	1.02	nil	52.54
	VicRoads	36.74	nil	255.42
	VicTrack	2.27	nil	15.82
Total		80.42	93.96	365.87
2008-09	Melbourne Water	25.17	39.85	61.70
	DEECD	2.12	nil	34.95
	VicRoads	111.61	20.58	29.73
	VicTrack	1.72	0.46	nil
Total		140.62	60.89	126.38
Grand total		301.50	182.58	732.86

Note: The data provided by the public authorities varied. Some may have combined land transfers and relinquished Crown land with land sales. Some may have combined land acquired through transfer with land purchases in land acquisitions.

6.2 Using surplus public land to maintain and enhance Melbourne's liveability and natural values

It is not essential for surplus public land to be retained in government ownership for it to contribute to Melbourne's liveability and natural values. Affordable housing and aged care, for example, could be provided on surplus public land that is sold to local councils or private landholders such as registered housing agencies. Land with natural and heritage values could be protected by covenants or other legal instruments prior to being sold.

Further, some land may be unsuitable for alternative public uses or may not be in the right location or be of sufficient size to meet community needs. In these instances, it is more appropriate for public authorities to sell the land and contribute the funds derived from land sales to the delivery of the community services outlined in their charters (e.g. health, education, transport).

There are, however, advantages to retaining land that is suitable for alternative public uses in government ownership. As discussed in chapter 5 of the discussion paper, public land is often more accessible than private land and its contributions to the community are often more secure than those provided on private land. As a consequence, the public may have more confidence in equitable and ongoing liveability outcomes resulting from services provided on public land than on private land. Similar advantages may also be gained from land owned by local councils.

The use of surplus public land for open space and biodiversity conservation were two of the most common themes raised in community consultations throughout this investigation. These themes continued in the submissions responding to the discussion paper. A number of submissions considered that all surplus land with biodiversity values should be retained. For example, one submission stated that the protection and enhancement of biodiversity should be a priority use of surplus public land "given the extreme loss of natural habitat in settled areas of metropolitan Melbourne".⁵⁸ The use of surplus public land for biolinks was also raised during VEAC's consultation with the public and local councils.

Numerous other submissions considered that public land with current or potential open space values should be retained to provide for Melbourne's growing population. A number of local council submissions commented on the importance of public open space to liveability and the limited opportunities to increase the amount of open space. These local councils considered that any opportunities will largely come from surplus public authority land or from the shared use of public authority land.

Other submissions stated that surplus public land should be used for a range of alternative public uses, such as social and affordable housing, community gardens, urban agriculture and respite facilities.

Section 9.7 of the discussion paper explored the opportunities for surplus public land in the investigation area to contribute to public open space and biodiversity conservation. It outlined a broad assessment undertaken by VEAC of surplus public land sites to identify potential open space in municipalities with less than the median level of open space per capita. As reported, VEAC found only six potential sites totalling 13.6 hectares (or 0.14 square kilometres), with one site at Edgars Creek accounting for 10.5 hectares. This site was in the process of becoming permanent parkland.

The discussion paper, however, identified and made draft recommendations in relation to two small areas of surplus public land with high biodiversity values. Chapter 7 of this final report includes final recommendations for these areas to be added to the Kinglake National Park.

VEAC reached two conclusions as a result of these exercises. The first was that, while there may be limited opportunities for surplus public land to contribute to open space and biodiversity conservation, these opportunities need to be taken when they arise. Box 6.1 below provides a further example of taking such an opportunity.

The second conclusion was that VEAC should focus primarily on the processes for identifying and disposing of surplus public land, rather than on the potential future uses of individual surplus public land sites.

Box 6.1

Creating open space from surplus public land

The Caulfield Reservoir in Booran Road, Caulfield was the first mass concrete reservoir constructed as part of Melbourne's water supply. It was owned by South East Water until 2010, but had not been used for water storage purposes since the late 1970s.

Glen Eira City Council first approached the Victorian Government about using the 1.64 hectare site for recreation purposes in 2007. The land was transferred to the Crown, with the reservoir intact, and reserved for 'public recreation' purposes in 2010. The City Council was appointed as the committee of management in late 2010 on the understanding that it would not impose any financial obligations on the Department of Sustainability and Environment for decontamination, risk or infrastructure related issues. Glen Eira City Council is now investigating whether to remove the reservoir's mass concrete structures and associated soil abutments or integrate these into its design for a new recreation area.



Chapter 9 of the discussion paper explored and sought comment from the community and other stakeholders on several ways to enhance the contribution of surplus public land to Melbourne's liveability. In particular, comments were sought on listing all surplus public land on a central register, retaining Crown land that is suitable for another public use and making it available at no cost to a new manager, selling public authority freehold land at a price that reflects its intended public use, and clarifying responsibilities for, and resourcing of, the management of Crown land. These comments were taken into consideration by VEAC when developing its recommendations in the following sections of this final report.

6.3 Assessing surplus public land for alternative public uses

The nature of the assessment process is one of the key factors in determining if and how surplus public land can contribute to Melbourne's liveability. The processes differ for Crown land and public authority land.

6.3.1 ASSESSING CROWN LAND

Crown land that is no longer required by its current manager is assessed by the Department of Sustainability and Environment (DSE) to determine its 'public land values'. This assessment is undertaken against criteria grouped into six main categories:

- ▶ Environment/Conservation;
- ▶ Cultural/Historical;
- ▶ Social/Community/Aboriginal;
- ▶ Recreation/Tourism;
- ▶ Resource Production/Utilisation; and
- ▶ Strategic/Other, including government policies.⁵⁹

Land assessed as having important public land values and potential alternative uses is retained in Crown ownership for reallocation to another public use. The assessment of alternative uses often involves consultation with potential land managers. In these cases the land is generally not sold, but is assigned at no cost to another public authority manager (such as Parks Victoria or Melbourne Water) or a committee of management (often a local council or community body) or representatives of the local community. The assignment of Crown land often relies upon DSE staff knowing the requirements of public authorities, local councils and the community. There is no whole of government process for assessing whether available Crown land can contribute to the strategic priorities of government or of the public authorities, or how this land might meet the needs of local communities.

Where Crown land is assessed as having public land values that are not significant, it may be sold subject to covenants or other planning instruments being in place to protect these public land values.

6.3.2 ASSESSING PUBLIC AUTHORITY LAND

Public authority land that is not subject to a specific use is assessed by the public authority for its suitability for another use by that public authority. If it is no longer required, the public authority is not required to assess whether the land is suitable for an alternative public purpose, nor is it required to retain in public ownership land with public land values (such as remnant bushland or a recreation area) unless the land is subject to a government-accepted Land Conservation Council recommendation. Land having significant values, such as biodiversity or heritage values, may be sold subject to covenants or other planning instruments being in place to protect these public land values.

The government's *Policy and instructions for the purchase, compulsory acquisition and sale of land*⁶⁰ requires public authorities to offer land that is to be sold on a first right of refusal basis to other public authorities for purchase at market value. There is no standard process for offering land to other public authorities—some public authorities may list the land on the Government Land Monitor's sales bulletin and others may consult more extensively. Land may subsequently be offered to the relevant local council at market value as determined by the Valuer-General.

At times, surplus public authority land is assessed for alternative private uses prior to the sales process. For example, VicUrban, the Government's land development agency, is responsible for developing and facilitating sustainable, affordable housing in Melbourne and regional Victoria. VicUrban and Melbourne Water are collaborating on the development of Melbourne Water land that is surplus to its requirements. The 150 hectare former Dandenong South Treatment Plant site is to be developed for residential and industrial uses and the Riverwalk residential development is to be created on former Western Treatment Plant land in Werribee. As the land is developed, it will be sold into private ownership.⁶¹

6.3.3 WHOLE OF GOVERNMENT ASSESSMENT PROCESS

The government's election commitments outline its intention to identify and/or assess public land for a range of purposes. For example, the *Planning policy* commits to a number of measures including auditing government-owned land within the Urban Growth Boundary to identify sites for future development, assessing public parkland and open space requirements across Melbourne and increasing the transparency of public land sales.³

The implementation of these commitments should include consideration of surplus public land. Through this process, surplus public land could be identified for future development and ultimately sale to meet the housing and other needs of a growing population. On the other hand, it could also be identified as land that should be retained to meet increasing open space and other community needs or because of its significance.

The assessment of surplus public land was frequently raised in community and local council submissions. Many submissions considered that all surplus public land, i.e. both Crown and public authority land, should be assessed for alternative public uses prior to being listed for sale. Many considered that assessment should take into account current and future community needs.

Some submissions suggested that there should be a co-ordinated whole of government assessment process. Others thought that assessments should be undertaken in partnership with relevant local councils or that this process should be transparent with the potential for public input.

DSE assesses the values of potentially surplus Crown land against a broad range of criteria including environmental, community and recreational values. VEAC considers that a similar assessment should also apply to public authority land and that a whole of government approach would facilitate a broader assessment of the values and potential future uses of all public land. It would also enable government to identify and set aside land in line with its strategic plans and priorities for Melbourne.

6.3.4 RETAINING PUBLIC LAND

Providing advice on an appropriate assessment process and the full range of assessment criteria is beyond the scope of VEAC's investigation. However, it is apparent to VEAC that Melbourne's increasing urban expansion is continuing to deplete and fragment its remaining biodiversity and its growing population is increasing demand for, and the pressures on, its open spaces.

Chapters 3 and 5 discuss how reserving Crown land with remnant native vegetation or with open space values assists in the protection of these values. Consistent with this approach, VEAC considers that surplus Crown and public authority land should be retained where it can contribute to enhancing the protection of biodiversity or meeting priority open space needs.

Water frontages contribute to ecological connectivity (for example, by providing habitat links for wildlife) and provide recreation corridors (for example, walking and cycling trials along river frontages and coastal reserves). The frontages to rivers and streams are also important for drainage and maintaining water quality.

The importance of water frontages is reflected in DSE's guidelines for the assessment of Crown land. These guidelines state that some categories of Crown land, including river and lake frontages, foreshore reserves and land abutting them, are almost automatically assessed as being of national or state significance.⁵⁹ Land in these categories is generally retained as Crown land.

Across Victoria, most coastal frontages and many river and lake frontages are reserved and protected from sale. Water frontages reserves—the 20 to 60 metre strips of Crown land parallel to the coast and many inland waters—were mostly created by the 1870s and 1880s as the result of deliberate government policy decisions to retain them in public ownership. In 1873, most Crown land along the shores of Port Phillip Bay was permanently reserved. In 1881, an Order in Council reserved Crown land for one hundred and fifty links (30 metres) from either bank along 280 major streams and one chain (20 metres) from the bank for some tributaries. Water frontages were considered critical for ensuring community access to fresh water for domestic and stock watering purposes and for shipping, fishing, and recreation.⁶²

Ninety-four per cent (or approximately 670 hectares) of the coastal foreshore in the investigation area is reserved Crown land. Of the 3,200 hectares of public land in the investigation area categorised by VEAC as stream frontage, approximately 1,900 hectares is Crown land and approximately 1,300 hectares is freehold land owned by Melbourne Water. In the unlikely event that any areas of existing public land water frontages are considered surplus to requirements by public authorities, VEAC considers that they should be retained in public ownership.

RECOMMENDATIONS

R16 A formal and transparent whole of government process and criteria be developed for assessing the potential for surplus public land to meet alternative public uses, and involve consultation with relevant local councils where appropriate.

R17 Crown land and public authority freehold land that is not required by its land manager for a current or future use be:

- (a) assessed through the process recommended in R16 against a range of criteria including whether the land:
 - (i) would contribute to the implementation of government priorities identified in its future metropolitan strategy for Melbourne
 - (ii) meets priority open space needs identified in the metropolitan open space strategy recommended by VEAC (see R12)
 - (iii) contributes to ecological connectivity or recreational corridors
 - (iv) forms part of a water frontage; and
- (b) retained as public land where these and other specified public land values are identified.

R 18 Government allocate resources for the assessment of surplus public land for alternative public uses.

6.4 Retaining Crown land that is suitable for other public uses

There is a long history of Crown land being retained for public purposes and assigned to another manager, usually a public authority, local council or local committee of management, at no cost. While DSE assesses the values of surplus Crown land to determine whether it should be retained, there are also pressures to sell Crown land with public land values.

As outlined in the discussion paper, the Department of Treasury and Finance (DTF) has annual revenue targets for selling surplus Crown land and some public authority land. These sales realised \$600 million between 1998-99 and 2008-09. The targets for 2009-10 and for 2010-11 were \$40 million and \$50 million respectively.^{63,64}

These targets are one of the main drivers of Crown land sales. They should only apply to Crown land with no public land values or values that can be adequately protected through covenants or other instruments. There is, however, the potential for these targets to encourage the sale of land with public land values, rather than its allocation to another public land manager at no cost. There is also the potential for government policy of selling land at market value⁵⁹ to be interpreted as a requirement to sell Crown land, making it extremely difficult to reassign land to another public land manager use at no cost.

VEAC's consultations with local councils and the community found strong support for the retention of Crown land that is no longer required for its current use. Many considered that such land should be allocated to public land managers at no cost, by either assigning the land (for example to a committee of management) or by transferring ownership. The high cost of land was mentioned by a number of local councils as a key deterrent to purchasing both Crown land and public authority land. The main concern appeared to be lost opportunities to gain land for community purposes, as is outlined in the example below.

*Because of high land values, the cost of purchasing land is often prohibitive for local councils and...land is regularly sold and transferred out of public ownership. As a result the opportunity to establish a legitimate alternative public use on public land, that directly addresses the needs of the surrounding community, is lost.*⁶⁵

VEAC supports the retention of surplus Crown land with public land values and its assignment to a new public land manager at no cost. This land can provide opportunities for public open space, community facilities and other community purposes that would not otherwise arise.

RECOMMENDATION

R19 Crown land assessed as suitable for another public use be retained by the Crown and assigned to a new public land manager for this public purpose.

Another pressure on the assessment and allocation of Crown land is resourcing for rehabilitation of, or initial improvements to, Crown land and its ongoing management. Public land managers may be unwilling to take on management of additional land due to the costs of making it safe or suitable for certain uses, and ultimately the land could be sold. Although DSE is the default manager of Crown land, it is often not in the position to take on the direct management of surplus Crown land assessed as having significant public land values.

Many submissions commented on funding for Crown land management. Many focused on particular concerns, such as weed control, reliance of volunteers, and the costs of decontamination or removal of infrastructure from land in order to make it fit for purpose. A number of submissions stated that surplus Crown land that could be used by local communities should be assigned or transferred to local councils with management funds.

Two different perspectives on local council management of Crown land became apparent to VEAC during the course of this investigation. The first perspective is that land assigned to local councils as committees of management is a cost saving for these councils because they have not been required to purchase land. The second perspective is that such land is a liability to local councils because of the associated management and other costs. These divergent views possibly result from the different management requirements of individual sites, the condition of the land and any associated infrastructure, and the visitor catchment the site services (e.g. regional or local).

As a result, local councils are sometimes willing to take on the land and the associated costs because of the benefits for their local communities (as outlined in relation to the Caulfield Reservoir in box 6.1). At other times, local councils appear unwilling to take on the land because of the costs of making the land safe or fit for purpose. An example of this situation is provided in box 6.2.

This is a complex issue and, as indicated above, depends on the particular situation. In general though, VEAC considers that Crown land assigned to local councils under committee of management arrangements for use by their communities, generally results in a financial saving equivalent to the purchase price of the land.

Box 6.2

Unresolved management of Crown land with local values

The outer circle rail trail between Whitehorse Road and Canterbury Road, Camberwell is reserved Crown land. This section of the trail is about 1.3 kilometres in length and is highly valued by the local community for recreation and public open space. It is currently managed by DSE, which considers that it should be assigned to the City of Boroondara because of its local open space and recreational values. The former railway cuttings are steep and the vegetation along the corridor is in poor condition. There has been a number of complaints from adjoining landowners regarding the lack of maintenance. Some safety issues need to be dealt with and revegetation, regular slashing and improved access to the walking trail is required. Future management of the trail is unresolved between DSE and the City of Boroondara.

6.5 Selling public land that is suitable for another public use

In section 6.3, VEAC recommended that public land that is no longer identified for a current or future use be assessed for its potential to meet alternative public uses (see R16). If adopted by government, it is likely that this recommendation would preclude the listing for sale of some public land that is suitable for alternative community uses. However, some public land will continue to be sold outside of this process.

The following sections discuss two ways to increase the opportunities for public land that is to be sold to contribute to Melbourne's liveability and natural values.

6.5.1 LISTING SURPLUS PUBLIC LAND ON A CENTRAL SALES REGISTER

As stated previously, there is currently no comprehensive listing of public land that is for sale. Public authorities may list freehold land they wish to sell on the Government Land Monitor's sales bulletin board and they may also advise relevant local councils of impending sales. DTF lists Crown land that is to be sold on the bulletin board.

The discussion paper sought comment on the listing of all impending public land sales on the sales bulletin board for 60 days and until the land is sold. There was strong community and local council support for listing on an accessible register such as the sales bulletin board. Local councils in particular supported listing, along with prior notification to the relevant council, in order to identify land for community uses, such as public open space. As one stated:

Surplus public land on the Government Land Monitor's sales bulletin board should not be considered as a saleable land inventory, but as an opportunity for enhancing liveability in metropolitan Melbourne. This will require a change in the current concept of how surplus public land is viewed by public authorities and the Victorian Government, that is, rather than being considered as a means of revenue raising it should be considered as essentially protected land with a value that is more than financial.⁶⁶

It was suggested by some that the register should be accessible to the public to increase the transparency of the public land sales process.

Some submissions did not agree with listing land on a sales bulletin board because they did not agree that public land should be sold. They considered that public land should be retained in the long term to respond to new and emerging issues or transferred at no cost to another public land manager, such as local councils.

On the other hand, one public authority questioned the practicality of listing land that would be of value only to the adjoining landholder due to its location and/or size.

The mandatory listing on the sales bulletin board or similar register of surplus public land would provide a single listing of public land that is for sale. Making the listing available at some point to the public would also increase the transparency of public land sales.

While a listing period of 60 days was not considered to be sufficient by many local councils, one public authority commented that extending the listing period increases land management costs. VEAC considers that the current voluntary 30 day listing period may be inadequate; however, it acknowledges the potential costs for public authorities of a mandatory listing period in excess of 60 days.

RECOMMENDATION

R20 Impending sales of Crown land and public authority freehold land be listed on a central register, such as the Government Land Monitor's sales bulletin board. Listings:

- (a) be for a minimum of 60 days
- (b) continue until the land is sold; and
- (c) be accessible to all public authorities, local councils and the public.

6.5.2 PRICING PUBLIC AUTHORITY LAND

Public authorities generally acquire public land by purchasing it at highest market value or, occasionally, by being assigned Crown land. The Mornington Peninsula Freeway project is an example of where land has been acquired through purchase of freehold land and assignment of Crown land.

Public authorities generally sell freehold land that is no longer required for the delivery of their services. They do this to deliver their services in a cost effective manner and, if required, return a dividend to the State. Occasionally, they surrender freehold land to the Crown for other community uses. For example, Melbourne Water surrendered land at Mount Lofty for addition to the Warrandyte State Park to implement a government approved recommendation from the Land Conservation Council's 1994 Melbourne Area District 2 Review.⁶⁷

In addition to the requirement to operate efficient and effective organisations, public authorities must also comply with the government's policy for selling land. The *Policy and instructions for the purchase, compulsory acquisition and sale of land*⁶⁹ requires the most appropriate zoning for the land to be established and put in place to ensure the highest possible return. Land sold to other public authorities is to be priced at the market value assessed by the Valuer-General. Land sold to local councils is to be priced at not less than the market value assessed by the Valuer-General. The Valuer-General makes the assessment of market value based on planning advice about the appropriate zoning that takes into account how the land can be used and developed.

The discussion paper sought community views on the pricing of public authority land that is to be used for other public purposes. There was widespread support from community and local council stakeholders for zoning, and therefore valuing, this land according to its intended community use. Some submissions, however, considered that public authority land should be made available to local councils at no cost because it is already in public ownership and consequently 'the community should not be required to pay for a second time' through their local council rates. Some local council submissions argued that the purchase price should take into consideration any past maintenance or other expenditure made by the local council on the land.

In contrast, one public authority commented that selling public land at less than the highest market value would increase costs for public authority projects and cross-subsidise the services or projects delivered by the agency receiving the land. A small number of public authorities

also commented that they would be disadvantaged by selling land at a lesser price as they pay highest market value for any land they purchase from local councils.

VEAC is aware that many members of the community do not differentiate between the ownership of public land and local council land and consider them both to be community property. VEAC also recognises that public authorities, and for that matter local councils, have services and capital projects to deliver within defined budgets. While the transfer of land at nil or a reduced cost provides benefit to the receiving agency, it has costs for the public authority vendor. These costs, if significant, could have implications for their delivery of services and projects.

