

PART C



PUBLIC LAND IN METROPOLITAN MELBOURNE

This part describes the public land within the investigation area and its uses, resources, values and management. This is the first time that ownership and use of public land has been identified for the inner and middle municipalities of metropolitan Melbourne.

4

PUBLIC LAND

The *Victorian Environmental Assessment Council Act 2001* defines public land broadly as Crown land and freehold land owned by public authorities (i.e. State government departments, agencies and bodies). It does not include local government owned freehold or Commonwealth land.

Public land offers a range of community uses and values. Nature conservation and appreciation is provided for in national, state and other parks, nature conservation reserves and some natural features reserves. Recreation occurs across most public land but is specifically provided for in regional and metropolitan parks, and smaller recreation reserves of various kinds such as sports fields. Public land also provides for government services or administration in public buildings including court houses, schools, government offices, hospitals, cemeteries, fire stations and police stations; and for community use in public halls, libraries, and public memorials. In addition, government infrastructure and utilities are located on public land including roads and railways, gas and electricity, piers, jetties, water supply and storage reservoirs, as well as sewage treatment plants. Detailed descriptions of current public land use are provided below in section 4.4 and shown on map A.

The public land estate across the investigation area is around 163,000 hectares (1,630 square kilometres) of a total 562,740 hectares (5,627.4 square kilometres). Approximately 131,000 hectares is Crown land and 32,000 hectares is public authority freehold land. The Crown land consists of 58,000 hectares identified by VEAC from detailed GIS mapping and a further 73,000 hectares of 'unparcellised' Crown road reserves. The area for unparcellised Crown road reserves is a broad estimate only. Subdivision roads owned by local councils are not included in this estimate. All public authority land was identified by VEAC using property details provided by public authorities and detailed GIS mapping.

For the first time, VEAC has brought together details of all land held by the Crown and more than 22 government departments and public authorities to provide a detailed picture of its use and its ownership across metropolitan Melbourne.

4.1 : Public land distribution across Melbourne

Metropolitan Melbourne extends disproportionately to the east of the central business district or the original settlement. West of Melbourne, the relatively flat, treeless volcanic plains tended to discourage early residential development in favour of industry and transport infrastructure, such as ports, airports, river side and maritime industrial use, public infrastructure and defence industries, sewerage systems, and pastoral uses. To the east, development followed the fertile catchments of the Yarra River and Dandenong Creek and throughout these settlements — now suburbs — public land supported a range of community uses.

Inner suburbs tend to reflect the boom years of suburban growth, with many substantial public buildings, including schools, public infrastructure such as railways, court houses and town halls as well as notable public parks and recreational areas.

Early and systematic protection of Crown land coastal foreshore and river banks occurred in 1881 with survey and permanent reservation of unalienated areas. Metropolitan Melbourne's river and stream sides and beaches, along with other important public places, reflect a strong community focus on both passive and active outdoor activities and recreation, particularly on public land.

Successive governments have supported educational, cultural, sporting and scientific institutions. Some important sites on public land in the Metropolitan Melbourne Investigation area are the Royal Exhibition Building, Melbourne Museum, National Gallery of Victoria, State Library, Parliament House, Royal Botanic Gardens, Immigration Museum (Old Customs House), and the Shrine of Remembrance.

In much of the outer suburban areas, the pastoral and agricultural land use is evident, including early settlements and farm complexes, along with bridges, quarries and other industrial sites. Public land is mostly related to water management and infrastructure in these regions. The exception is in townships where public land was generally set aside for recreation reserves, local community halls or mechanics' institutes, schools and parkland.

4.2 Public land ownership



Around Port Phillip Bay, public land reflects an emphasis on maritime activities and coastal recreation, particularly to the east of the city. There are numerous piers, jetties, marinas and coastal buildings associated with use of the bay and sandy foreshore for boating, fishing, and relaxing by the sea. Sea baths and coastal promenades, now including bike paths, are key features that have long attracted visitors to the seaside. Coastal Crown land along Western Port is less developed for recreation and provides a different experience. Shallow, often mangrove-lined, foreshores are less inviting for seaside leisure, but are important for nature conservation and provide habitat for many species of plants and animals.

National and state parks occur largely in the outer fringing ranges in the north and east of the investigation area. These places were not closely settled or cleared during early colonisation due to distance and the steep terrain.

In the Metropolitan Melbourne Investigation area the majority (approximately 65 per cent) of public land is Crown land. There are, however, large areas of public authority freehold land, particularly services and utilities areas, compared to other areas of Victoria.

The public land estate is highly fragmented in this investigation area with more than 75 per cent of all land blocks or parcels less than one hectare. At a detailed level, the public land estate is also relatively dynamic. Map B depicts public land ownership across the investigation area. However, there may be ongoing changes that are accounted for by the dynamic nature of land ownership particularly around large infrastructure projects in growth corridors and the inner city.

After the Crown, the largest public landholder in the investigation area is Melbourne Water with around 17,721 hectares or 20 per cent of the total public land estate. Its landholdings include sewage treatment plants (Western and Eastern), bulk water storage reservoirs and catchments, water supply, drainage and flood mitigation areas, and semi-natural wetlands such as Edithvale-Seafood Wetlands and Truganina Swamp, and streams.

Other major public landholdings in the investigation area are:

- ▶ VicRoads' extensive road infrastructure network
- ▶ VicTrack's extensive infrastructure network for delivery of rail services
- ▶ the Department of Education and Early Childhood Development's hundreds of schools and educational facilities across Melbourne.

Other public authorities own land to provide a range of community services. Many operate from both freehold land and Crown land reserved or allocated for a specific purpose.

- ▶ The Department of Human Services administers hospitals and related health care facilities on both Crown and freehold public land.
- ▶ The Metropolitan Fire and Emergency Services Board, Country Fire Authority and Ambulance Victoria deliver emergency response, community education and safety awareness, as well as providing advice to State and local government on emergency response and management on both Crown and freehold public land.
- ▶ The Victorian Government owns three retail water businesses in metropolitan Melbourne: South East Water, Yarra Valley Water and City West Water. These agencies provide water and sewerage services to residents of Melbourne. In addition Western Water and Southern Rural Water provide domestic water, irrigation and stock services, and some bulk water supply services.

- Other government departments own small areas of public land (including land held in title by the relevant minister) to deliver specific services.

A summary of public land holdings is provided below in table 4.1 and shown on map B.

Table 4.1
Public land ownership in the Metropolitan Melbourne Investigation area

PUBLIC LAND OWNER	AREA (HA)
Crown	58,137
Crown road reserve (estimated)	73,000
Melbourne Water	17,721
VicRoads	5,462
Department of Education and Early Childhood Development	2,363
VicTrack	2,322
Western Water	997
Port of Melbourne Corporation	494
South East Water	470
Southern Rural Water	250
Department of Health	195
Skills Victoria and other adult education services	153
Yarra Valley Water	151
Department of Planning and Community Development	142
Department Industry, Innovation and Regional Development	134
Trust for Nature	112
Department of Human Services	60
City West Water	30
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	89,293
Total extent of public land in the investigation area including estimated Crown road reserves	162,293

Notes:

1. Public land owner includes 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. VicUrban and Department of Human Services Office of Housing owned developments (with the exception of Office of Housing high-rise apartment buildings) are not included in public land calculations.
3. Areas of Crown land administered by the Department of Treasury and Finance (DTF) are included in the table as DTF land.

4.3 Previous public land investigations of the Melbourne area

Since 1970, the Land Conservation Council (LCC) and successor bodies, the Environment Conservation Council (ECC) and now VEAC, have conducted systematic public land use investigations