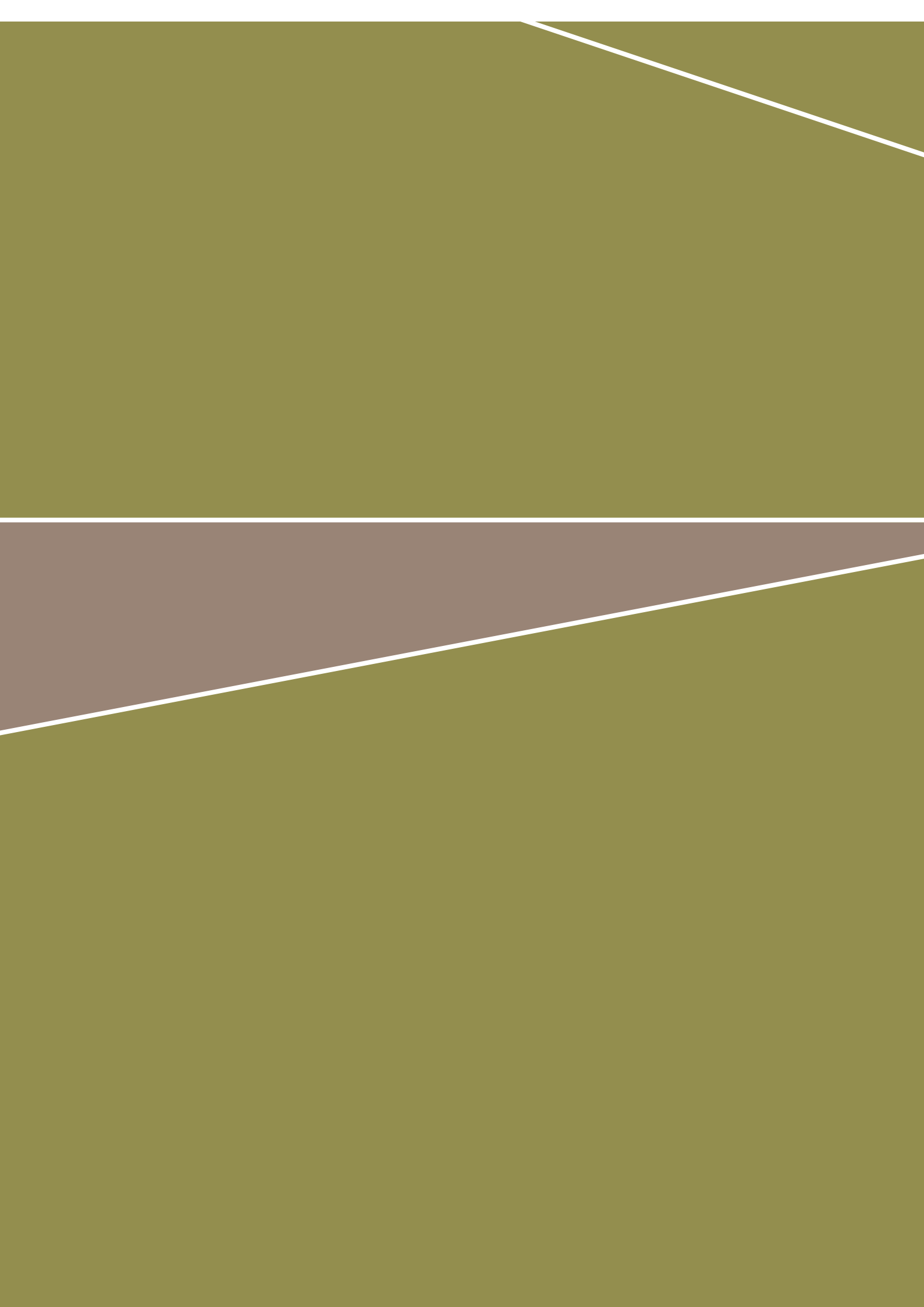
However, there may be some situations where the assessment of surplus public authority freehold land indicates that it cannot contribute to government programs, but that significant community benefits can be achieved if it is owned and managed by a local council. In these cases there may be benefits in supporting the local council to purchase the land by pricing it according to its intended use. It is envisaged that government would develop criteria for determining which community uses of land would be supported in this way. In such situations, the conditions of any sale at a reduced market value could be that the land must be used for that particular purpose and that the government must agree to the use of the land for a different purpose and be compensated if the land is later sold at a higher market value.

The practice of valuing and selling land for a particular use already exists in relation to Crown land. Occasionally DTF negotiates the sale of Crown land with a restriction on its title which runs with the land. In these circumstances, the valuation reflects the current market value of the land taking into account the restriction on its uses. Usually, this valuation is less than the unrestricted current market value. In the event that the new land owner wishes to subsequently on-sell the property without the restriction, it must first come back to the state and negotiate its removal. A condition of DTF's agreement to the removal of the restriction would be that the land owner must pay to the State the difference between the restricted current market value and unrestricted current market value of the land, to reflect the increased value of the property due to the removal of the restriction.

Sales of Crown land on a restricted basis are limited, with the vast majority being conducted on the basis of an unrestricted Crown Grant to the purchaser.

RECOMMENDATION

- R21** The *Policy and instructions for the purchase, compulsory acquisition and sale of land* be amended so that public authority freehold land can be sold at a market value that reflects its intended public use where it is assessed that significant community benefits will be achieved.
- R22** Criteria and conditions be developed for the sale of public authority land at a reduced market value.





PART C

RECOMMENDATIONS FOR PUBLIC LAND USE IN METROPOLITAN MELBOURNE

7 PUBLIC LAND IN METROPOLITAN MELBOURNE

Term of reference (a) for the investigation directs VEAC to systematically identify and assess the uses, resources, condition, values and management of public land in metropolitan Melbourne. Public land in the investigation area is described in terms of its extent, uses, resources, values and management in chapter 4 of the discussion paper.

VEAC and its predecessors have developed an evolving set of public land use categories to describe the primary purposes for the use of public land and the range of permitted activities. These categories provide a useful framework for consistent and transparent allocation of public land to specific broad uses. However, applying the established public land use categories to public land in the highly urbanised metropolitan setting has required some reconsideration of the categories, and an additional 'metropolitan park' category has been established (see page 79). Other unique characteristics of the Metropolitan Melbourne investigation area include the relatively greater importance of sub-categories of community use areas such as 'parklands and gardens', and the relatively higher significance of any remaining areas of public land with environmental values in the established residential areas.

Chapter 10 of the discussion paper provided, and sought comment on, draft recommendations relating to the use of public land in the investigation area. These draft recommendations were:

- general recommendations for some categories to confirm existing public land uses across the investigation area and to provide a framework for the management of specific land for which VEAC is recommending changes
- specific recommendations for changes to the land use categories for a small number of sites to enhance the protection of biodiversity, and for the continued management by Melbourne Water of freehold land with high biodiversity values.

This chapter of the final report provides a brief overview of public land in the different categories within the investigation area and public land use recommendations.

There are approximately 89,074 hectares or 890.7 square kilometres of public land in the investigation area. This area has been calculated from detailed GIS mapping. In addition to this area, VEAC estimates that there is a further 73,000 hectares of 'unparcellised' Crown road reserves (historically these Government roads were not ascribed allotments or parcels).

Map A shows public land in the investigation area according to its public land use category. Table 7.1 shows the area, in hectares, of public land within each of the public land use categories. The ownership of this public land is shown on map B and in table 7.2. Maps A and B can be found in the back pocket of this report.

Also included below is a discussion of, and a recommendation concerning, the identification of Aboriginal cultural heritage on public land. This discussion and recommendation apply to all categories of public land.

7.1 : Awareness of Aboriginal cultural heritage values

An issue raised during community consultation, particularly in consultation with Indigenous communities, is the importance of Aboriginal cultural heritage sites and places on public land, and the identification and ongoing management of these sites. Certain management activities – for example, those associated with planned burning or development of recreation trails – that may impact on Aboriginal heritage sites such as scarred trees or artefact scatters need to be identified and managed appropriately.

It is important that public land managers have access to appropriate information so that they can identify potentially damaging actions. In the absence of clear identification of existing sites and advice on methodologies utilised to carry out works, many sites will be lost and works may be inadvertently undertaken in non-compliance with existing legislation.

Some public land managers, such as Melbourne Water and Parks Victoria, employ Cultural Heritage Advisors to identify any heritage values at risk. DSE employs Cultural Heritage Values Officers to aid in identifying Aboriginal heritage values that may be impacted by activities associated with planned burning or other works programs. The Cultural Heritage Advisors draw upon information from the Victorian Aboriginal Heritage Register, maintained by Aboriginal Affairs Victoria. If required, Cultural Heritage Advisors, with the Native Title holders, Registered Aboriginal Parties or Traditional Owners of the land, undertake heritage surveys to assess the sites and record any new ones before works are undertaken.

A further point raised in consultation with both the community and public land managers is that previously unrecorded Aboriginal cultural heritage sites are often revealed following bushfires on public land. There was some community concern that these sites would not be identified and added to the records maintained by Aboriginal Affairs Victoria. Some public land managers suggested that, where this is not already occurring, operational staff should undergo cultural heritage training so that they are more aware of the existence of these sites.

RECOMMENDATION

R23 Awareness of Aboriginal cultural heritage values

Public land managers undergo, or continue to undergo, cultural heritage training to increase or maintain their awareness of the existence of Aboriginal cultural heritage values on public land.



Above: Woodlands Historic Park contains one of the greatest concentrations of scarred trees in the investigation area.

Table 7.1

Current extent of public land in the investigation area

CATEGORY	AREA (ha)
National parks	10,537
State parks	14,402
Marine national parks and marine sanctuaries	94
Nature conservation reserves	3,567
Trust for Nature protected areas	112
Regional parks	3,872
Metropolitan parks	5,012
State forests	4,030
Natural features reserves	4,858
<i>Natural features reserves (general)</i>	8
<i>Natural and scenic features</i>	61
<i>Bushland areas</i>	896
<i>Streamside areas</i>	124
<i>Stream frontages (including stream beds and banks)</i>	3,189
<i>Wildlife areas and wetlands</i>	580
Coastal reserves	671
Coastal waters reserve	478
Water production areas	8,343
Historic and cultural features reserves	57
Community use areas	7,396
<i>Recreation areas</i>	2,248
<i>Parklands and gardens</i>	1,844
<i>Recreation trails</i>	115
<i>Rifle and shooting ranges</i>	4
<i>Reservoir parks</i>	378
<i>Buildings in public use</i>	2,807
Services and utility areas	24,332
<i>Transport—Roads</i>	6,239
<i>Transport—Railway</i>	2,914
<i>Hospitals, public offices, justice</i>	847
<i>Cemeteries</i>	1,072
<i>Water and sewerage services</i>	11,940
<i>Various other services and utilities areas</i>	1,320
Uncategorised public land	1,313
Total extent of public land in the investigation area excluding estimated Crown road reserves	89,074
<i>Transport—Crown road reserves (estimated)</i>	73,000
Total extent of public land in the investigation area including estimated Crown road reserves	162,074
Total extent of investigation area (all freehold and public land)	562,740
Overlays (areas included in the totals above)	
Reference area (in various categories above)	2,070
Heritage river (in various categories above)	345

Notes:

1. Areas are rounded to the nearest hectare and are mostly derived from GIS analysis.
2. Only portions of a number of larger parks are within the investigation area (e.g. Dandenong Ranges National Park, Kurth Kiln Regional Park, Lerderderg State Park, Kinglake National Park).
3. The estimate of public land allocated to Services and Utilities areas - Transport (road) purposes is described in the table in two ways—firstly, an accurate description of public land parcels allocated to road use and secondly, the less accurate estimate of unparcellised Crown road reserves derived using GIS methods.
4. Three parks are listed as Other parks on Schedule Three of the *National Parks Act 1975*. Lysterfield Park and Woodlands Historic Park are categorised as regional parks, and Langwarrin Flora and Fauna Reserve is categorised as a nature conservation reserve.
5. Changes in area since publication of the discussion paper are largely due to mapping corrections. Some additional areas of public land have been identified since publication of the discussion paper.

Table 7.2

Current public land ownership in the investigation area

PUBLIC LAND OWNER	AREA (ha)
Crown	57,588
Melbourne Water	18,009
VicRoads	5,454
Department of Education and Early Childhood Development	2,363
VicTrack	2,323
Western Water	997
Port of Melbourne Corporation	494
South East Water	470
Southern Rural Water	249
Department of Business and Innovation	184
Department of Health: Hospitals	155
Department of Health: Cemeteries	41
Skills Victoria and other adult education services	153
Yarra Valley Water	151
Department of Planning and Community Development	142
Trust for Nature	112
Department of Human Services	60
City West Water	29
Department of Transport	26
Metropolitan Fire and Emergency Services Board	25
Department of Treasury and Finance	21
Country Fire Authority	16
Ambulance Victoria	6
Department of Justice	6
Total extent of public land in the investigation area excluding estimated Crown road reserves	89,074
<i>Crown road reserves (estimated)</i>	<i>73,000</i>
Total extent of public land in the investigation area including estimated Crown road reserves	162,074

Notes:

1. Public land owner total areas include land owned by the Minister for the relevant portfolio and other bodies that are directly administered by the relevant department or Minister such as boards of TAFE.
2. Department of Human Services (Housing and Community Building) developments (with the exception of high-rise apartment buildings) are not shown because of privacy reasons. VicUrban land holdings are not shown because of the generally rapidly changing ownership of this land.
3. Areas of Crown land administered by the Department of Treasury and Finance (DTF) are included in the table as DTF land.
4. Note that the Department of Industry, Innovation and Regional Development is now shown as the Department of Business and Innovation. Skills Victoria has transferred to the Department of Education and Early Childhood Development (DEECD) but has been retained in a separate ownership category reflecting that much of the land is in freehold title held by the council or board of the tertiary institute rather than the Secretary of DEECD. Major Projects Victoria land holdings are included under Department of Business and Innovation.
5. The areas have changed slightly since the publication of the discussion paper, reflecting acquisitions, disposals, new identification of public land and mapping corrections.

7.2 Public land use recommendations

Public land uses can be formalised through legislation, by existing Crown land reservation or by previous government accepted public land use recommendations. For some public land, there may be no legal or formal mechanism in place which identifies the accepted current or future use. Other public land may have obsolete historic reservations or very broad purposes (e.g. public purposes), or may no longer be required for its original purpose.

For this reason VEAC is providing general public land recommendations to confirm existing public land use across the investigation area. For those public land use categories where no change is recommended, and where areas are clearly formalised—namely national and state parks, marine national parks and marine sanctuaries, state forest—no general public land use recommendations are provided.

While a substantial number of Crown land areas in the outer parts of the investigation area are subject to government accepted Land Conservation Council (LCC) recommendations, VEAC's inventory of public land in the investigation area indicates that many of these have not yet been formally reserved for their approved purposes. For example, 27 conservation reserves recommended by the LCC and accepted by government remain as either wholly or partly unreserved Crown land or reserved for a purpose not necessarily consistent with the LCC recommendation (see appendix 2). Although these areas are managed in accordance with the accepted recommendations, it is unlikely that appropriate management regulations apply. As part of the implementation of accepted public land use recommendations, these uses should be formalised by the appropriate reservation of Crown land.

RECOMMENDATION

R24 Resourcing implementation of public land use recommendations

Government allocates resources:

- (a) to implement previously accepted LCC recommendations on Crown land through appropriate reservation
- (b) for areas not subject to accepted LCC recommendations, to formalise current public land use shown on map A of this report (except those areas recommended for a change in use below) through reservation of Crown land as provided for in each public land use general recommendation
- (c) to implement government accepted recommendations for changes to public land use in this report (A1 to E5).

In addition to recommendations confirming current public land use, this section includes recommendations for the following changes to land use to enhance the protection of natural values:

- Additions to Kinglake National Park (recommendation A1)
- Additions to Bunyip State Park (recommendation A2)
- Additions to and change of status for Point Cook Coastal Park (recommendation A3)
- New Bandicoot Corner Bushland Area (recommendation E1)
- New Edithvale Wetland Bushland Area (recommendation E2)
- Addition to existing Seaford Wetland Bushland Area (recommendation E3)
- New Beaumaris Cliffs Geological and Geomorphological Features Area (recommendation E4)
- New Yallock Creek Streamside Area (recommendation E5)

Section 7.4 contains recommendations relating to the continued ownership and management of Melbourne Water's wetlands with high biodiversity values, namely:

- Ryans Swamp and surrounds (recommendation N1),
- Truganina Swamp (recommendation N2)
- Edithvale–Seaford Wetlands (recommendation N3).

Several submissions proposed additional sites be added to national or state parks. These largely focused on the vegetated public land in the area near Cockatoo and Gembrook encompassing Kurth Kiln Regional Park and various stream frontages. Another proposal was to add a section of Yarra Valley Parklands upstream of Fitzsimons Lane, Templestowe to Warrandyte State Park. There were also proposals for changes to the land use categories of a number of areas to improve protection of their natural values. VEAC is making recommendations in relation to two of the smaller areas at Yallock Creek and Beaumaris Cliffs.

In most investigations VEAC publishes a draft proposals paper between the discussion paper and the final report. This provides an opportunity for public consultation on proposed land use changes. For this investigation, the Council did not consider making recommendations on the majority of the additional proposals put forward in submissions and at community meetings because there was no opportunity to test community views in a draft proposals paper after release of the discussion paper. VEAC considers that the process for future investigations should include the publication of draft proposals papers for public comment.

The remainder of this section contains brief descriptions of each public land use category, followed by the general recommendation for the relevant category where appropriate, and any recommendations for changes to land use.

7.2.1 NATIONAL AND STATE PARKS

Victoria's national and state parks comprise the vast majority of the state's protected area system (see chapter 8 of the discussion paper). Set aside primarily to conserve and protect natural ecosystems under provisions of the *National Parks Act 1975*, they also provide for public enjoyment, education and inspiration in natural environments. Many are well recognised and popular tourism areas, often with spectacular landscapes.

National and state parks currently comprise approximately 25,000 hectares or about 28 percent of public land in the investigation area (see appendix 2). Kinglake National Park (approximately 10,095 hectares) and Bunyip State

Park (approximately 13,075 hectares) make up most of this area. Many of these parks are located on Melbourne's outer fringe and extend beyond the investigation area boundary (e.g. Dandenong Ranges National Park, Kinglake National Park, Lerderderg State Park).

VEAC is recommending that approximately 2,650 hectares be added to existing national and state parks to move towards towards nationally agreed targets for a comprehensive, adequate and representative (CAR) reserve system, to consolidate management and to strengthen protection of linkages along vegetated corridors. Other VEAC recommendations will result in a further 1,000 hectares being added to the protected area system, largely through the proposed change of status of Point Cook Coastal Park (see section 7.2.3).

Ecological Vegetation Classes (EVCs) are used as surrogates for ecosystems in assessment of proposed reservation against the nationally agreed criteria for establishing the CAR reserve system. The extent of EVCs in the recommended additions to parks and other conservation reserves is described in appendix 3.

Recommendations for national and state parks are additions to existing parks only and therefore general recommendations for these land use categories are not required.

Kinglake National Park additions

Kinglake National Park comprises a substantial area of vegetated forest on the southern fall of the Great Dividing Range. VEAC is recommending that the Yan Yean Reservoir and surrounds, Sherwin Ranges southern and northern buffers be added to the national park, along with other minor areas of contiguous unused government roads identified since the publication of the discussion paper (see figure 7.1).

The recommended additions substantially increase representation in protected areas of EVCs along the boundary between the Victorian Volcanic Plain and Highlands–Southern Fall bioregions (see appendix 3), including the plains grassy woodland EVC, considered endangered in both bioregions.

The Yan Yean Reservoir and surrounds are located on 2,590 hectares of Crown land and Melbourne Water freehold land near Yan Yean in Melbourne's north-east. The adjoining Sherwin Ranges southern buffer makes up 81 hectares of this area. VEAC is not recommending that the Yan Yean Reservoir Park and water treatment infrastructure be added to the national park.

The Yan Yean Reservoir supplies water to parts of Melbourne. The reservoir and surrounds are a 'closed catchment' and public access is restricted. Current controls on access should continue to protect water quality. The catchment area also contains two reference areas where recreational activities and access (except for authorised scientific research) are not permitted. Threatened flora and fauna have been recorded within the reservoir surrounds.

DSE and Melbourne Water should establish a management agreement for the water supply catchment within the national park to ensure that the land is managed to maintain water quality and protect water resources, as well as conserving biodiversity values.

Sherwin Ranges northern buffer (136 hectares) is a long, narrow site adjoining Kinglake National Park. The inclusion of this area in Kinglake National Park will provide an opportunity to protect an area of high natural values and consolidate public land management.

Some unused and unlicensed government roads are possible further additions to Kinglake National Park. One provides an east-west link between the existing national park and the recommended Yan Yean reservoir area addition. Another abuts the existing area of national park. These areas may have limited natural values on their own but their addition to the park would consolidate management and link areas.

The additions recommended in the discussion paper were largely supported in submissions. Some commented on management issues including the importance of retaining the closed catchment, fire management and the shared management arrangements. DSE noted that some road reserves need to be surveyed and declared, such as Coombs, Ridge and Gingles Roads and private access driveways across the northern Sherwin Ranges buffer area. It was also suggested that the reservoir park be included in the proposed national park addition.

VEAC considers that access to private land and roads survey can be undertaken during implementation of the accepted recommendations. Detailed survey of the new park additions would exclude existing roads and tracks required for access. The Yan Yean Reservoir Park has not been included in the national park to allow for greater flexibility for management of current and potential future recreational uses.

RECOMMENDATION

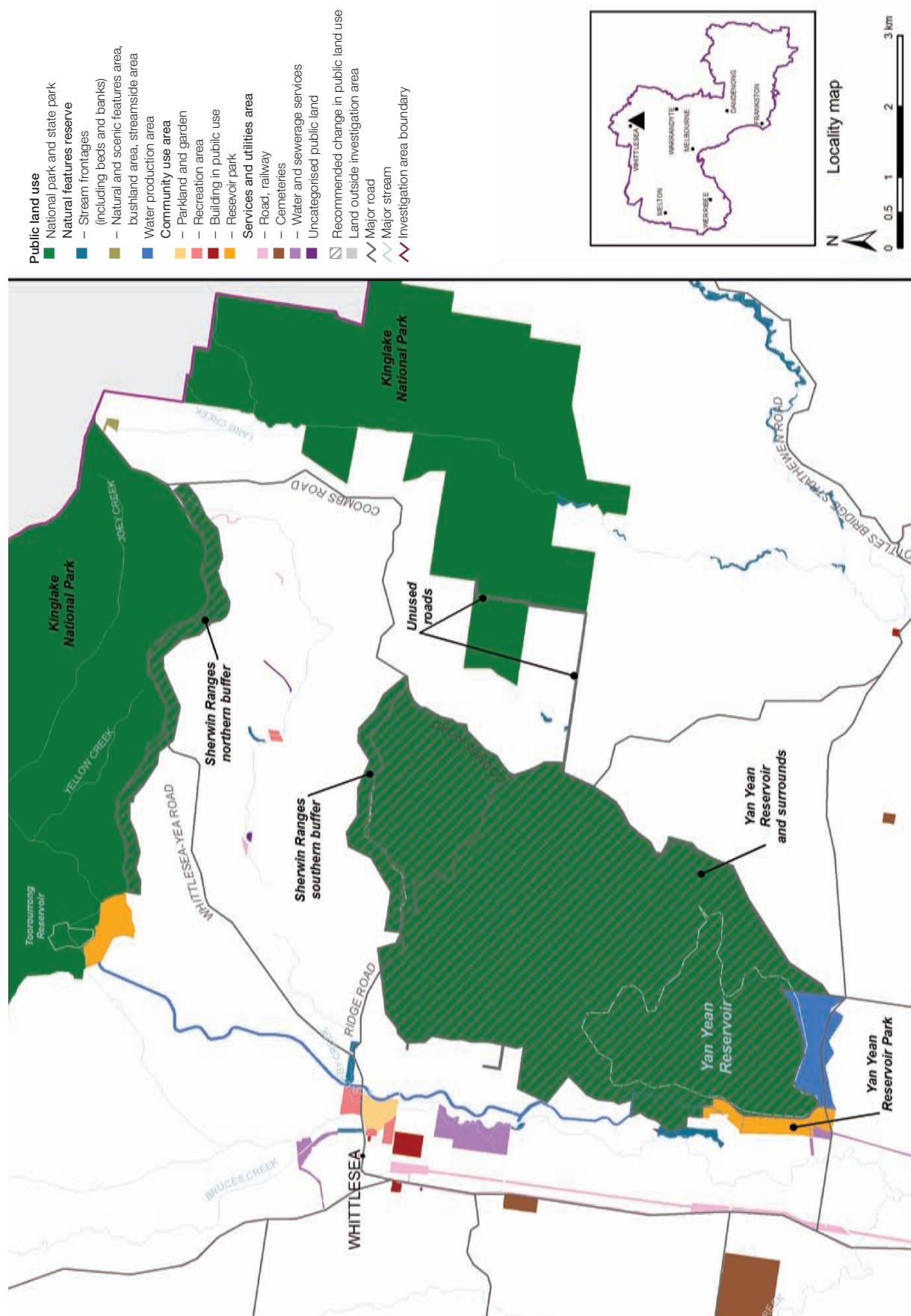
A1 Additions to Kinglake National Park

- (a) The area of approximately 2,590 hectares, shown hatched on figure 7.1, be added to Kinglake National Park under the *National Parks Act 1975*; and
- (b) a management agreement be established under section 32I of the *National Parks Act 1975* for the area shown on figure 7.1 as Yan Yean Reservoir and surrounds; and
- (c) Melbourne Water continues to manage all infrastructure associated with the Yan Yean Reservoir and water treatment facilities.

Note:

1. Implementation of accepted recommendations should allow flexibility for minor boundary adjustments. Ridge, Gingles and Coombs Roads as well as various other roads including private access roads need to be surveyed, declared and excluded from the national park. VEAC notes the presence of encroachments which should be resolved when legislating the park additions.

Figure 7.1
Recommendation A1:
 Additions to Kinglake National Park



Bunyip State Park additions

Bunyip State Park is a substantial area located in the east of the investigation area. Around 53 hectares were recommended as additions to the state park in section 10.2 of the discussion paper, comprising unused government road and unreserved Crown land near Tonimbuk. These areas are described below and shown on figure 7.2.

Most of the recommended addition to the park is made up of approximately 50 hectares of unreserved Crown land near Tonimbuk. This area contains EVCs such as damp heathy woodland and lowland forest. This addition will help to secure protection of the habitat of the helmeted honeyeater *Lichenostomus melanops cassidix*, and consolidate public land management.

Two areas of unused government road abutting Bunyip State Park are recommended for inclusion in the park to consolidate management. One near Tonimbuk was identified in the discussion paper. An additional abutting unused and unlicensed government road located near Gembrook is also a recommended park addition. Both of these areas contain remnant native vegetation.

VEAC is also recommending that 5.2 hectares of Diamond Creek stream frontage that has been identified since publication of the discussion paper be added to the park. This area is well vegetated and there are no grazing licences on this site. The frontage contains remnant native vegetation and the threatened river blackfish *Gadopsis marmoratus* has been recorded in this section of Diamond Creek. The site provides additional habitat for the critically endangered helmeted honeyeater. The surrounding area supports other threatened fauna species such as sooty owl *Tyto tenebricosa*.

The relatively small areas recommended in the discussion paper for addition to Bunyip State Park were generally supported in community consultation. Some submissions proposed that this park and other nearby areas such as Kurth Kiln Regional Park and Yarra State Forest be made into a new large-scale conservation area or national park. Some submissions proposed that grazing under existing licences should not be permitted.

Expansion of the area under the National Parks Act to incorporate all or parts of Kurth Kiln Regional Park and other nearby areas with biodiversity values was not further considered by Council as there is no opportunity for community consultation and, in any case, much of these proposed additions are outside the current investigation area.

Annual grazing licences are currently issued on two of the Crown allotments. VEAC considers that these two licences could continue to be issued to the current licensees, unless voluntarily surrendered. They should not, however, be issued or transferred to new licensees.

RECOMMENDATION

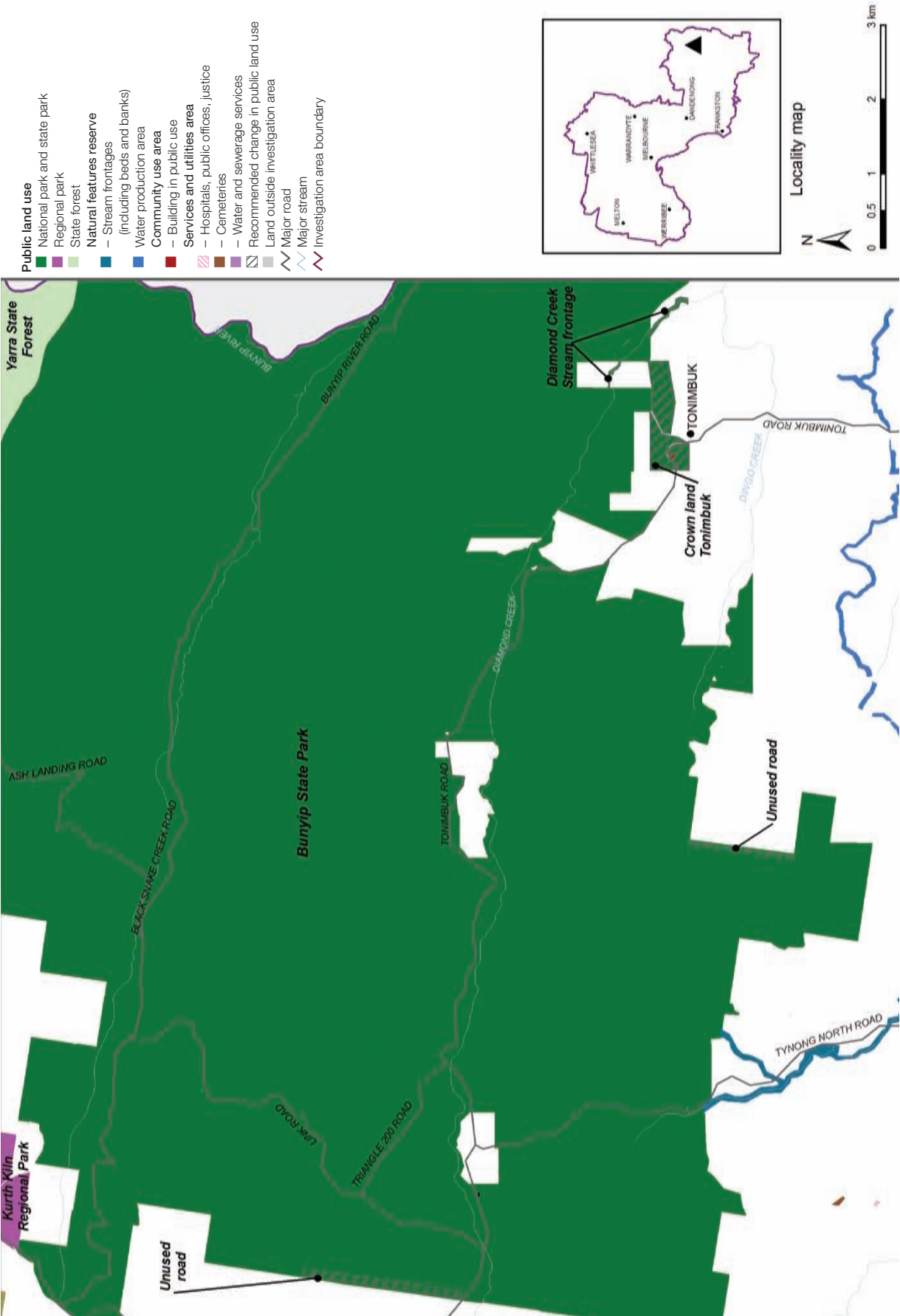
A2 Additions to Bunyip State Park

- (a) The area of approximately 62 hectares, shown hatched in figure 7.2, be added to Bunyip State Park under the *National Parks Act 1975*; and
- (b) grazing licences may be reissued to the current licensees only.

Note:

1. Implementation of accepted recommendations should allow flexibility for minor boundary adjustments.

Figure 7.2
Recommendation A2:
 Additions to Bunyip State Park



7.2.2 MARINE NATIONAL PARKS AND SANCTUARIES

Parts of Yaringa Marine National Park (90 hectares of 980 hectares total) in Western Port and Jawbone Marine Sanctuary (4 hectares of 30 hectares) near Williamstown are included in the investigation area. Yaringa Marine National Park is an important portion of the Western Port Ramsar wetland, and one of the least disturbed intertidal mudflats in the region. Jawbone Marine Sanctuary contains one of the largest remnant mangrove communities in Port Phillip Bay.

No general recommendations are provided for the existing marine national parks and marine sanctuaries as no changes are recommended to these areas.

7.2.3 OTHER PARKS

Several areas across Victoria are set aside under Schedule Three of the National Parks Act as 'other parks' for a variety of purposes. Where established primarily for protection of natural or biodiversity values, these parks are considered to be part of the protected area system.

VEAC has categorised Lysterfield (Lake) Park and Woodlands Historic Park as regional parks and the Langwarrin Flora and Fauna Reserve as a nature conservation reserve based on their current land uses and values. VEAC is recommending that a new area, Point Cook Coastal Park, be added to 'other parks' on Schedule Three of the National Parks Act.

Point Cook Coastal Park

The existing Point Cook Coastal Park and Cheetham Wetlands, Truganina Wetland Coastal Park and the adjoining section of the Altona Foreshore Reserve make up approximately 960 hectares of Crown land near Point Cook. This area abuts the coastline and Point Cooke Marine Sanctuary. VEAC is recommending that this area be one coastal park (see figure 7.3) under Schedule Three of the National Parks Act. After considering submission comments (see below), VEAC is also recommending that a further 10 hectares of unreserved Crown land, and unused and unlicensed government road be included in the new park.

The proposed park contains a range of threatened EVCs such as coastal saltmarsh, plains grassland, aquatic herbland and coastal alkaline scrub. It provides habitat for endangered flora and supports numerous shorebirds and migratory birds. More than 200 bird species have been recorded. Cheetham Wetlands provides a wintering site for the critically endangered orange-bellied parrot *Neophema*

chrysogaster. It also provides habitat for the endangered striped legless lizard *Delma impar* and vulnerable yellow sedge-skipper butterfly *Hesperilla flavescens flavescens* (commonly known as Altona skipper butterfly). This area is partly within the Port Phillip Bay (western shoreline) and Bellarine Peninsula Ramsar site.

The Council considers that including this park on Schedule Three of the National Parks Act will acknowledge and protect the important natural values for future generations, while not impacting on current recreational and community uses of these areas.

Submission comments supported the creation of Point Cook Coastal Park under Schedule Three of the National Parks Act. Some adjoining Crown land areas were proposed as further additions to the park. The largest area contains chaffy saw-sedge *Gahnia filum*, a vital food source for the larvae of the yellow sedge-skipper (or Altona skipper) butterfly. This species has been recorded at the nearby Truganina Swamp.

It is proposed that domestic stock grazing be permitted in the existing cleared areas near the homestead to retain historic values.

VEAC recognises that while dog walking is generally incompatible with some biodiversity values, it is important to provide linkages for recreation trails. Dog walking is currently permitted on a section of the Bay Trail adjoining Cheetham wetlands but is screened to reduce disturbance to birds.

RECOMMENDATION

A3 Point Cook Coastal Park

The area of approximately 961 hectares, shown hatched in figure 7.3:

(a) be used to:

- (i) conserve, protect and re-establish indigenous flora, fauna and natural ecosystems
- (ii) preserve and protect features in the park of archaeological, historical, ecological, scenic, geological or other scientific interest
- (iii) provide opportunities for recreation and education associated with the enjoyment and understanding of natural environments and cultural heritage where consistent with (i) and (ii) above;

(b) specifically protect the following features and values:

- (i) the diverse indigenous flora and fauna associated with the threatened grasslands, saltmarsh and wetlands; and migratory and wader bird species
- (ii) saltmarsh and lagoons comprising Truganina wetlands and Cheetham wetlands between Laverton Creek and Point Cooke (see note 1)
- (iii) indigenous fauna associated with the beach and intertidal environments of the adjoining Point Cooke Marine Sanctuary;

(c) generally permit the following activities:

- (i) bushwalking, nature observation, cultural heritage appreciation, picnicking, recreational fishing
- (ii) bicycle riding on formed roads and tracks
- (iii) research, subject to permit
- (iv) cultural heritage activities in the vicinity of the homestead;

(d) exclude the following activities:

- (i) harvesting of forest products, including firewood collection
- (ii) grazing by domestic stock (see note 2)
- (iii) hunting and use of firearms
- (iv) dog walking except on leash on specified trails
- (iv) off-road motorcycling
- (v) burning solid fuel fires (see note 3);

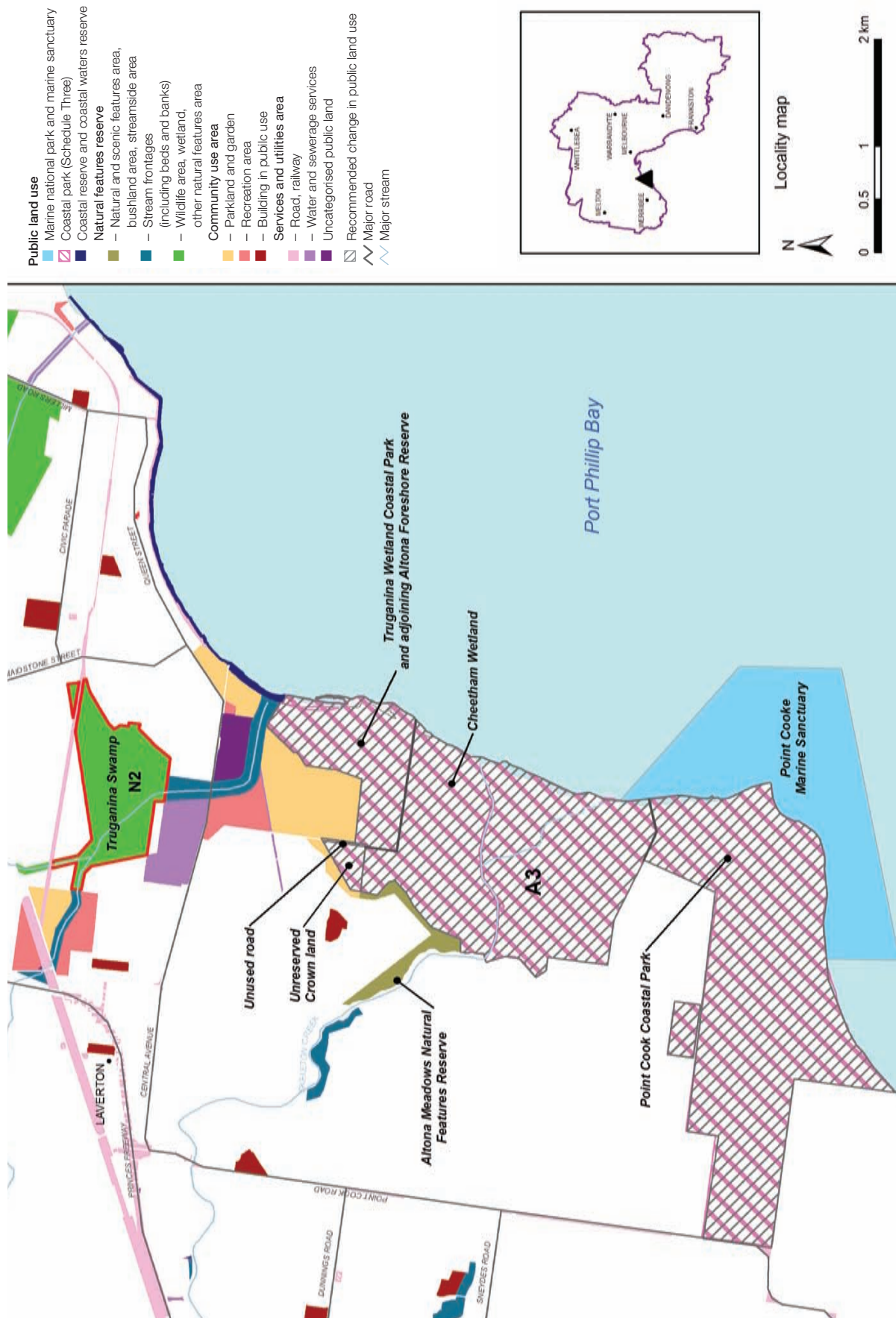
(e) include adjoining unused road reserves, where appropriate; and

(f) be established under Schedule Three of the *National Parks Act 1975*.

Notes:

1. 'Point Cooke' was named after First Mate John M Cooke. The geographic features of the point, marine reserve and subsequent marine sanctuary retain this original spelling. 'Point Cook' is used for the coastal park and township.
2. Grazing may be permitted as part of the maintenance of historic values in the area surrounding the homestead, and for ecological values, where it does not conflict with biodiversity values.
3. Fire may be utilised as a land management tool where compatible with ecological values.

Figure 7.3
Recommendation A3: Point Cook Coastal Park
Recommendation N2: Truganina Swamp



7.2.4 NATURE CONSERVATION RESERVES AND TRUST FOR NATURE PROTECTED AREAS

Nature conservation reserves are on Crown land set aside to conserve rare or threatened species and/or plant communities that have conservation significance or provide valuable habitat. The primary land use is nature conservation, with compatible educational and scientific study and some non-organised recreation depending upon the values of each particular reserve. There are 41 nature conservation reserves in the investigation area comprising some 3,567 hectares (see appendix 2).

VEAC considers that Trust for Nature conservation land held for long-term conservation purposes is part of the protected area system. Trust for Nature owned protected areas are generally managed in a manner consistent with nature conservation reserves, although public access may be more restricted. A total of 112 hectares of Trust for Nature owned public land at six sites meet the criteria for the protected area system.

Several submissions considered that horse riding should be permitted in nature conservation reserves. Some others considered that domestic stock grazing, apiculture, and minerals exploration and extraction should be excluded in these conservation areas. Management planning was considered an important tool for community engagement, planning or communicating recreational uses, and documenting natural values of these sites. Horse riding is not permitted on Trust for Nature land or in nature conservation reserves.

RECOMMENDATION

B General recommendations for nature conservation reserves and Trust for Nature protected areas

Nature conservation reserves and Trust for Nature protected areas, as shown on map A and listed in appendix 2, according to their specific values:

(a) be used to:

- (i) conserve and protect species, communities or habitats of indigenous flora and fauna
- (ii) provide for educational and scientific study, where consistent with (i) above
- (iii) provide for recreation by small numbers of people, where consistent with (i) above
- (iv) identify and protect cultural heritage values, where consistent with (i) above;

(b) generally permit the following activities, where compatible with (a):

- (i) bushwalking, nature observation, heritage appreciation, picnicking
- (ii) car touring, including four wheel driving, on formed roads and tracks
- (iii) for Crown land, apiculture on existing licensed sites, subject to the outcome of scientific research into the ecological impacts of this industry, and management requirements
- (iv) for Crown land, exploration and mining for minerals and searching for and extraction of stone resources subject to the consent of the Crown land Minister under the relevant legislation;

(c) exclude the following activities:

- (i) grazing of domestic stock (see note 2)
- (ii) harvesting of forest products
- (iii) hunting and use of firearms (see note 3)
- (iv) solid fuel fires at any time of year (see note 4)
- (iv) dog walking (see note 5)
- (v) horse riding;
- (d) include adjoining unused road reserves, where appropriate;
- (e) be permanently reserved, if Crown land is not already appropriately reserved for conservation purposes, under the *Crown Land (Reserves) Act 1978* (see note 5); or
- (f) continue to be managed in accordance with the above, for Trust for Nature land, and:
 - (i) should these areas no longer be required by Trust For Nature, that the areas be transferred to the Crown, and
 - (ii) be permanently reserved for conservation purposes under the *Crown Land (Reserves) Act 1978*.

Notes:

1. The above management objectives and land use recommendations are those that generally apply for the land use category. Exceptions to these may apply to specific reserves in special circumstances.
2. Grazing may be contracted for ecological or management purposes such as targeted weed control.
3. Hunting and the use of firearms may be authorised as part of a pest animal control program.
4. Fire may be utilised as a land management tool where compatible with ecological values.
5. On-lead dog walking may continue on a small area of The Pines Flora and Fauna Reserve as part of a link to a walking trail, and in accordance with management planning.
6. Langwarrin Flora and Fauna Reserve is to remain on Schedule Three of the *National Parks Act 1975*.
7. Recreational access to Trust for Nature reserves is at the discretion of the land owner.

7.2.5 REGIONAL PARKS

Regional parks provide for informal recreation for large numbers of people in natural or semi-natural surroundings. Minor resource use may be permitted in some regional parks. Recreational objectives are generally given priority over nature conservation objectives in regional parks. More intensively developed recreation areas on public land, such as sportsgrounds, are generally categorised as community use areas and are described later in this chapter.

These large parks are generally outside of, but readily accessible from urban areas or major tourist routes. Regional parks vary in their specific values and characteristics, but typically they provide an environment where residents and visitors can enjoy a broader range of activities such as dog walking than are usually allowed in national, state and wilderness parks. There are four regional parks wholly or partly in the Metropolitan Melbourne Investigation area: Kurth Kiln Regional Park, Lysterfield Park, Woodlands Historic Park and Plenty Gorge Parklands.

RECOMMENDATION

C General recommendations for regional parks

Regional parks as shown on map A:

(a) be used to:

- (i) provide for informal recreation for large numbers of people associated with enjoyment of natural or semi-natural surroundings
- (ii) conserve and protect natural landscapes and scenic values
- (iii) conserve and protect biodiversity to the extent that is consistent with (i) above, and
- (iv) protect significant cultural and historic sites, landscapes and places, including Aboriginal cultural sites and places;

(b) generally provide for the following activities, according to the specific characteristics of each park:

- (i) bushwalking, nature observation, heritage appreciation, picnicking, recreational fishing, cycling
- (ii) camping
- (iii) dog walking (see note 1)
- (iv) car touring and four wheel driving on formed roads and tracks
- (v) mountain bike and trailbike riding on formed roads and tracks
- (vi) horse riding on formed roads and tracks and overnight camping with horses
- (vii) metal detecting, prospecting, and
- (viii) research, subject to permit;

(c) generally exclude the following activities:

- (i) harvesting of forest products (see note 2)
- (ii) grazing by domestic stock (see note 3)
- (iii) hunting and use of firearms (see note 4), and
- (iv) licensed apiculture (see note 5);
- (d) where appropriate, be restored (subject to clearly defined, transparent and scientifically supported ecological objectives) to re-establish ecosystems or to return them to a state more closely resembling their natural condition (see notes 2 and 3);
- (e) include unused road reserves adjoining parks, where appropriate;
- (f) have a management plan prepared for each park in partnership with key user groups, local authorities and the community; and
- (g) be permanently reserved under the *Crown Land (Reserves) Act 1978* for the purpose of regional park if not already appropriately reserved (see notes 6 and 7).

Notes:

1. Dog walking is permitted on leash in some parks. It is not permitted in Lysterfield Park.
2. Ecological thinning may be permitted where required for ecological management purposes.
3. Grazing may be contracted for ecological or management purposes such as targeted weed control, and to preserve cultural or historic agricultural landscape values.
4. Hunting and use of firearms may be authorised as part of a pest animal control program.
5. Existing licensed apiculture sites can continue.
6. Implementation of accepted recommendations should allow flexibility for minor boundary adjustments.
7. Lysterfield Park and Woodlands Historic Park are to remain on Schedule 3 of the *National Parks Act 1975*.

7.2.6 METROPOLITAN PARKS

Metropolitan parks were described in chapter 4 of the discussion paper as regional parks in an urban setting. Since then VEAC has further considered the categorisation of metropolitan parks and has decided that they are more usefully treated as a separate land use category, in acknowledgement of the different range of activities in these parks and the generally more modified environment.

While the majority of community comments on regional and metropolitan parks and general land use recommendation C in the discussion paper supported it, many people commented that metropolitan parks have different recreational and economic uses to regional parks outside urban areas. For example, they considered that domestic stock grazing, apiculture and exploration for mining/ extractive industries should not be permitted in metropolitan parks. They also commented that, although activities such as camping, trail-bike riding, horse riding and four wheel driving are generally permitted in larger regional parks they are generally not permitted in metropolitan parks. Some submissions also considered that the protection of remnant native vegetation within regional parks should be promoted above recreational uses. Some corrections were also proposed to the mapping of metropolitan parks.

In recognition of the different character of metropolitan parks compared to regional parks, the range of recreational uses has been amended to provide for some more organised and intensive activities in metropolitan parks. Some resource uses or recreational activities are simply absent or not relevant in an urban setting; for example, camping, four wheel driving, apiculture. Referring to these uses and activities was therefore confusing to the community during consultation on the discussion paper, and Council has decided that specifying these activities as 'excluded' is not necessary.

Metropolitan parks, like regional parks, provide open space for recreation in natural or semi-natural environments; however metropolitan parks may also include areas of highly modified open space. Their landscapes range from areas of bushland to revegetated areas, landscaped areas similar to parklands and gardens, sports ovals and former farmland – potentially within one park. Others contain historic buildings. They provide for a different and often more diverse range of recreational uses. They are usually subject to intensive management planning, often in association with neighbouring local council owned open space and recreation reserves and facilities. Appendix 5 lists regional parks and metropolitan parks in the investigation area.

While some metropolitan parks accommodate sports grounds (e.g. Yarra Bend Park and Police Paddocks Reserve), VEAC has categorised and mapped sportsgrounds that have a clearly defined and limited use (e.g. golf courses) as community use area–recreation area.

Other existing metropolitan parks—Altona Coastal Park, Point Cook Coastal Park and Truganina Wetlands Coastal Park—have a coastal setting. These coastal parks are not currently considered to be protected areas as are some other coastal parks (e.g. Discovery Bay, Cape Liptrap and Cape Conran coastal parks). Note that VEAC is recommending that Point Cook Coastal Park and adjoining areas, including the Truganina Wetlands Coastal Park, be established as a new park under the National Parks Act (see recommendation A3) and be considered part of the protected area system.

RECOMMENDATION

D General recommendations for metropolitan parks

Metropolitan parks as shown on map A and listed in appendix 5:

- (a) be used to:
 - (i) provide for informal recreation for large numbers of people associated with enjoyment of natural or semi-natural surroundings or open space
 - (ii) conserve and protect natural landscapes and scenic values and open space
 - (iii) provide for organised recreation to the extent that is consistent with (i) and (ii) above and according to the specific characteristics of each park
 - (iv) conserve and protect biodiversity to the extent that is consistent with (i) above; and
 - (v) protect significant cultural and historic sites, landscapes and places, including Aboriginal cultural sites and places;
- (b) include unused road reserves adjoining parks, where appropriate;
- (c) have a management plan prepared for each park in partnership with key user groups, local authorities and the community; and
- (d) be permanently reserved under the *Crown Land (Reserves) Act 1978* for the purpose of metropolitan park if not already appropriately reserved (see note 2).

Notes:

1. Implementation of accepted recommendations should allow flexibility for minor boundary adjustments.
2. This recommendation requires that the *Crown Land (Reserves) Act 1978* be amended to create a new provision and schedule for metropolitan parks similar to that of existing section 47B.

7.2.7 STATE FORESTS

Across Victoria, state forests are a major source of timber products on public land, as well as supporting biodiversity and providing for a broad range of recreational activities. These forests are also used for a variety of other purposes such as earth resource extraction, stock grazing and apiculture. State forests in the investigation area are not currently a major source of timbers or firewood, but have been so in the past.

Two forest blocks of the extensive Yarra State Forest are included in the investigation area: the Mt Disappointment Block (1,605 hectares) and the Upper Bunyip Block (around 2,425 hectares). Detail of these areas is provided in chapter 4 of the discussion paper. Timber harvesting and domestic firewood collection will continue to be permitted in Yarra State Forest where designated by DSE.

Several submissions proposed that either one or both of the Yarra State Forest blocks be added to the adjoining national or state park to protect biodiversity values or water catchments. Some submissions listed in detail the natural values recorded in these areas.

State forests provide for intensive recreational and minor resource use, and it is important to retain areas for such uses in close proximity to Melbourne. State forests can reduce pressure on other areas of parks and conservation reserves. These areas are also potentially available for timber harvesting, subject to considerations such as water quality and biodiversity value protection in the Upper Bunyip Block, and post-fire recovery in the Mt Disappointment Block.

No general recommendations are provided for the existing state forest as no changes are recommended for these areas.

7.2.8 NATURAL FEATURES RESERVES

Natural features reserves are areas with a variety of natural values worthy of protection, including scenic areas, bushland areas, lakes, rivers and streams, and geological and geomorphological features areas. This public land use category includes areas of public authority freehold land, particularly along stream frontages and wetlands.

Bushland, scenic and natural features, geological and geomorphological features areas and streamside areas are considered to be protected areas (see appendix 2). Other natural features reserves such as wildlife areas, stream frontages, wetlands and lakes may have permitted uses that are generally incompatible with nature conservation

objectives including grazing, timber harvesting and duck hunting, and may be more intensively used for recreation.

Many of these reserves are relatively small areas of vegetated public land or linear strips along waterways. Some form important habitat links or corridors across the now fragmented landscape. Streamside areas and stream frontages are particularly important for the movement of plants and animals. These areas will be of increasing importance during changing climatic conditions (see section 3.3 and 4.2).

Edithvale-Seaford Wetlands and the Point Cook to Little River coastal wetlands have also been recognised as wetlands of international importance and listed under the Ramsar Convention. The northern coastal area of Western Port is part of the Western Port Ramsar site.

Degradation of streams and wetlands is an important land management issue across the investigation area. Several submissions commented on the importance of natural values and linkages along stream frontages. The improved management of waterways was also an issue with proposals to exclude stock grazing from all waterways, not just streamside area reserves.

Relatively few specific comments were received on the small areas of Crown land proposed as natural features reserves within the Edithvale and Seaford wetlands. Comments received supported the proposal, though few submissions mentioned the Crown land part of the site in isolation from the remaining freehold Melbourne Water land. Public land at Centre Swamp was also proposed as an area for similar conservation measures as it is also part of the former Carrum Carrum Swamp. Other areas identified in submissions with very high natural values, and proposed as new conservation reserves, include the Beaumaris cliffs and Yallock Creek. The first site is recognised as a site of international geological significance and the Yallock Creek area contains threatened EVCs and threatened species in a substantially cleared landscape. VEAC has recommended these areas in part as new natural features reserves (see recommendations E4 and E5).

The importance of waterways across Melbourne for biodiversity and recreational linkages has long been recognised. These values should be retained in the long term. While the areas may not be primarily reserved for nature conservation, they nonetheless retain natural values and make an important contribution to the biodiversity of Melbourne. These areas can be the most biodiverse, biologically productive and ecologically resilient parts of the landscape. Domestic stock grazing on water frontages has had an impact on biodiversity, water quality

and soil condition in some parts of the investigation area. Catchment management authorities, Melbourne Water and some adjoining land owners have undertaken restoration of riparian land through fencing and instillation of stock watering points. Restoration of riparian areas is an important way of enhancing landscape connectivity and building ecosystem resilience. Enhancing and retaining connectivity is a key conservation strategy in the face of climate change (see section 3.3).

Where possible, prevention of loss of natural values is a better and more cost-effective conservation management approach than restoration or rehabilitation. In a broad sense there should be no overall loss of natural values in natural features reserves. Application of the management objectives of the general recommendations for natural features reserves should ensure that natural values are protected while allowing for a broad range of complementary uses.

RECOMMENDATION

E General recommendations for natural features reserves

The natural features reserves as shown on map A, according to their specific characteristics:

(a) be used to:

- (i) protect natural features and values
- (ii) protect and restore areas with remnant vegetation or habitat value and conserve indigenous flora and fauna
- (iii) protect water quality where appropriate
- (iv) protect historic and Aboriginal cultural heritage features, values and sites
- (v) provide opportunities for education and recreation, including hunting where specified (see note 2), at levels consistent with (i) to (iv) above
- (vi) maintain scenic features and the character and quality of the local landscapes
- (vii) preserve features of geological or geomorphological interest;

(b) generally permit the following activities:

- (i) exploration for minerals be permitted, and mining, subject to decisions on particular cases
- (ii) prospecting and apiculture;

(c) exclude the following activities:

- (i) timber harvesting
- (ii) domestic stock grazing in bushland, scenic, geological and geomorphological features and streamside areas (see note 1);

(d) include unused road reserves in adjoining natural features reserves where appropriate ecological or recreational values are identified;

and

(e) be permanently reserved under the *Crown Land (Reserves) Act 1978* if not already appropriately reserved; or

(f) be managed in accordance with the above if public authority owned land.

Notes:

1. Grazing may be contracted for ecological or management purposes such as targeted weed control.
2. Existing wildlife areas to continue to be used in accordance with the natural features reserve general recommendations, and for public recreation (including hunting in season as specified by the land manager) and education, where this does not conflict with the primary management objective.

Bandicoot Corner Bushland Area

This 8 hectare site of unreserved Crown land is known locally as Bandicoot Corner because of the presence of the nationally vulnerable southern brown bandicoot *Isodon obesulus obesulus*. It adjoins an undeveloped recreation reserve (figure 7.4). This area contains threatened riparian woodland and swamp scrub vegetation communities of the former Koo-wee-rup Swamp. The endangered growling grass frog *Litoria raniformis* has been recorded in nearby Yallock Creek.

The Cardinia Environment Coalition currently manages approximately 2.5 hectares of the recommended area. About 5.5 hectares comprising the eastern part of the recommended bushland area is largely cleared. Revegetation of this area is likely to provide habitat for southern brown bandicoot over time.

The Bandicoot Corner Bushland Area draft recommendation was supported in submissions, with some suggestions that resourcing would be an issue for the revegetation of the cleared area. Information on an existing track across part of the site and the drainage line (Yallock No 4 drain) was provided. The need to exclude these areas from the bushland area is addressed (see recommendation E1).

RECOMMENDATION

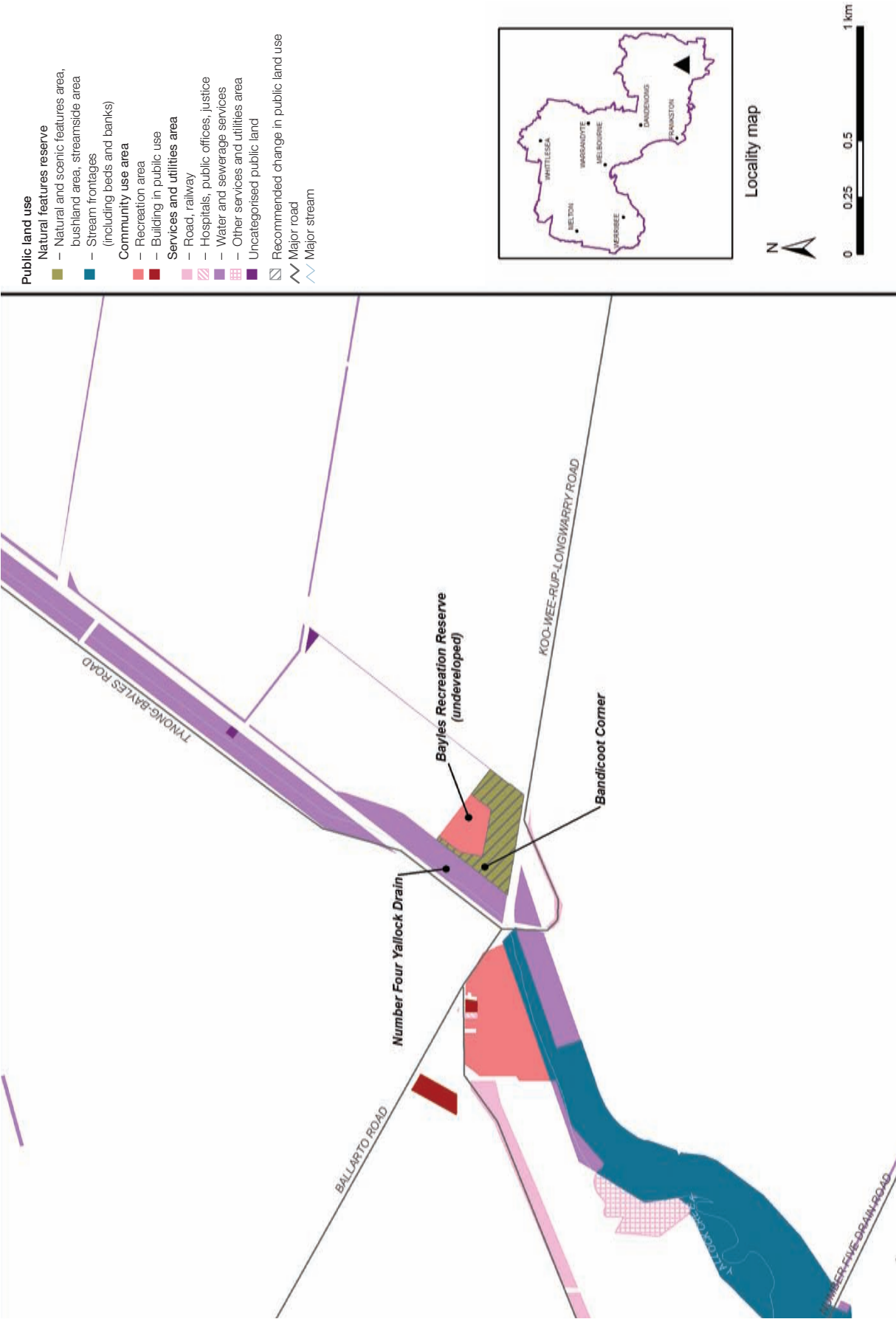
E1 Bandicoot Corner Bushland Area

- (a) The area of approximately 8 hectares, shown hatched in figure 7.4, be permanently reserved as a natural features reserve — bushland area and used in accordance with the natural features reserves general recommendations E
- (b) Melbourne Water continue to manage the adjoining Yallock Creek drain for its biodiversity values.

Notes:

1. Should the abutting undeveloped Crown land reserved for public recreation not be required as a sportsground, this area should be added to the bushland area and revegetated.
2. The cleared area is to be revegetated over time to provide additional habitat for southern brown bandicoot.
3. Implementation should provide for survey and establishment of Number Four Drain Road East road reserve.

Figure 7.4
Recommendation E1: Bandicoot Corner Bushland Area



Edithvale–Seaford Wetlands Bushland Areas

The Edithvale and Seaford Wetlands are two freshwater wetlands located in Melbourne's south-east (figures 7.5 and 7.6). The recommendations presented here apply to 5 hectares of Crown land at Edithvale Wetlands (E2) and 5 hectares of Crown land at Seaford Wetlands (E3). Recommendation N3 applies to Melbourne Water freehold land at both sites (see section 7.4).

The Edithvale–Seaford Wetlands are recognised for their high waterbird diversity and numbers and for supporting threatened species under the Ramsar convention. While these wetlands contain limited remnant vegetation, shallow freshwater marshes and reed beds continue to provide important habitat with over 190 bird species recorded including 25 migratory bird species. These sites support populations of endangered Australasian bittern *Botaurus poiciloptilus* and more than one percent of the East Asian–Australian flyway population of the migratory sharp-tailed sandpiper *Calidris acuminata*.

The two wetlands, along with Melbourne Water freehold land at Centre Swamp in Chelsea, are the last remains of the drained Carrum Carrum Swamp. Recommendations E2 and E3 for Crown land and N3 for Melbourne Water freehold land apply to the area within the Ramsar wetland boundary. They do not apply to Centre Swamp at Chelsea or the existing Seaford Wetlands Reserve (21 hectares) on reserved Crown land (see figure 7.6).

Relatively few comments were received specifically on the small areas of Crown land proposed as natural features reserves within the Edithvale and Seaford wetlands. Those comments received supported the proposal, though few submissions mentioned the Crown land part of the site in isolation from the remaining freehold Melbourne Water land. Public land at Centre Swamp was also proposed as an area for similar conservation measures as it is also part of the former Carrum Carrum Swamp. City of Frankston-owned land (not considered public land under the VEAC Act) makes up the remainder of the Seaford Wetland.

RECOMMENDATIONS

E2 Edithvale Wetland Bushland Area

That the area of approximately 5 hectares of Crown land, shown hatched on figure 7.5 be used in accordance with natural features reserves general recommendations E.

E3 Addition to Seaford Wetland Bushland Area

That the area of approximately 5 hectares of Crown land at Seaford Wetland, shown hatched on figure 7.6 be added to the existing natural features reserve-bushland area (Seaford Wetland Reserve) and used in accordance with natural features reserves general recommendations E.

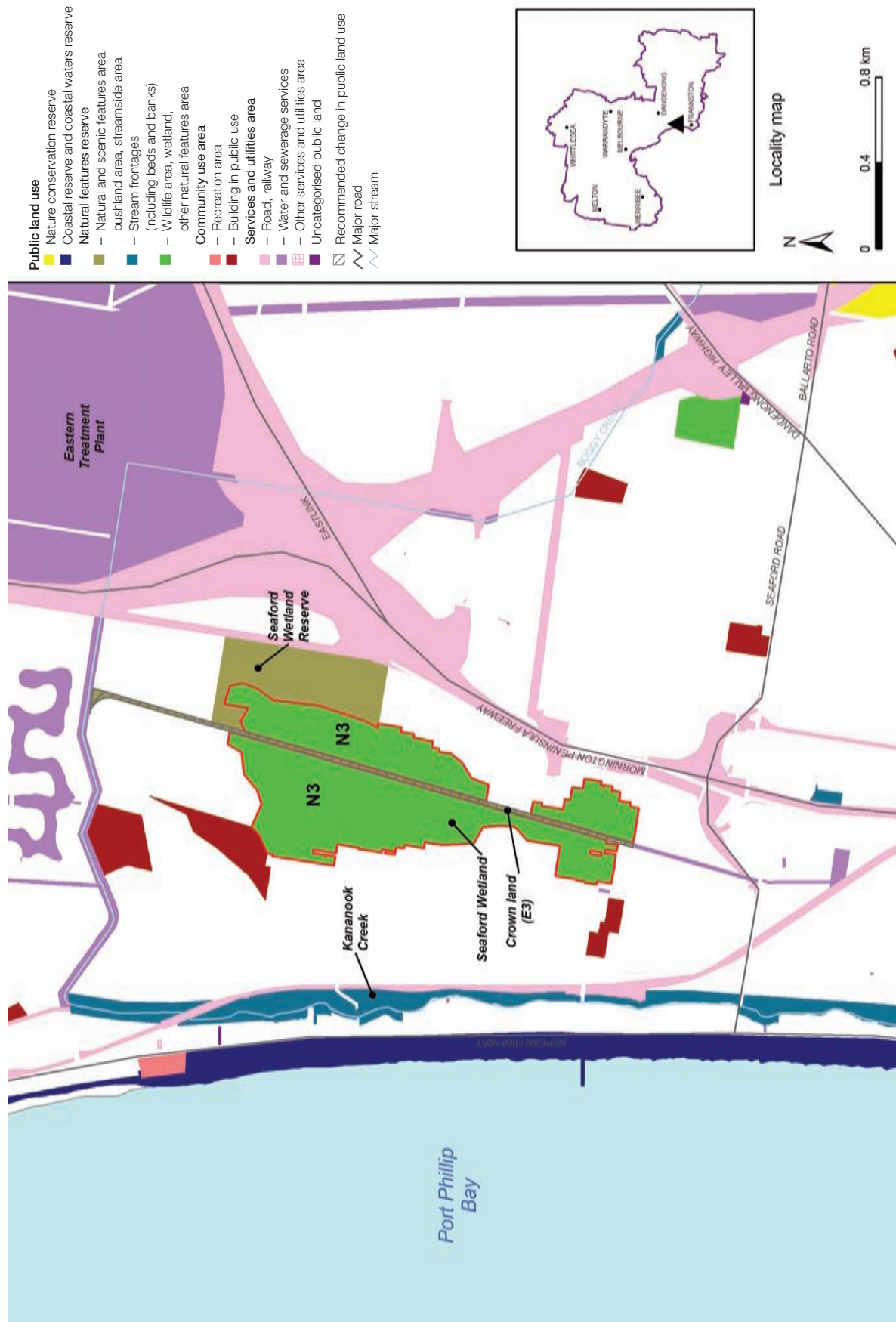
Figure 7.5

Recommendation E2: Edithvale Wetland Bushland Area

Recommendation N3: Edithvale Wetland



Figure 7.6
Recommendation E3: Addition to Seaford Wetland Bushland Area
Recommendation N3: Seaford Wetland



Beaumaris Cliffs Geological and Geomorphological Features Area

Natural features areas containing sites of geological interest or significance may be reserved primarily to protect these features for future education, research and public enjoyment. These places may also have other natural or recreational values including nature conservation, scenic or landscape values.

Beaumaris cliffs is recognised as a site of international geological significance^{68,69} and listed on the Register of the National Estate. This site forms the type locality for a major subdivision of the Late Miocene (Cheltenhamian Stage) and is used as a reference for comparison with other sites throughout Australia and the world. Some submissions proposed that it have greater conservation protection.

Rocks here contain one of the richest and most diverse fossil assemblages in Australia, and the cliff has high scenic value in this part of Port Phillip Bay. The cliff top area contains the vulnerable coastal headland scrub/coast banksia woodland mosaic.

VEAC is recommending a new natural features reserve for the Beaumaris cliffs and surrounds located on approximately 3 hectares of coastal Crown land at Beaumaris in Melbourne's south-east (figure 7.7). The site extends from low water mark at the base of the cliff face to the cliff top area (approximately 20 metres in height) and extends north-south along Beach Road.

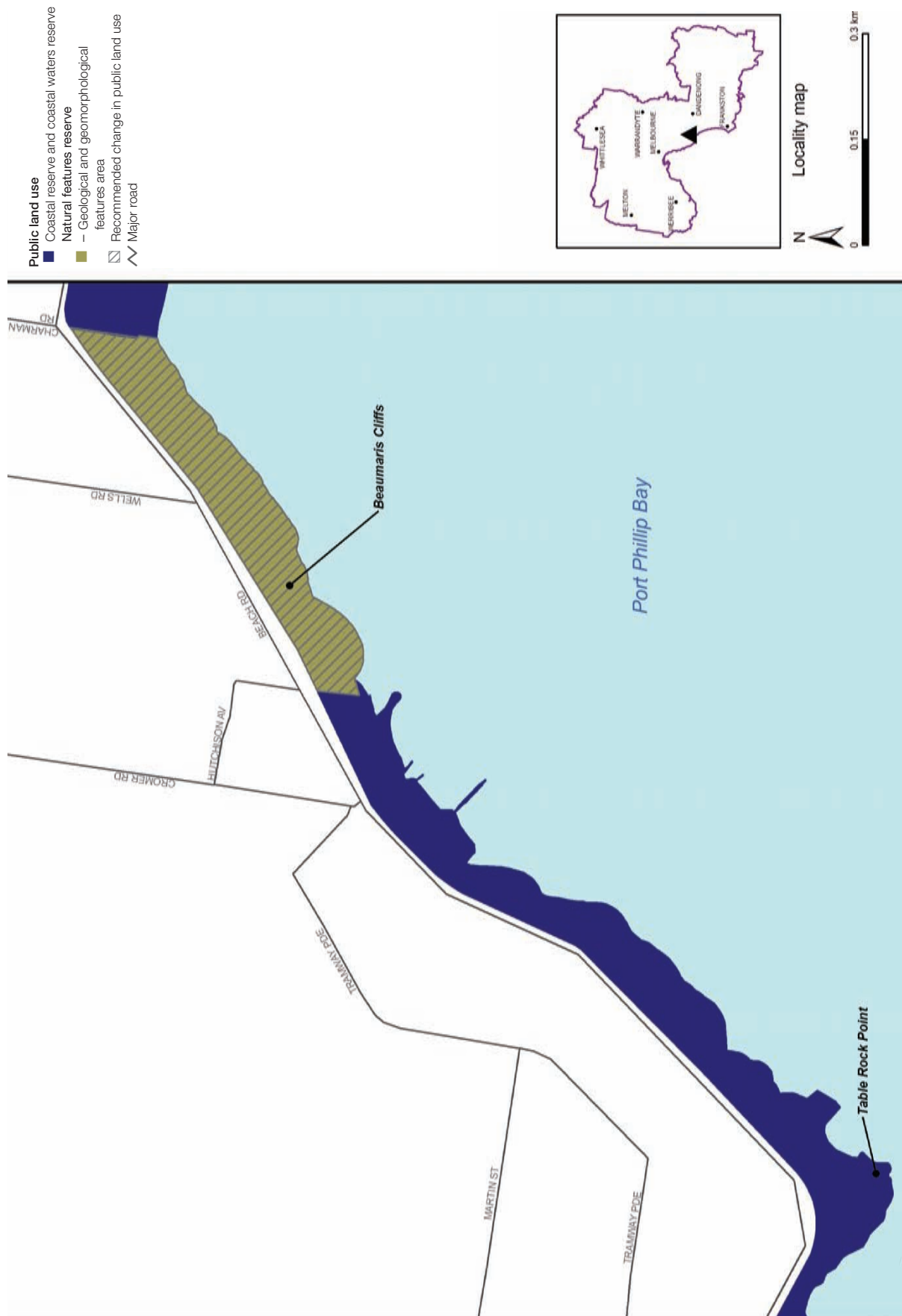
RECOMMENDATION

E4 Beaumaris Cliffs Geological and Geomorphological Features Area

The area of approximately 3 hectares of Crown land, shown hatched on figure 7.7 be used in accordance with natural features reserves general recommendations E.

Figure 7.7

Recommendation E4: Beaumaris Cliffs Geological and Geomorphological Features Area



Yallock Creek Streamside Area

In some places the public land adjoining streams is wider than the typical linear public land stream frontage reserve. Often these areas are suitable sites for visitor use and activities that would not be generally compatible with management of narrow stream frontages. Natural values in these wider riparian areas are important, particularly in substantially cleared landscapes. Such sites provide an important ecological function in fragmented landscapes, enhancing the role of stream frontages as linkages.

Several submissions highlighted the importance of remnant native vegetation for plant and wildlife habitat, particularly along Melbourne's waterways. In particular, an area along Yallock Creek containing mature swampy riparian woodland—an EVC that has been almost entirely removed from the Koo-wee-rup Swamp—was proposed for reservation for conservation purposes.

VEAC is recommending that a new streamside area be reserved along Yallock Creek. This six hectare site of Crown land is located east of the junction of Sybella Avenue and South Gippsland Highway, Koo-wee-rup (see figure 7.8). The site is largely located adjacent to Yallock Creek, but also includes a small area of road reserve providing access from the South Gippsland Highway.

The south-western section of the site is reserved for drainage and water supply purposes, while the area adjoining Yallock Creek is unreserved. Part of the road reserve adjoining the South Gippsland Highway is currently used as an informal recreation and picnic area, while a walking track extends north along the stream frontage.

The vulnerable dwarf galaxias *Galaxiella pusilla* has been recorded in the section of Yallock Creek that passes through the site. The majority of the site contains the endangered swampy riparian woodland EVC in moderate condition. This is a remnant of the once more extensive vegetation found within the former Koo-wee-rup Swamp in the Gippsland Plain bioregion. The understorey vegetation is disturbed, and requires substantial management works to improve its condition.

RECOMMENDATION

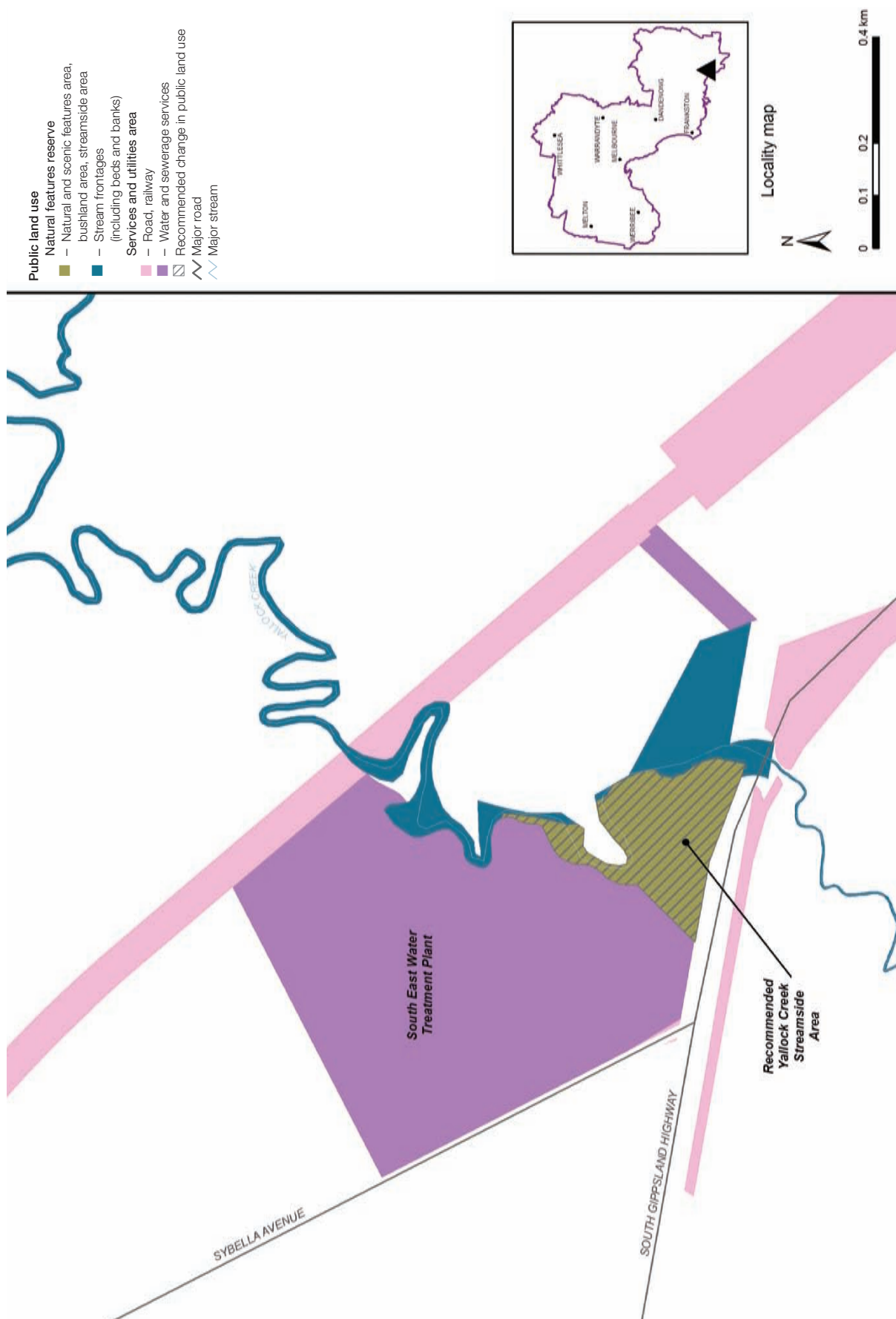
E5 Yallock Creek Streamside Area

The area of approximately 6 hectares of Crown land, shown hatched on figure 7.8 be permanently reserved for conservation purposes and used in accordance with natural features reserves general recommendations E.

Note:

1. This new reserve includes Crown land stream frontage of Yallock Creek on the western bank. Vegetated areas of South East Water freehold land on the western side of Yallock Creek should be added to the reserve if not required for services and utilities purposes.

Figure 7.8
Recommendation E5: Yallock Creek Streamside Area



7.2.9 COASTAL RESERVES

Coastal reserves consist of a usually narrow strip of public land along the coast set aside primarily for public recreation, education and conservation of natural environments. Most of the coastline in the investigation area (94 per cent) is Crown land. Coastal reserves fringing Port Phillip Bay and Western Port are a major recreational resource for many residents of, and visitors to, metropolitan Melbourne.

The coastline faces significant challenges with increasing pressure from development of adjoining land, increasing visitor numbers and threats from climate change. The Victorian Coastal Strategy recognises that development on coastal Crown land gives people access to the coast and should reflect safety, recreation and industry needs, although development is not needed at all locations along the coast. The strategy includes criteria for the use and development of coastal Crown land. Considerations include a need to site the use or development on the coast, ensure public access and facilitate multi-use of sites and existing infrastructure. Limited land resources need to be used for net community and public benefit.³⁰

The Victorian Coastal Strategy also provides a framework to direct development away from sensitive coastal areas and significant landscapes and manage it within existing settlements and urban areas and within activity nodes and recreation nodes. Recreation nodes are located on coastal Crown land outside activity nodes and are identified in Coastal Action Plans and management plans prepared by Regional Coastal Boards and approved under the *Coastal Management Act 1995*.

Several submissions commented on the importance and value to the community of coastal reserves. The impacts of sea level rise were mentioned and the need to undertake appropriate planning and actions to protect coastal land was emphasised. A number of comments suggested that more action needs to be undertaken to protect the coastline and that little is being done currently. The coastal impacts of climate change are explored in section 4.3.

Some submissions proposed areas of high quality coastal remnant native vegetation as new conservation areas in order to protect their biodiversity values. It was also suggested that a coastal conservation public land use category be established. Access to the coast for various recreational activities, including metal detecting, was also promoted.

Several locations along the coast were highlighted as sites with natural values that should be protected in conservation reserves (e.g. Beaumaris cliffs, parts of Kingston foreshore reserve). The importance of the coast as an ecological and recreation link was also recognised.

RECOMMENDATION

F General recommendations for coastal reserves

That coastal reserves shown on map A:

- (a) be used to:
 - (i) provide opportunities for recreation for large numbers of people, and also for recreation related to enjoying and understanding nature
 - (ii) protect and conserve natural coastal landscapes, ecosystems and significant geomorphological, archaeological and historical features for public enjoyment and inspiration and for education and scientific study
 - (iii) ensure the protection and conservation of important indigenous aquatic and terrestrial fauna and flora
 - (iv) ensure the identification and protection of Aboriginal cultural heritage sites and places
 - (v) provide opportunities for fishing and facilities for boating, together with the necessary navigational aids, and also to provide for necessary recreational facilities to support beach-related activity;
- (b) include adjoining unused road reserves, where appropriate;
and
- (c) if not already appropriately reserved, be permanently reserved, with the seaward boundary to low water mark, under the *Crown Land (Reserves) Act 1978*.

Notes:

1. The above management objectives are those that generally apply to most coastal reserves. Exceptions may apply to specific reserves in special circumstances.
2. The investigation area boundary is the municipal boundaries identified in the terms of reference. The coastal municipal boundary is low water mark as specified under the *Local Government Act 1989* except where amendments have been made (mostly to include piers, harbours and jetties in the municipal area).

7.2.10 COASTAL WATERS RESERVE

The coastal waters reserve public land use category recommended in the Environment Conservation Council's *Marine Coastal and Estuarine Investigation Final Report*, encompasses territorial waters (including the seabed) outside parks or other reserves and extending from the shoreline to 5.5 kilometres offshore.⁷⁰ This land use category has a wide range of objectives. A more detailed description of the investigation area boundary, intertidal zones and public land use along the coastline is provided in chapter 4 of the discussion paper.

In the investigation area coastal waters reserve occurs in some river estuaries and around infrastructure associated with piers, jetties and wharves and generally where the investigation area boundary extends beyond the low water mark (around 480 hectares). Navigational aids and markers are included in services and utilities areas, but are generally too small to see at the scale of VEAC's mapping. Although not formally reserved, management of these areas is consistent with the objectives outlined by the ECC and accepted by government.⁷⁰ General public land use recommendations are not provided for this reason and because a broader statewide framework, including engagement with a range of stakeholders, is considered appropriate.

No comments were specifically made in submissions regarding coastal waters reserve. Some comments were made on the management of natural values in marine environments and marine protected areas more generally. These areas are largely outside the investigation area.

7.2.11 WATER PRODUCTION AREAS

Water production areas land use category includes bulk water storage areas (reservoirs, large water holding basins), diversion weirs, pump intakes and associated buffer areas that obtain their water supply from catchment flows. These areas comprise some 8,340 hectares of public land in the investigation area. The largest water production areas are reservoirs and water catchments at Cardinia, Melton, Djerriwarrah, Yan Yean, Sugarloaf, Toorourrong and Greenvale, with an additional area allocated for potential future reservoir use at Watsons Creek, near Christmas Hills. Informal recreational use associated with these water storages occurs in community use area–reservoir parks (see section 7.2.13).

The importance of water supply and water quality to Melbourne was raised in a few submissions. Other comments related to the provision of these areas for some recreational activities and proposed the general exclusion of resource uses such as timber harvesting and stock grazing. Additional protection for remnant native vegetation in these areas was also proposed.

The recommendations below retain the objectives for use published in the discussion paper and note that exceptions may apply in some circumstances. For example, limited informal recreational use may be compatible with some water production areas, at the discretion of the land manager and/or water supply authority.

RECOMMENDATION

G General recommendations for water production areas

Water production areas including storage areas, diversion works and associated facilities; protective buffer zones around diversion works and storages where defined in a special area plan and any other public land considered necessary, as shown on map A:

- (a) be used for water supply purposes
- (b) permit other activities by the water supply authority after consultation with the Department of Sustainability and Environment, and other relevant agencies as appropriate
- (c) protect natural and cultural heritage values
- (d) include adjoining unused road reserves, where appropriate; and
- (e) if Crown land which is not already appropriately reserved, be permanently reserved under the *Crown Land (Reserves) Act 1978* for water supply purposes and be managed by the appropriate water supply authority; or
- (f) if public authority land, be managed in accordance with the above.

Notes:

1. Some large water storage areas not primarily used for domestic water supply are also used for water-based recreation. This recreation may continue except where it results in deteriorating water quality.
2. The LCC recommendation C48⁶⁷ for the Warrandyte-Kinglake Nature conservation link remains in effect to the extent that it is not already implemented. This requires, among other things, that the:
 - (a) conservation link be retained as public land and managed in accordance with the general recommendation for nature conservation reserves; and
 - (b) that, subject to acquisition arrangements being agreed, Melbourne Water land within the link be transferred to DSE if the Watsons Creek reservoir does not proceed or if Melbourne Water decides to dispose of its landholdings.

7.2.12 HISTORIC AND CULTURAL FEATURES RESERVES

Throughout the investigation area there are a range of sites and places associated with Aboriginal history and European exploration, settlement, agriculture, timber production and gold exploration and mining. There are 14 historic and cultural features reserves in the investigation area—see table 4.4 in the discussion paper.

Historic and cultural features reserves are established primarily to protect highly significant historical or archaeological values, including features such as buildings, structures, relics or other artefacts. Historic and cultural heritage places on public land often contribute to overall values in areas other than historic reserves. In some places, a particular historic feature may be a key visitor attraction.

Several submissions commented on the range of recreational uses and values of historic and cultural features reserves—in particular Emerald (Puffing Billy) Railway Reserve. Recreation trails were mentioned several times for inclusion as a permitted use, while exclusion of resource uses (domestic stock grazing, apiculture and exploration for mining/ extractive industries) was highlighted.

Management of remnant native vegetation on these sites was also raised as an important issue with some submissions proposing that areas with intact native vegetation be excised for new conservation reserves. The protection of historic values by limiting re-developments was also promoted.

No new historic and cultural features reserves are recommended; however many of the existing areas do not have formally approved public land use management objectives in place. As with many other areas across Melbourne, the application of a consistent management framework will guide management of public land, including the protection of remnant native vegetation and provision for recreational opportunities where appropriate.

RECOMMENDATION

H General recommendations for historic and cultural features reserves

Historic and cultural features reserves as shown on map A, according to their specific characteristics:

- (a) be used to protect historic and cultural heritage values, features and sites (Aboriginal and non-Indigenous)
- (b) provide opportunities for:
 - (i) education and informal recreation such as picnicking, walking and, where relevant, fishing, and
 - (ii) more intensive recreation such as camping, where specified by the land manager, and where compatible with (a)
- (c) protect areas with remnant natural vegetation or habitat value
- (d) exclude timber harvesting
- (e) permit low impact exploration for minerals and mining, subject to consideration of the impact on values in (a) for each application or case
- (f) generally permit prospecting and apiculture, where relevant
- (g) exclude grazing (see note 2)
- (h) include adjoining unused road reserves, where appropriate; and
- (i) if Crown land which is not already appropriately reserved, be permanently reserved under the *Crown Land (Reserves) Act 1978*; or
- (j) if public authority land, be managed in accordance with the above.

Notes:

1. Where appropriate, a committee of management may be appointed or continue to manage historic and cultural features reserves in accordance with the general recommendations H.
2. Grazing may be contracted for ecological or management purposes such as targeted weed control.
3. Not all sites contain values suitable for recreation or other uses described above.

7.2.13 COMMUNITY USE AREAS

Community use areas are used for education, recreation or other specific community purposes. They comprise 7,396 hectares of public land in the investigation area including recreation areas, parklands and gardens, reservoir parks and buildings in public use, such as schools, libraries and halls. Some of these areas also contain significant natural values. Public land is in high demand to provide for these types of uses.

Each of the sub-categories within the community use area category is described in more detail in chapter 4 of the discussion paper and summarised below. Note that land owned by local councils is not included in VEAC's definition of public land. Local councils may be appointed committee of management over community use areas on Crown land.

Some of the most frequent comments made in submissions were about local parklands and other open space areas. Open space was a strong focus for proposals to retain all public land; particularly former school grounds. Recreation trails was also important to many people.

Some sites identified by VEAC in the discussion paper as community use areas—parklands and gardens were considered by some to be regional parks or metropolitan parklands, while other areas were recognised as having high biodiversity values and were considered to be conservation reserves. Since the release of the discussion paper VEAC has further considered and amended the categorisation of some of these areas.

VEAC also found that some parks do not clearly fit within the parkland and garden or recreation area sub-categories. Given the range of landscapes and activities undertaken in these areas, they sometimes verge on metropolitan parks (see section 7.2.6). In categorising these areas, VEAC recognises that within metropolitan Melbourne there is a spectrum of public land providing for recreational activities, from metropolitan parks through to larger and smaller parklands and gardens and to more modified and developed recreation areas. As for all such systems of categories, there are areas that fall on the margins and it is essentially a question of judgement how these are categorised.

Recreation areas primarily provide for organised sport (e.g. sportsgrounds, swimming pools, tennis courts, bowling greens, golf courses), with secondary non-organised and informal recreational uses. They account for over one quarter of public land categorised as community use areas.

Recreation trails are linear trails for cycling and walking. Note that only land specifically allocated to these trails is included in this category. Often trails are a secondary use of a range of other land tenures.

Parklands and gardens are local community parklands, playgrounds and ornamental gardens, zoological and botanical gardens. Inner Melbourne had some particularly large areas set aside during the initial settlement planning.

Reservoir parks are associated with water storage areas, and often contain recreational facilities for picnicking and walking tracks along the reservoir wall or in nearby bushland. They often provide scenic views of the reservoir and bushland in the surrounding water catchment. Cardinia, Yan Yean, Greenvale, Sugarloaf and Toorourrong reservoir parks are in the investigation area. They are mostly on Melbourne Water freehold land (approximately 380 hectares), but are also on Crown land (approximately 30 hectares). Those parks on Melbourne Water land are leased to, and managed by, Parks Victoria.

Buildings in public use account for over one third of community use areas encompassing 2,807 hectares. The potential for secondary or multiple community uses of these buildings distinguishes them from those that deliver services and utilities functions (e.g. health or justice services).

Buildings in public use also include historic and cultural heritage places on public land that are not historic and cultural features reserves, such as the Royal Exhibition Buildings. Although this land use category does not reflect the historic or cultural values, a range of other mechanisms including listing on heritage registers and planning scheme heritage overlays identify such sites as significant.

RECOMMENDATION

I General recommendations for community use areas

Community use areas, as shown on map A, according to their specific characteristics:

- (a) be used as recreation areas and trails, parklands and gardens, reservoir parks or for education and other community purposes; and
- (b) provide for a broad range of recreational and leisure activities including organised sport, walking, cycling and picnicking
- (c) protect the conservation, scientific, educational and historic values of botanic gardens and ornamental plantations
- (d) provide for education and public enjoyment in schools, public halls, kindergartens, libraries, museums and other similar areas
- (e) provide for appropriate facilities
- (e) maintain or restore features of cultural significance, natural surroundings and the local character and quality of the landscape where relevant, and where compatible with the above
- (f) exclude harvesting of forest products, hunting and 'stone' extraction, as defined in the *Extractive Industries Development Act 1995*
- (g) include adjoining unused road reserves, where appropriate; and
- (h) if Crown land which is not already appropriately reserved, be reserved under the *Crown Land (Reserves) Act 1978*, including reserving open space for a specific open space purpose; or
- (i) if public authority land, be managed in accordance with the above.

Note:

1. Where appropriate, a committee of management may be appointed or continue to manage community use areas in accordance with the general recommendations I.

7.2.14 SERVICES AND UTILITIES AREAS

This category is a broad public land use grouping for purposes such as transport (roads, railway), ports, cemeteries, government buildings, hospitals, public housing, justice services, fire stations, piers and jetties, and water and sewerage treatment facilities. Chapter 4 of the discussion paper provides greater detail of the sub-categories within services and utilities areas.

Relatively few community comments were received on services and utilities areas. Those issues raised were largely in relation to secondary use of this land for recreation and protection of biodiversity values. In particular, the protection of remnant native vegetation was proposed either by changing the primary use or by complementary management. Retaining remnant vegetation at Fawkner Crematorium for a memorial garden rather than clearing for cemetery use was proposed, for example, as an alternative management approach.

Some services and utilities areas have a secondary recreational use, where this is practical and safe. For example, retarding basins are often used for recreation and recreation trails are often constructed along the easement of pipelines or roadsides. The shared use of public authority land is discussed further in section 5.3.2.

Protection of remnant native vegetation on services and utilities areas is the responsibility of the land manager. Detailed vegetation mapping has been undertaken for many areas, and the protection of threatened species and communities is a priority addressed by several planning and legislative mechanisms.

The primary purpose of the land use sub-category Transport—roads and railways is to provide for transport and access. Transport land is an important and substantial proportion of public land across the investigation area. There is a total estimated area of 80,000 hectares of roads (mostly unparcellised government roads). Conservation, recreational use and landscape values are an important secondary uses along these often linear corridors in Melbourne. Monuments and historic markers are often located on road reserves.

Water and sewerage services areas comprise water or sewage pipes, channels, or other infrastructure used to convey water or sewage. This sub-category also includes storages that are part of the reticulation system and storages of water not used for domestic consumption, as well as drainage or flood-protection channels or structures and sewage treatment or disposal. Drainage basins that are diversions for flood waters are also allocated to this services and utilities land use category.

One of the largest areas of public land in the investigation area outside national and state parks is Melbourne Water's Western Treatment Plant, comprising some 6,685 hectares (of a total 11,000 hectares) within the investigation area. The Western Treatment Plant forms part of the Port Phillip Bay (Western Shoreline) and Bellarine Peninsula Ramsar Site. Complementary conservation management continues to enhance the protection of bird habitat at this site, reflecting its listing as a Ramsar site and the presence of threatened species. Some areas contain significant remnants of endangered native grasslands and the adjoining coastal reserve provides important habitat for migratory and wading birds.

RECOMMENDATION

J General recommendations for services and utilities areas

That reserves and easements for public services and utilities such as transport, electricity and gas, communications, cemeteries, water and sewerage be used for those purposes; and that

- (a) new services, or utility sites and easements or lines, not be sited in or across reference areas, and wherever possible not be sited in or across national, state or other parks or nature conservation reserves;
- (b) railway lines, roadsides and other service and utility sites be managed to protect natural values including remnant native vegetation and habitat, and Aboriginal cultural heritage values, as far as practical;
- (c) should a public land area or building and site used for service or utility purposes no longer be required for its primary designated use, it be assessed for its natural, recreational and cultural heritage values, and capability for other public uses.

Notes:

1. While DSE, VicRoads and local councils are commonly responsible for road reserve management, many unused roads are licensed to adjoining landholders. Roads and unused road reserves may not be distinguishable on map A.
2. There are numerous cemeteries across the investigation area that contain remnant native vegetation. These should be managed to protect this vegetation, as required under relevant legislation, and where it does not interfere with the primary objective of the cemetery.

7.2.15 UNCATEGORISED PUBLIC LAND

Uncategorised public land is a broad category for which no specific public land use is recommended. Land in this category has no clear primary public land use. While most uncategorised public land is likely to be surplus to the requirements of the relevant public land owner, other uncategorised land may have future uses or values identified through more detailed assessment processes or may be held in contingency for meeting future needs.

Many of the areas shown as uncategorised by VEAC are smaller blocks, particularly in and around infrastructure projects such as road corridors, that are now considered surplus, and public land that will be developed for private use in the near future. Other larger areas are future residential developments. The Kew Cottages development site will become private residences, with a small number of public housing sites retained. Public land identified for private residential development is uncategorised in terms of VEAC's public land use categories. Parklands established in these areas will typically be transferred to local councils and therefore are also uncategorised public land.

Many submissions proposed that there be no sale of any public land, as it should be retained to meet future community needs. Others thought that public land should be transferred to local government at no cost for use as public open space. These issues are addressed in greater detail in chapter 6 of this final report and were described in chapter 9 of the discussion paper.

One of the outcomes of VEAC's deliberations is that there should be a whole of government process for assessing the potential for surplus public land to meet alternative public uses (see recommendation R16). Crown land is already assessed to identify 'public land values'. These public land values are defined as:

*Land values which should be maintained for the benefit of present and future generations because of their environmental, historic, recreation, tourism, natural resource, social or cultural significance (including special significance to Aboriginal communities), or because of some special strategic value (such as access, fire management purposes, reserve linkages, etc).*⁵⁸

A significant proportion of public authority landholdings provide for government services or built infrastructure. These landholdings may also have environmental, recreational, heritage and other values. VEAC recommends that all surplus public land be assessed and retained in public ownership if public land values are present (see recommendation R17).

RECOMMENDATION

K General recommendations for uncategorised public land

Public land other than that recommended for specific uses in this report, or subject to previous accepted specific land use recommendations:

- (a) be uncategorised public land; and
- (b) existing legal use and tenure continue for the time being
- (c) Crown land be assessed and either:
 - (i) retained and assigned to a Department of Sustainability and Environment land manager if it has public land values, or
 - (ii) disposed of if assessed as having no public land values and as being surplus to current and future community needs; and
- (d) consistent with recommendation R17, surplus public authority land be:
 - (i) assessed for its potential to meet alternative public uses
 - (ii) retained as public land where certain public land values are identified
 - (iii) disposed of if assessed as having no public land values and as being surplus to current and future community needs.

7.3 Public land use overlays

Reference areas and heritage rivers are public land use overlays defined under specific legislation. A brief summary is provided below. Readers are referred to section 4.6 of the discussion paper for more detailed descriptions.

No changes are recommended for the existing overlays in the investigation area, and therefore no general recommendations are provided.

Reference areas

Reference areas are proclaimed under the *Reference Areas Act 1978*. These sites were identified as relatively undisturbed samples of one or more land types and set aside for the comparative study of land. The primary management objective provides for natural processes to continue undisturbed (as far as possible). There are five existing reference areas in the investigation area: three overlay national or state parks (see map A and appendix 2). Two are within the Yan Yean water supply catchment recommended as an addition to Kinglake National Park (see recommendation A1).

The only comment raised during consultation specifically addressing reference areas regarded the exclusion of powerlines. While the provisions of the *Reference Areas Act 1978* do not specifically preclude the installation of powerlines and other utilities, the intent is that these areas be retained in a natural state and infrastructure avoided where possible (see general recommendations J).

Heritage rivers

Heritage rivers are proclaimed under the *Heritage Rivers Act 1992* to protect those river corridors with outstanding values for current and future generations. Part of the Yarra River is designated a heritage river in the investigation area (see map A and appendix 2). The Yarra River Heritage River includes a total of 1,065 hectares with approximately 345 hectares in the investigation area.

Several submissions proposed that the Yarra River Heritage River be extended to include areas closer to Melbourne city. The importance of the Yarra River as a recreational and natural corridor through the city was emphasised and some submissions suggested that the values identified for the upper reaches were also present in the lower section extending to Richmond and/or to the estuary.

For an area to be considered a heritage river, the criteria to be met are scenic, recreational, cultural and ecological values. In the lower reaches, the Yarra River is highly modified and contains artificial channels and islands (e.g. Coode and Herring islands). However, there are some areas with high biodiversity values (particularly fish diversity), and much of the river has a very high recreational use and important cultural values.

One of the key features of a heritage river is that it be retained in a free-flowing condition without additional impoundments. In an urban context—with the forecast for increased flooding events under future climate change scenarios—land managers may require the ability to manipulate the flow of the Yarra River to protect assets in the city. Extension of the heritage river overlay is not recommended at this time.

7.4 Managing public authority land for the protection of biodiversity values

Melbourne Water owns a number of significant wetlands for flood management and other purposes. The three areas of public land discussed below have high biodiversity values and are currently managed by Melbourne Water to protect and enhance these values. Two of these areas are currently within Ramsar Wetlands of International Importance. Recommendations N1 to N3 below ensure the ongoing recognition, retention and management of these wetlands for conservation purposes.

Detailed descriptions of the site values are provided in section 10.2 of the discussion paper and summarised below. Crown land at these sites is described separately in recommendations for natural features reserves (see recommendations E2 and E3).

Relatively few comments were received during public consultation on the Melbourne Water land to be managed for biodiversity conservation. Those comments received supported the draft recommendations. It was queried why Centre Swamp at Chelsea was not included in the draft recommendations. Centre Swamp, like the Edithvale-Seafood Wetlands, is Melbourne Water freehold land and a remnant of the former Carrum Carrum Swamp. It is not part of the Ramsar site.

The draft recommendations in the discussion paper proposed that Melbourne Water consider establishing agreements for the management, use and conservation of these three areas of public land. DSE and Melbourne Water questioned the type of conservation agreement that could be applied to public authority owned land and the benefits of such an agreement given that Schedule 6 of the *Environment Protection and Biodiversity Conservation Regulations 2000* outlines general principles for the management of Ramsar wetlands of international importance. After giving this issue further consideration, VEAC has made some changes to the final recommendations below. The reference to conservation agreements has been removed and they now include proposals that Melbourne Water manage these areas in accordance with the general recommendations for natural features reserves.

Ryans Swamp and surrounds, Western Treatment Plant

Ryans Swamp is an intermittent, shallow, freshwater marsh located in the northern part of the Western Treatment Plant at Werribee, which is owned and managed by Melbourne Water (see figure 7.9). A larger block of about 191 hectares surrounding the swamp contains patches of threatened EVCs such as plains sedgy wetland, plains grassy woodland and plains grassland.

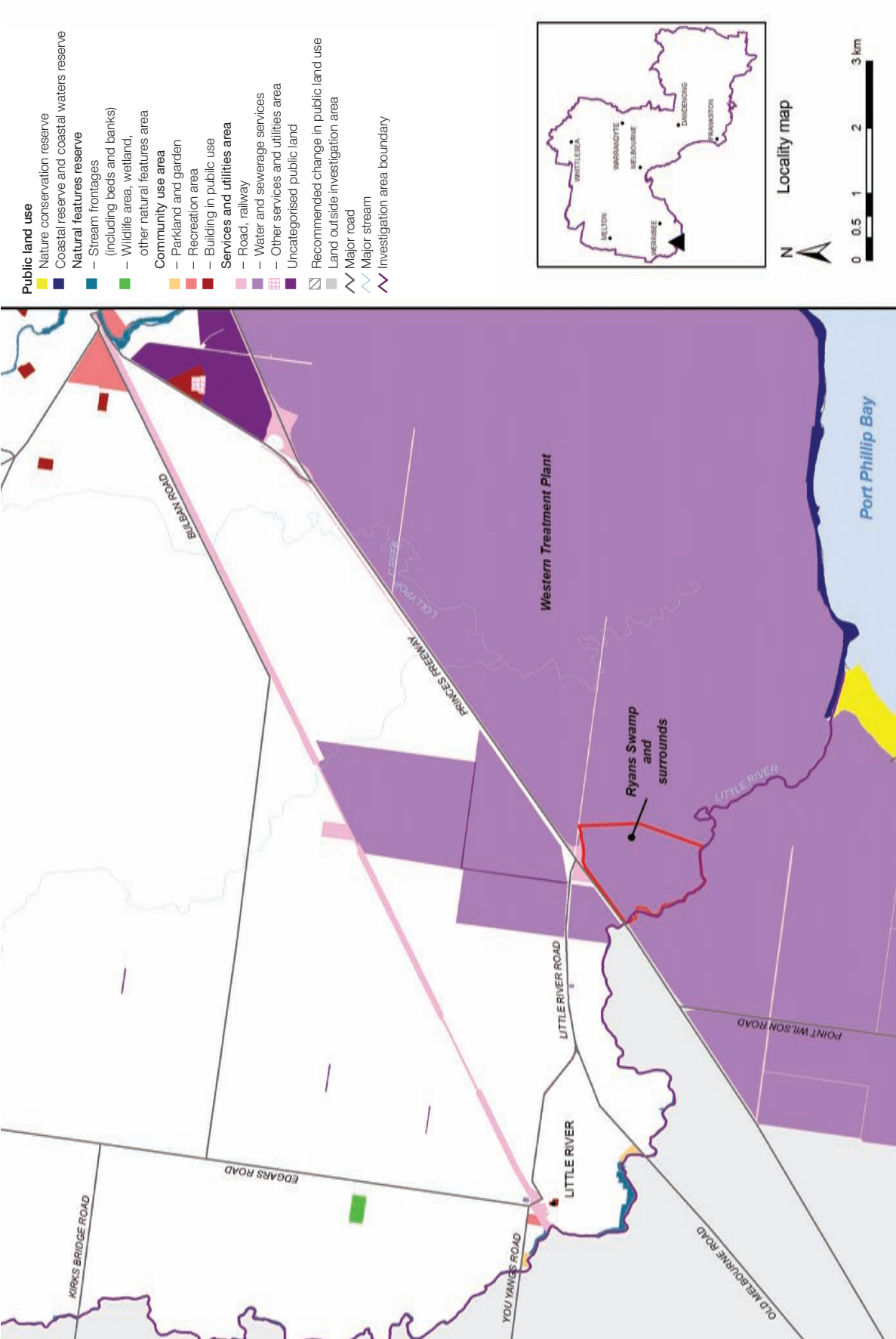
Ryans Swamp is located within the Port Phillip Bay (Western Shoreline) and Bellarine Peninsula Ramsar site. It supports a large population and diversity of waterbird species when flooded, including many rare or threatened species. This area provides habitat for the threatened species growling grass frog and striped legless lizard.

RECOMMENDATION

N1 Ryans Swamp and surrounds

- (a) Melbourne Water continue to use and manage the 191 hectare area containing Ryans Swamp and surrounds, as shown within the red boundary on figure 7.9, to protect and enhance biodiversity values and in accordance with natural features reserves general recommendations E; and
- (b) should Melbourne Water no longer require this area, it be transferred to the Crown and be permanently reserved for conservation purposes under the *Crown Land (Reserves) Act 1978*.

Figure 7.9
Recommendation N1: Ryans Swamp and surrounds



Truganina Swamp, Altona

Truganina Swamp is a 100 hectare semi-natural wetland located on Melbourne Water owned land near Altona (see figure 7.3). This area is not within a Ramsar wetland; however, the swamp area contains threatened coastal saltmarsh vegetation, and provides important habitat for migratory and water birds. The vulnerable Lewin's rail *Lewinia pectoralis* was recorded breeding at the section located north of the Williamstown railway line.

Vegetation adjacent to the swamp provides habitat for the yellow sedge-skipper butterfly (also known as Altona skipper butterfly). Sites at Altona such as Truganina Swamp are considered key conservation sites for this species in the investigation area.

RECOMMENDATION

N2 Truganina Swamp

- (a) Melbourne Water continue to use and manage the 100 hectares comprising Truganina Swamp, as shown within the red boundary in figure 7.3, to protect and enhance biodiversity values and in accordance with natural features reserves general recommendations E; and
- (b) should Melbourne Water no longer require this area, it be transferred to the Crown and be permanently reserved for conservation purposes under the *Crown Land (Reserves) Act 1978*.

Edithvale–Seaford Wetlands

The Edithvale and Seaford Wetlands are two freshwater wetlands located in Melbourne's south-east. These areas are the last substantial remains of Carrum Carrum Swamp and are recognised as a wetland of international importance under the Ramsar convention for both high waterbird diversity and numbers, as well as the presence of threatened species. Over 190 bird species including 25 migratory bird species have been recorded.

VEAC has made recommendations for Melbourne Water freehold land and Crown land within the Ramsar wetland boundary, excluding Centre Swamp at Chelsea (not within the Ramsar site) and land owned by the City of Frankston (not public land under the VEAC Act). Recommendations E2 and E3 apply to Crown land within these areas and are described under natural features reserves in section 7.2.8. The recommended conservation management area comprises approximately 107 hectares at Edithvale Wetlands and 78 hectares at Seaford Wetlands located on Melbourne Water freehold land (see figures 7.5 and 7.6).

VEAC considers that Melbourne Water should continue to manage these areas in accordance with the Australian Ramsar management principles (referred to above) and under the existing Memorandum of Understanding between Melbourne Water, Frankston City Council and DSE established in 2001.

RECOMMENDATION

N3 Edithvale–Seaford Wetlands

- (a) Melbourne Water continue to use and manage Edithvale–Seaford Wetlands, as shown within the red boundary in figures 7.5 and 7.6, to protect and enhance biodiversity values and in accordance with natural features reserves general recommendations E; and
- (b) should Melbourne Water no longer require the areas in (a) above, that these areas be transferred to the Crown and be permanently reserved for conservation purposes under the *Crown Land (Reserves) Act 1978*.

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APPENDIX 1

SUBMISSIONS RECEIVED

The following tables list the organisations and individuals who made submissions in response to the Notice of Investigation (period 1) or the discussion paper (period 2).

NAME	PERIOD 1	PERIOD 2
Action Sweetwater Creek		✓
Mr Tony Aitken		✓
Mr Marc Alexander		✓
Ms Jen Anderson and Mr Dave Suttie	✓	
Anti-Vivisection Union of South Australia	✓	
Australian Wildlife Protection Council Inc	✓	
Mr Peter and Ms Clare Averill	✓	
D. Backman	✓	
Ms Irene Baker	✓	
Ms Lauren Baker	✓	
Ms Sharon Banner		✓
Banyule City Council	✓	
Banyule Planning Network		✓
Bayside City Council	✓	✓
Mr David and Mrs Heather Beanland	✓	
Beaumaris Conservation Society Inc	✓	✓
Bicycle Victoria	✓	
Bird Observation and Conservation Australia (BOCA)	✓	✓
Birds Australia (Victorian Regional Group)	✓	
Birds Australia (Victorian Conservation Committee)		✓
Ms Sylvia Black	✓	
Blackburn and District Tree Preservation Society Inc	✓	
Blackburn Village Residents Group Inc	✓	
Mr Dave Boardman	✓	
Mr Andrew Booth	✓	✓
Boroondara Bicycle Users Group	✓	✓
Boroondara City Council	✓	✓
Boroondara Residents' Action Group		✓
Box Hill Cemetery Trust	✓	
Brandon Park Residents Action Group		✓
Brimbank City Council		✓
Mr Peter Brohier		✓
Ms Elizabeth Buckley	✓	
Bulleen Art and Garden	✓	
Burke Road Billabong Committee of Management		✓

NAME	PERIOD 1	PERIOD 2
Ms Kate Burnstein	✓	
Ms Liz Burton	✓	✓
Bushwalking Victoria	✓	✓
Mrs Tina Cain	✓	
Mr Wesley Callender and Mr Richard Barnden	✓	
Mr Andrew Campbell	✓	
Cardinia Environment Coalition Inc	✓	✓
Cardinia Ratepayers and Residents Association	✓	✓
Cardinia Shire Council		✓
Mr Brendan Casey	✓	
Casey City Council		✓
Ms Ivana Cicchelli	✓	
Des Clark	✓	
W Coates	✓	
Mr David and Dr Sally Cockburn	✓	
Ms Kimberly Cornell and Ms Annette O'Sullivan	✓	
Ms Alli Coster	✓	
Mr Robin Crocker		✓
Ms Ashley Crowther	✓	
Ms Kay Cruse		✓
Amal Dabboussi	✓	
Ms Marianne Dalton		✓
Darebin City Council	✓	✓
Darebin Creek Management Committee Inc	✓	
Darebin Dogs Owners Group	✓	✓
Mr Richard Davies and Mr Harry Kyriakou	✓	
Lou Dawson	✓	
Department of Health		✓
Department of Planning and Community Development		✓
Department of Sustainability and Environment		
Dingley Village Community Association		✓
Ms Renee Dunne	✓	
Mr Brian Duvoisin	✓	✓
Mr Brian and Mrs Nina Earl	✓	✓
Eastern Alliance for Greenhouse Action		✓
Ms Sonja Ekberg	✓	
Mr David Ellis	✓	
Emerald Village Committee	✓	✓
Environment East Gippsland Inc		✓

NAME	PERIOD 1	PERIOD 2
Mrs Sandra and Mr Laurie Fenton	✓	
Mr William Ferguson	✓	
Ms Elly Fink	✓	
Food Alliance—WHO Collaborating Centre for Obesity Prevention		✓
Cr Cheryl Forge and Cr Frank Penhalluriack		✓
Ms Lorna Foster	✓	
Four Wheel Drive Victoria	✓	
Ms Katie Fowles	✓	
Ms Julie Francis	✓	
Frankston Beach Association	✓	
Frankston City Council		✓
Friends of Banyule		✓
Friends of Braeside Park	✓	
Friends of Caulfield Park	✓	✓
Friends of Damper Creek Reserve	✓	
Friends of Frankston Reservoir	✓	
Friends of Glen Huntly Reservoir	✓	
Friends of Greenwich Bay	✓	
Friends of Liverpool Road Retarding Basin	✓	
Friends of Merri Creek	✓	✓
Friends of Mullum Mullum Valley Inc	✓	
Friends of Scotchmans Creek and Valley Reserve	✓	✓
Friends of the Elms	✓	
Friends of the HV McKay Memorial Gardens	✓	
Friends of Wallan Creek	✓	
Friends of Warrandyte State Park	✓	
Friends of Westgate Park		✓
Friends of Yarra Valley Parks	✓	✓
Ms Irene Fullarton	✓	✓
Mr Roger Fyfe	✓	
DM Gartside	✓	
Mr Paul Gavin	✓	
Ms Cathy Giles		✓
Mrs Pat and Mr Jack Gleeson	✓	
Mr Paul Gleeson	✓	
Glen Eira City Council	✓	✓
Glen Eira Community Associations Inc	✓	
Glen Eira Environment Group Inc	✓	
Ms Roslyn Gold	✓	

NAME	PERIOD 1	PERIOD 2
Mr Alan Goode	✓	
Grace Park Residents Association		✓
Mr Walter Grahame	✓	✓
Greater Dandenong City Council	✓	✓
Green Wedges Coalition	✓	✓
Greenvale Residents Association Inc	✓	
Mr Stuart and Mrs Sue Hamilton	✓	
Mr Bill Hampel		✓
Hampton Park Community Renewal	✓	
Mr Chris Hand and Mrs Joanne Adams	✓	
Mr Richard Hawkey	✓	
Cyhtle Heal	✓	
Mrs Mary Healy		✓
Heritage Council of Victoria		✓
Mr Ross Hetherington	✓	
Mr Robert Hicks	✓	
Hobsons Bay City Council	✓	
Mr Peter Hodge	✓	
Dr Susan Hodson	✓	
Hogan Park Committee of Management Inc	✓	✓
Horse Riding Clubs Association of Victoria		✓
Hume City Council		✓
Inner South Metropolitan Mayors Forum	✓	
Jacksons Creek EcoNetwork	✓	
Mr Kit James		✓
Johns Hill Landcare Group Inc		✓
Mr Graham Jolly		✓
Keeping Manningham a Quality Place to Live In Inc	✓	
Kew Cottages Coalition	✓	✓
Ms Lydia Kinda	✓	
Kingston City Council		✓
Knox City Council	✓	
Ms Maria-Ann Kolovrat		✓
Mr Jeff Latter	✓	✓
Ms Lorys Lea	✓	
LeadWest		✓
Mr Shaun Leane	✓	
Ms Bronwyn Lewis	✓	
Mr Ray Lewis		✓

NAME	PERIOD 1	PERIOD 2
Mr Simon Lewis and Ms Mitzi McRae	✓	
Ms Glenda Lindsay		✓
Ms Pamela Lloyd	✓	
Mr Bill Lord and Ms Anika Van Hulsen		✓
Ms Kaye Mackay		✓
Ms Mary Madigan	✓	
Malvern East Group		✓
Manningham City Council	✓	✓
Maroondah Bushlinks	✓	
Mr John McKenzie	✓	
Ms Fiona McKinnon, Mr Rocco Adamo, Ms Rina Sherry and Ms Cathy Alexeeff	✓	
Mr Ken McLeod	✓	
Meander: A group caring for the Menzies Creek and Emerald Tourist Track		✓
Melbourne City Council	✓	✓
Melbourne Racing Club	✓	✓
Melbourne Water		✓
Melton Environment Group	✓	
Melton Shire Council		✓
Ms Angela Mercer	✓	
Merri and Edgars Creek Parkland Group	✓	
Merri Creek Management Committee	✓	✓
Mitcham Residents Association Inc	✓	
Monash City Council		✓
Ms Nancy, Mr Vince and Ms Andrea Montesano and Mr Cameron Giles	✓	
Ms Belinda Moody	✓	
Moonee Valley City Council		✓
Mordialloc Beaumaris Conservation League	✓	✓
Moreland City Council	✓	✓
Mornington Peninsula Ratepayers and Residents Association Inc		✓
Mornington Peninsula Shire Council		✓
Dr Geoff Mosley		✓
Dr Lotte Mulligan	✓	
Municipal Association of Victoria		✓
Ms Sue Murray	✓	
Ms Sonia Mussawir	✓	
Dr Chili Naparstek	✓	
National Trust of Australia (Victoria)		✓
Ms Anne Neri	✓	
Ms Frances Newell	✓	

NAME	PERIOD 1	PERIOD 2
Newlands Community Alliance	✓	
Nillumbik Shire Council	✓	✓
Ms Rita Nobes	✓	
Notting Hill Community Association	✓	
Ms Michelle Ottrey	✓	
Parks Victoria	✓	✓
Ms Dot Peak	✓	
Mr Frank Penhalluriack	✓	
Ms Carmel Perrott		✓
Petcare Information and Advisory Service	✓	
Planning Backlash Inc.	✓	✓
Port of Melbourne Corporation		✓
Port Phillip City Council		✓
Port Phillip Conservation Council Inc		✓
Ms Trish Pringle	✓	
Mr Graham Proctor	✓	✓
Prospectors and Miners Association of Victoria		✓
Protectors of Public Lands Victoria Inc	✓	✓
Mr Trevor Ratcliffe	✓	
Mr Don Reid	✓	
Rivergardens Owners Corporation	✓	
Mr Roger and Ms Margaret Rush	✓	
Save Albert Park	✓	✓
Save Coomoora Reserve Coalition		✓
Save Knoxfield		✓
Save Williamstown		✓
Ms Katrina Sawyer	✓	
Mr Philip and Ms Margaret Scardilli	✓	
Mr Lawrence Seyers	✓	
Ms Anne Sgro	✓	
Ms Andrea Sharam	✓	
Mr Gerald Sherry	✓	✓
Mr Raymond Smith	✓	
Mr Tony Smith		✓
Dr Betty Snowden	✓	
Mr Peter Sokolowski	✓	
Stormwater Victoria		✓
Sunbury Conservation Society	✓	
Sunshine and District Historical Society Inc	✓	

NAME	PERIOD 1	PERIOD 2
Sunshine Residents and Ratepayers Association Inc		✓
Sustainable Population Australia (Victorian Branch)	✓	✓
Ms Irene Tancock	✓	
The 3068 Group	✓	✓
The East Melbourne Group Inc	✓	
Mr Matthew Thomas	✓	
Thompson Berril Landscape Design and Environment and Land Management P/L		✓
Mr Kelvin Thomson MP	✓	
Tourism Victoria	✓	
Ms Deborah Tout-Smith	✓	
Ms Deborah Tremayne	✓	
Mr Jeff Triplett		✓
Trust For Nature (Victoria)		✓
Mr Ken Turner	✓	
VicRoads		✓
Victorian Catchment Management Council		✓
Victorian Eco-Innovation Lab (VEIL), University of Melbourne	✓	
Victorian National Parks Association	✓	
Victorian National Parks Association, Environment Victoria and The Wilderness Society		✓
VRFish	✓	
Warringal Conservation Society		✓
Ms Rosemary West		✓
West of Elgar Residents Association Inc	✓	✓
Western Melbourne Catchments Network Inc	✓	
Ms Helen Wheelahan	✓	
B. Wheelahan	✓	
Mr Chris White	✓	
Mr David Whitehead	✓	
Whitehorse City Council	✓	✓
Whittlesea City Council		✓
Williamstown, Newport and Spotswood Residents Association	✓	
Mr Steve Wilson		
Woori Yallock Creek Park Alliance	✓	✓
Yarra City Council	✓	✓
Yarra Park Association	✓	
Yarra River Action Alliance		✓
Yarra Riverkeepers Association Inc		✓
Mr Rob Youl		✓

APPENDIX 2

PROTECTED AREAS IN THE INVESTIGATION AREA

PROTECTED AREA	MUNICIPALITY	AREA (HA)^
National park		
Churchill National Park	Casey	271.8
Dandenong Ranges National Park (part)	Knox	17.6 (total 3,540)
Kinglake National Park (part)	Nillumbik, Whittlesea	10,094.9 (total 23,175)
Organ Pipes National Park	Brimbank, Hume	152.7
State park		
Bunyip State Park (part)	Cardinia	13,074.6 (total 16,655)
Lerderderg State Park (part)	Melton	645.8 (total 20,185)
Warrandyte State Park	Manningham, Nillumbik	681.2
Marine national park and sanctuary		
Jawbone Marine Sanctuary (part)	Hobsons Bay	3.9 (total 30)
Yaringa Marine National Park (part)	Casey	89.9 (total 980)
Trust for Nature protected area		
Bungalook Conservation Reserve	Maroondah	2.2
Dexter's Bush	Maroondah	0.9
Eltham Copper Butterfly Reserve	Nillumbik	0.7
Harbury	Cardinia	22.4
Uambi	Maroondah	3.7
Willis Nature Park	Nillumbik	81.8
Nature conservation reserve		
Adams Creek Nature Conservation Reserve (part) (C41)*	Cardinia	57.5 (total 400)
Altona Nature Conservation Reserve (unreserved)	Hobsons Bay	5.4
Angliss Native Grasslands	Wyndham	22.4
Banchory Grove Nature Conservation Reserve	Melton	21.9
Beaconsfield Nature Conservation Reserve	Cardinia	171.8
Boomers Nature Conservation Reserve (C28)*	Nillumbik	27.8
Cairnlea Estate Grassland Reserve	Brimbank	37.5
Cardinia Creek Nature Conservation Reserve	Cardinia	34.3
Central Creek Grasslands Reserve	Darebin	7.0
Cherry Street Grasslands	Darebin	13.6
Cooper Street Grasslands	Hume, Whittlesea	117.1
Craigieburn Grassland	Hume, Whittlesea	345.4
Cranbourne Wetlands	Casey	25.1
Deer Park Grasslands	Melton	95.2
Derrimut Grasslands	Brimbank	164.9

PROTECTED AREA	MUNICIPALITY	AREA (HA)^
Gilbertson Grassland	Brimbank	10.2
Gresswell Forest Wildlife Reserve	Darebin	46.1
Gresswell Habitat Link	Darebin	17.1
Gresswell Hill Reserve	Darebin	8.9
Hochkins Ridge Flora Reserve	Maroondah	18.7
Holden Flora Reserve	Hume	90.7
Jawbone Flora and Fauna Reserve	Hobsons Bay	20.7
Langwarrin Flora and Fauna Reserve	Frankston	215.5
Laverton North Grasslands	Hobsons Bay	48.5
Long Forest Flora and Fauna Reserve (part)	Melton	31.2
		(total 510)
Melton Gilgai Woodlands	Melton	33.2
Mount Cottrell Nature Conservation Reserve	Melton	44.3
Mount Derrimut Nature Conservation Reserve	Brimbank	30.0
Mount Ridley Grasslands	Hume	142.5
Nillumbik Native Flora Reserve	Nillumbik	1.1
North Western Port Nature Conservation Reserve (part) (C14; C40)*	Casey, Cardinia	689.4
		(total 1,810)
Pauline Toner Butterfly Reserve	Nillumbik	2.1
Queenstown Native Flora Reserve	Nillumbik	1.6
Smiths Gully and Peter Franke Nature Conservation Reserve	Nillumbik	15.4
St Andrews Nature Conservation Reserve	Nillumbik	11.1
Sweetwater Creek Reserve (Yuille and Foot Streets)	Frankston	0.15
The Pines Flora and Fauna Reserve	Frankston	247.7
Upper Beaconsfield (Critchley Parker Junior) Reserve	Cardinia	34.6
Warrandyte Wildflower Reserve	Manningham	0.9
Warrandyte-Kinglake Nature Conservation Link	Nillumbik	655.9
Yellingbo State Nature Reserve (part)	Cardinia	1.9
		(total 671)
Natural features reserve – Natural and scenic features area		
Bulla Landscape Preservation Reserve	Hume	5.0
Seven Acre Rock Scenic Reserve (part) (G41)*	Cardinia	21.0
		(total 47)
Mullum Mullum Park	Manningham, Maroondah, Whitehorse	35.3
Natural features reserve - Streamside area		
Altona Meadows Natural Features Reserve	Hobsons Bay	20.5
Bulla Bulla Streamside Reserve (K52)*	Hume	0.9
Bunyip Streamside Reserve (G13)*	Cardinia	4.7
Cannibal Creek Streamside Reserve (G25)*	Cardinia	25.0
Cobbledicks Ford Streamside Reserve	Wyndham	25.2
Jacksons Creek Streamside Reserve (K39)*	Hume	10.1
Kororoit Creek (Clarke Road) Streamside Reserve (K35)**	Melton	7.7

PROTECTED AREA	MUNICIPALITY	AREA (HA)^
Kororoit Creek (Holden Road) Streamside Reserve	Melton	12.8
Kororoit Creek (Melton Highway) Streamside Reserve	Melton	1.9
Mernda Streamside Reserve	Whittlesea	5.5
Werribee River Streamside Reserve	Melton	9.8
Natural features reserve- Bushland area		
Baxter Park (Baxters Flat) Bushland Area	Frankston	21.1
Bradshaw Reserve (Parkdale)	Kingston	1.7
Bunarong Park (Frankston)	Frankston	9.6
Bunyip Bushland Reserve (G212)*	Cardinia	0.4
Burke Road Billabong	Boroondara	8.0
Chapmans Road Reserve (Toolern Vale)	Melton	3.5
Clematis Park (Emerald)	Cardinia	1.5
Cockatoo Natural Interest Reserve	Cardinia	2.3
Eltham Water Supply Reserve (G143)*	Nillumbik	1.6
Hogan Park Bushland Reserve (Emerald)	Cardinia	2.1
Forensic Drive Reserve (Macleod)	Darebin	2.4
Frankston Reservoir Natural Features Reserve	Frankston	90.6
Garden Estate (Cockatoo)	Cardinia	8.3
Garfield Bushland Reserve	Cardinia	0.8
Gembrook (Bessie Creek Rd) Bushland Reserve	Cardinia	11.4
Gembrook (Blackwood Lane) Bushland Reserve (G205)*	Cardinia	3.8
Gembrook (Boyd Rd) Bushland Reserve	Cardinia	4.0
Gembrook (Mann Rd) Bushland Reserve	Cardinia	20.5
Gembrook (Shepherd Creek West) Bushland Reserve (G203)*	Cardinia	1.6
Gembrook Park Bushland Reserve (G204)*	Cardinia	24.7
Gilwell Park Bushland Reserve (G179)*	Cardinia	73.5
Haileybury College Camp Site (Wright Forest, Cockatoo) (G202)*	Cardinia	3.5
Heath Hill Conservation Reserve	Cardinia	10.1
Kalinda Urban Forest (Ringwood)	Maroondah	4.4
Kangaroo Ground South Bushland Reserve (Henley) (G151)*	Nillumbik	0.7
Kinglake West Bushland Reserve	Whittlesea	2.1
Koolunga Native Reserve (Crown land only)	Knox	0.4
Lang Lang Bushland Reserve (I96)*	Cardinia	11.4
Langwarrin Bushland Reserve	Frankston	1.7
Long Gully Bushland Reserve (G146)*	Nillumbik	7.5
Long Hollow Heathland (Beaumaris)	Bayside	2.4
Lower Eltham Park Flora Reserve (G136)*	Nillumbik	4.9
Mount Majestic Bushland Reserve	Cardinia	3.4
Nar Nar Goon Bushland Reserve	Cardinia	18.2
Neil Douglas Reserve	Nillumbik	9.5
Pakenham Bushland Reserve	Cardinia	11.2
Panton Hill (Bakehouse Rd) Bushland Reserve (G145)*	Nillumbik	2.2
Panton Hill (Merritts Rd) Bushland Reserve (G144)*	Nillumbik	0.8

PROTECTED AREA	MUNICIPALITY	AREA (HA) [^]
Plenty Gorge Bushland Reserve (South Morang)	Whittlesea	8.5
Queenstown Bushland Reserve	Nillumbik	40.2
Research (Reynolds Rd) Bushland Reserve (G138)*	Nillumbik	0.8
RJ Chambers 'Flora and Fauna' Reserve	Cardinia	112.0
Seaford Wetlands (Crown land only)	Frankston	21.0
Smiths Gully Bushland Reserve (G147)*	Nillumbik	0.8
Smiths Gully (Joyces Rd) Bushland Reserve	Nillumbik	0.5
St Andrews Bushland Reserve	Nillumbik	4.7
St Andrews Protected Forest	Nillumbik	21.0
Stoney Creek Bushland Reserve (Beaconsfield Upper)	Cardinia	5.9
Symonds Road Bushland Reserve (Avonsleigh)	Cardinia	2.0
Temple Ridge Reserve (Wattle Glen) (G141)*	Nillumbik	7.4
Warneet (Balaka St) Bushland Reserve	Casey	2.5
Warneet (Iluka St) Bushland Reserve	Casey	1.4
Warneet Nature Reserve	Casey	34.2
Wattle Creek Bushland Reserve (Avonsleigh)	Cardinia	1.7
Weeroona Aboriginal Cemetery bushland buffer	Hume	12.4
Wright Forest (Avonsleigh) (G202)*	Cardinia	111.1
Yangardook Bushland Reserve (I108)*	Melton	50.0
Yering Gorge Bushland Reserve (G60)*	Nillumbik	70.1
Reference area		
Diamond Creek Reference Area	Cardinia	330
Disappointment Reference Area	Whittlesea	1090
Joey Creek Reference Area	Whittlesea	250
Yan Yean (north) Reference Area	Whittlesea	100
Yan Yean (south) Reference Area	Whittlesea	300
Heritage river		
Yarra River Heritage River (part)	Nillumbik, Manningham	345 (total 1,065)
Recommended additions/ new reserves		
Kinglake National Park	Whittlesea, Nillumbik	2,590
Bunyip State Park	Cardinia	62
Point Cook Coastal Park	Hobsons Bay, Wyndham	961
Bandicoot Corner Bushland Area	Cardinia	8.3
Edithvale Wetland Bushland Area	Kingston	4.7
Seaford Wetlands Bushland Area	Frankston	5.4
Beaumaris Cliffs Geological and Geomorphological Features Area	Bayside	3.3
Yallock Creek Streamside Area	Cardinia	6.2

Notes:

[^] Total area for protected area is shown in brackets where it extends beyond the investigation area.

* All or part of these sites are not formally reserved for conservation purposes, but are managed in accordance with the government-accepted Land Conservation Council recommendation. The bracketed letter/number (e.g. G60) refers to the relevant LCC recommendation (see www.veac.vic.gov.au for LCC reports).

** The beds and banks of Kororoit Creek (Clarke Road) are not reserved.

APPENDIX 3

EXTENT OF ECOLOGICAL VEGETATION CLASSES (EVCs) IN THE RECOMMENDED ADDITIONS TO THE PROTECTED AREA SYSTEM

The table in this appendix outlines the extent of EVCs in VEAC's recommended additions to Victoria's protected area system as described in chapter 7 of this report. The table shows the pre-1750 and current extent of these EVCs in the investigation area and in each relevant bioregion. It also shows the extent and percentage of EVCs in protected areas with and without the recommended additions.

Bioregions in which recommended protected area additions are located are Gippsland Plain, Highlands-Southern Fall and Victorian Volcanic Plain. None of these three bioregions is wholly or largely within the Metropolitan Melbourne Investigation area.

Information on the pre-1750 and current extent of EVCs within the investigation area uses the most recent 2005 Department of Sustainability and Environment data.

Preceding the table is a detailed key for the column headings and symbols used in the table and definitions for the Bioregional Conservation Status applied to EVCs.

Key

Columns 1 and 2: Ecological Vegetation Classes (EVCs) number and name for each bioregion

Identification numbers and names of EVCs, including complexes and mosaics, listed alphabetically for each bioregion.

Column 3: Bioregional conservation status (BCS)

Bioregional conservation status of each Ecological Vegetation Class in the three bioregions. The percentage remaining is a key factor in assigning EVCs to status categories:

E = endangered

V = vulnerable

D = depleted

LC = least concern

Bioregional conservation status is based on the latest advice from DSE (November 2007). See www.dse.vic.gov.au for more information.

Columns 4 and 11: Pre-1750 extent

Total estimated extent in hectares of each EVC in the relevant bioregion prior to European settlement for the investigation area (column 4) and for the entire bioregion (column 11).

Columns 5 and 12:

Current extent (public and private land)

Total current extent in hectares of each EVC—that is, that part of the pre-1750 distribution where indigenous vegetation is currently present—for the investigation area (column 5) and the entire bioregion (column 12).

Columns 6 and 13: Current extent in protected areas

Total current extent in hectares of each EVC in protected areas in the investigation area (column 6) and the entire bioregion (column 13).

Columns 7 and 14: Current extent on other public land

Total current extent in hectares of each EVC on public land outside the protected area system in the investigation area (column 7) and the entire bioregion (column 14).

Columns 8 and 15: Percentage of pre-1750 extent in current protected area system

Percentage of pre-1750 extent (column 4, column 11) of each EVC in the current protected area system (column 6, column 13) in the investigation area (column 8) and the entire bioregion (column 15).

Column 9: Recommended extent in protected areas

Total area in hectares of each EVC in protected areas in the investigation area and the recommended additions outlined in chapter 7 of this final report.

Columns 10 and 16: Percentage of pre-1750 extent in recommended protected area system

Percentage of pre-1750 extent of each EVC in protected areas and the recommended additions in the investigation area (column 9) and the entire bioregion (column 16).

Areas in columns 4 to 7, 9 and 11 to 14 have been rounded to the nearest whole number.

			INVESTIGATION AREA							ENTIRE BIOREGION						
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
EVC No.	Ecological Vegetation Classes (EVCs)	BCS	Pre-1750 extent (ha)	Current extent (ha)	Current extent in protected areas (ha)	Current extent on other public land (ha)	% of pre-1750 extent in current protected areas	Recommended protected area extent (ha)	% of pre-1750 extent in recommended protected areas	Pre-1750 extent (ha)	Current extent (ha)	Current extent in protected areas (ha)	Current extent on other public land (ha)	% of pre-1750 extent in current protected areas	% of pre-1750 extent in recommended protected areas	
GIPPSLAND PLAIN																
159	Clay Heathland/Wet Heathland/Riparian Scrub Mosaic	D	460	241	179	1	39.0	181	39.2	1,765	635	232	4	13.1	13.2	
919	Coastal Headland Scrub/Coast Banksia Woodland Mosaic	V	342	60	32	22	9.5	34	10.0	357	63	33	23	9.2	9.9	
125	Plains Grassy Wetland	E	4,166	297	6	20	0.1	8	0.2	5,317	406	10	28	0.2	0.2	
53	Swamp Scrub	E	47,235	2,422	26	146	0.1	28	0.1	152,442	27,350	8,815	1,264	5.8	5.8	
83	Swampy Riparian Woodland	E	7,387	1,477	234	248	3.2	242	3.3	27,465	5,280	1,139	398	4.1	4.2	
HIGHLANDS-SOUTHERN FALL																
159	Clay Heathland/Wet Heathland/Riparian Scrub Mosaic	D	1,682	1,399	1,189	16	70.7	1,198	71.2	4,039	3,267	2,472	165	61.2	61.4	
793	Damp Heathy Woodland	D	8,808	5,053	2,616	693	29.7	2,651	30.1	12,519	6,622	2,892	807	23.1	23.4	
22	Grassy Dry Forest	LC	20,702	12,539	981	1,487	4.7	1,959	9.5	42,679	33,268	9,070	9,954	21.3	23.5	
175	Grassy Woodland	D	2,842	462	11	120	0.4	53	1.9	9,026	5,538	2,046	798	22.7	23.1	
20	Heathy Dry Forest	LC	3,300	3,229	2,440	361	73.9	2,547	77.2	40,569	40,226	16,443	22,910	40.5	40.8	
23	Herb-rich Foothill Forest	LC	11,478	8,845	2,540	1,196	22.1	2,569	22.4	115,462	107,859	46,726	48,359	40.5	40.5	
16	Lowland Forest	LC	16,754	10,839	2,762	1,322	16.5	2,765	16.5	102,819	74,065	10,603	33,524	10.3	10.3	
55	Plains Grassy Woodland	E	1,350	327	0	133	0.0	80	5.9	2,083	426	1	136	0.1	3.9	
18	Riparian Forest	LC	5,065	3,785	1,431	563	28.2	1,516	29.9	32,885	28,513	10,294	13,550	31.3	31.6	
45	Shrubby Foothill Forest	LC	7,163	4,225	1,406	355	19.6	1,458	20.3	65,212	56,230	10,904	38,016	16.7	16.8	
53	Swamp Scrub	E	660	153	0	26	0.0	3	0.5	1,036	270	5	46	0.5	0.8	
47	Valley Grassy Forest	V	19,447	7,721	882	502	4.5	1,151	5.9	33,636	11,344	1,543	833	4.6	5.4	
VICTORIAN VOLCANIC PLAIN																
653	Aquatic Herbland	E	145	67	9	17	6.5	26	18.0	194	101	9	17	4.6	13.5	
858	Coastal Alkaline Scrub	E	367	34	0	29	0.0	22	6.0	377	38	0	29	0.0	5.9	
9	Coastal Saltmarsh	V	2,238	1,042	11	616	0.5	537	24.0	2,301	1,059	15	619	0.7	23.5	
22	Grassy Dry Forest	D	440	332	0	4	0.0	4	0.8	6,084	1,530	3	274	0.0	0.1	
175	Grassy Woodland	E	4,250	627	16	24	0.4	22	0.5	39,900	4,662	72	276	0.2	0.2	
692	Mangrove Shrubland/Coastal Saltmarsh/Berm Grassy Shrubland/Estuarine Flats Grassland Mosaic	E	71	39	0	28	0.0	28	39.4	72	39	0	28	0.0	38.9	
132	Plains Grassland	E	111,179	22,914	596	273	0.5	673	0.6	868,985	65,244	1,291	1,435	0.1	0.2	
55	Plains Grassy Woodland	E	57,236	6,161	114	492	0.2	355	0.6	716,741	59,868	1,494	2,534	0.2	0.2	

APPENDIX 4

PUBLIC OPEN SPACE INVENTORY DATA

Public open space ownership in the investigation area

MUNICIPALITY	AREA (HA)			Total
	Crown	Public authority	Local Council	
Banyule (M)	306.8	9.2	589.0	905.0
Bayside (M)	175.9	1.2	264.2	441.3
Boroondara (M)	160.1	6.7	411.4	578.2
Brimbank (O)	767.7	67.9	1,021.7	1,857.2
Cardinia (G)	18,719.5	263.4	771.8	19,754.7
Casey (G)	2,205.2	487.2	1,237.8	3,930.2
Darebin (M)	315.5	42.2	421.9	779.6
Frankston (O)	891.6	149.7	525.1	1,566.5
Glen Eira (M)	62.9	0.1	116.6	179.6
Greater Dandenong (O)	116.9	344.4	448.8	910.2
Hobsons Bay (M)	768.7	271.4	347.1	1,387.2
Hume (G)	1,405.0	201.1	1,523.4	3,129.6
Kingston (M)	511.8	252.8	476.0	1,240.6
Knox (O)	1,250.7	165.4	777.1	2,193.2
Manningham (M)	1,267.7	38.1	714.7	2,020.5
Maribyrnong (M)	114.0	1.7	142.6	258.3
Maroondah (O)	61.0	53.6	501.7	616.3
Melbourne (I)	538.8	1.2	28.9	569.0
Melton (G)	1,007.3	11.4	1,250.7	2,269.4
Monash (M)	257.2	55.1	464.7	777.0
Moonee Valley (M)	156.2	17.1	344.5	517.8
Moreland (M)	39.3	51.3	404.0	494.6
Nillumbik (O)	7,721.0	59.2	702.0	8,482.1
Port Phillip (I)	377.5	0.1	10.5	388.1
Stonnington (I)	25.5	4.9	142.2	172.6
Whitehorse (M)	87.9	47.1	504.8	639.7
Whittlesea (G)	7,075.9	218.8	879.3	8,174.0
Wyndham (G)	1,715.7	41.0	789.2	2,545.9
Yarra (I)	267.9	1.4	33.1	302.4
Total	48,371.4	2,864.5	15,845.0	67,080.8

Notes:

I – inner; M – middle; O – outer; G – growth municipality.

Public open space ownership within the Urban Growth Boundary

MUNICIPALITY	AREA (HA)			
	Crown	Public authority	Local Council	Total
Banyule (M)	306.8	9.2	589.0	905.0
Bayside (M)	175.9	1.2	264.2	441.3
Boroondara (M)	160.1	6.7	411.4	578.2
Brimbank (O)	660.4	67.9	960.7	1,688.9
Cardinia (G)	93.8	44.4	272.7	410.9
Casey (G)	515.7	473.0	1,016.2	2,004.8
Darebin (M)	315.5	42.2	421.9	779.6
Frankston (O)	297.0	69.4	382.1	748.6
Glen Eira (M)	62.9	0.1	116.6	179.6
Greater Dandenong (O)	78.2	85.7	332.3	496.3
Hobsons Bay (M)	365.5	174.1	346.6	886.2
Hume (G)	356.1	167.2	1,261.2	1,784.5
Kingston (M)	163.8	246.6	318.7	729.1
Knox (O)	640.2	149.4	763.6	1,553.2
Manningham (M)	467.6	31.7	582.4	1,081.8
Maribyrnong (M)	114.0	1.7	142.6	258.3
Maroondah (O)	61.0	43.3	492.4	596.7
Melbourne (I)	538.8	1.2	28.9	569.0
Melton (G)	176.0	0.6	750.3	926.8
Monash (M)	257.2	55.1	464.7	777.0
Moonee Valley (M)	156.2	17.1	344.5	517.8
Moreland (M)	39.3	51.3	404.0	494.6
Nillumbik (O)	86.3	7.3	247.9	341.5
Port Phillip (I)	377.5	0.1	10.5	388.1
Stonnington (I)	25.5	4.9	142.2	172.6
Whitehorse (M)	87.9	47.1	504.8	639.7
Whittlesea (G)	446.0	147.1	623.0	1,216.1
Wyndham (G)	163.7	41.0	693.6	898.2
Yarra (I)	267.9	1.4	33.1	302.4
Total	7,456.9	1,987.8	12,922.2	22,367.0

Notes:

1. I – inner; M – middle; O – outer; G – growth municipality
2. 'Within Urban Growth Boundary' refers to those areas within the Urban Growth Boundary that are also in the investigation area.

Percentage of public open space in each open space category in the investigation area

INVESTIGATION AREA		
CATEGORY	AREA (HA)	PERCENTAGE OF TOTAL PUBLIC OPEN SPACE
Protected area	29487.0	44.0
Natural and semi-natural area	22474.2	33.5
Parkland and garden	6504.2	9.7
Organised recreation area	7742.5	11.5
Services and utilities area	867.2	1.3
Civic square and promenade	5.8	0.01
Total	67,080.8	100.00
WITHIN URBAN GROWTH BOUNDARY		
CATEGORY	AREA (HA)	PERCENTAGE OF TOTAL PUBLIC OPEN SPACE)
Protected area	1,490.3	6.7
Natural and semi-natural area	8,351.2	37.3
Parkland and garden	5,324.1	23.8
Organised recreation area	6,487.4	29.0
Services and utilities area	708.5	3.2
Civic square and promenade	5.4	0.02
Total	22,367.0	100.00

Notes:

1. Table 5.1 in chapter 5 provides a definition of each category of public open space in the investigation area.
2. 'Within Urban Growth Boundary' refers to those areas within the Urban Growth Boundary that are also in the investigation area.

Proportion of public open space in each municipality

MUNICIPALITY	INVESTIGATION AREA		WITHIN URBAN GROWTH BOUNDARY	
	AREA (HA)	PERCENTAGE OF MUNICIPAL AREA	AREA (HA)	PERCENTAGE OF MUNICIPAL AREA
Banyule (M)	905.0	15.2	905.0	15.2
Bayside (M)	441.3	11.8	441.3	11.8
Boroondara (M)	578.2	9.6	578.2	9.6
Brimbank (O)	1,857.2	20.5	1,688.9	19.5
Cardinia (G)	19,754.7	42.1	410.9	5.3
Casey (G)	3,930.2	16.4	2,004.8	9.4
Darebin (M)	779.6	15.5	779.6	15.5
Frankston (O)	1,566.5	15.7	748.6	9.3
Glen Eira (M)	179.6	4.7	179.6	4.7
Greater Dandenong (O)	910.2	11.5	496.3	7.9
Hobsons Bay (M)	1,387.2	24.1	886.2	17.3
Hume (G)	3,129.6	14.2	1,784.5	10.1
Kingston (M)	1,240.6	16.6	729.1	12.5
Knox (O)	2,193.2	21.9	1,553.2	17.6
Manningham (M)	2,020.5	24.6	1,081.8	15.6
Maribyrnong (M)	258.3	9.9	258.3	9.9
Maroondah (O)	616.3	11.3	596.7	11.0
Melbourne (I)	569.0	16.6	569.0	16.6
Melton (G)	2,269.4	10.3	926.8	5.1
Monash (M)	777.0	9.9	777.0	9.9
Moonee Valley (M)	517.8	12.2	517.8	12.2
Moreland (M)	494.6	10.3	494.6	10.3
Nillumbik (O)	8,482.1	56.9	341.5	9.4
Port Phillip (I)	388.1	20.1	388.1	20.1
Stonnington (I)	172.6	6.7	172.6	6.7
Whitehorse (M)	639.7	10.3	639.7	10.3
Whittlesea (G)	8,174.0	34.2	1,216.1	8.9
Wyndham (G)	2,545.9	9.1	898.2	5.1
Yarra (I)	302.4	16.2	302.4	16.2
Total	67,080.8	-	22,367.0	-
Average	-	17.2	-	11.5

Notes:

1. I – inner; M – middle; O – outer; G – growth municipality
2. 'Within Urban Growth Boundary' refers to those areas within the Urban Growth Boundary that are also in the investigation area.
3. 'Municipal area' excludes areas zoned in planning schemes as industrial, green wedge, farming and rural conservation zones.

Public open space per capita (hectares per thousand people) in each municipality, 2010

MUNICIPALITY	INVESTIGATION AREA		WITHIN URBAN GROWTH BOUNDARY	
	AREA (HA)	PUBLIC OPEN SPACE (ha)/1000 PEOPLE	AREA (HA)	PUBLIC OPEN SPACE (ha)/1000 PEOPLE
Banyule (M)	905.0	7.3	905.0	7.3
Bayside (M)	441.3	4.5	441.3	4.5
Boroondara (M)	578.2	3.4	578.2	3.4
Brimbank (O)	1,857.2	9.8	1,688.9	8.9
Cardinia (G)	19,754.7	269.4	410.9	5.6
Casey (G)	3,930.2	15.4	2,004.8	7.8
Darebin (M)	779.6	5.5	779.6	5.5
Frankston (O)	1,566.5	12.0	748.6	5.7
Glen Eira (M)	179.6	1.3	179.6	1.3
Greater Dandenong (O)	910.2	6.6	496.3	3.6
Hobsons Bay (M)	1,387.2	15.8	886.2	10.1
Hume (G)	3,129.6	18.2	1,784.5	10.4
Kingston (M)	1,240.6	8.3	729.1	4.9
Knox (O)	2,193.2	14.0	1,553.2	7.4
Manningham (M)	2,020.5	17.0	1,081.8	9.1
Maribyrnong (M)	258.3	3.5	258.3	3.5
Maroondah (O)	616.3	5.8	596.7	5.6
Melbourne (I)	569.0	5.9	569.0	5.9
Melton (G)	2,269.4	21.2	926.8	7.7
Monash (M)	777.0	4.4	777.0	4.4
Moonee Valley (M)	517.8	4.6	517.8	4.6
Moreland (M)	494.6	3.3	494.6	3.3
Nillumbik (O)	8,482.1	132.2	341.5	5.3
Port Phillip (I)	388.1	4.0	388.1	4.0
Stonnington (I)	172.6	1.7	172.6	1.7
Whitehorse (M)	639.7	4.1	639.7	4.1
Whittlesea (G)	8,174.0	52.7	1,216.1	7.8
Wyndham (G)	2,545.9	16.3	898.2	5.7
Yarra (I)	302.4	3.8	302.4	3.8
Total	67,080.8	-	22,367.0	-
Median	-	6.6	-	5.5

Notes:

1. I – inner; M – middle; O – outer; G – growth municipality

2. The 2010 population data is sourced from Australian Bureau of Statistics *Regional population growth, Australia, 2009-10*².

APPENDIX 5

CURRENT REGIONAL AND METROPOLITAN PARKS

PARK	AREA (ha) [^]
Regional park	
Kurth Kiln Regional Park (part)	1,247.3 (total 3,430)
Lysterfield Park (part)	655.4 (total 1,397)
Woodlands Historic Park	820.8
Plenty Gorge Parklands	1,148.1
Metropolitan park	
Altona Coastal Park	67.3
Braeside Park ¹	293.2
Cardinia Creek Parklands	230.6
Dandenong Valley Parklands	848.5
Karkarook Park	37.8
Lower Maribyrnong Parklands (includes Burndap Park, Pipemakers Park and Footscray Park)	179.3
Maribyrnong Valley Parklands (Brimbank Park)	357.0
Merri Creek Parklands (includes Galada Tamboore) ²	107.0
Point Cook Coastal Park and Cheetham Wetlands ³	847.7
Police Paddocks ¹	418.4
Truganina Wetlands Coastal Park ³	94.3
Wattle Park ¹	38.0
Werribee River Regional Park	229.0
Yarra Bend Park ¹	200.1
Yarra Valley Parklands (includes Yarra Valley Metropolitan Park, Banksia Park, Birrurung Park, Yarra Flats area, Pridmore Park, Westerfolds Park)	1064.2

[^] Total area is shown in brackets where park extends beyond the investigation area.

Notes:

1. Public golf courses adjoining or within Braeside Park, Wattle Park, Yarra Bend Park and Police Paddocks are categorised as community use area – recreation area and not as metropolitan park.
2. Merri Creek Parklands metropolitan park consists of Crown land and Melbourne Water freehold land.
3. VEAC is recommending that a new Point Cook Coastal Park, comprising Point Cook Coastal Park and Cheetham Wetlands, Truganina Wetlands Coastal Park and the adjoining section of the Altona Foreshore Reserve, be established under Schedule 3 of the *National Parks Act 1975*.

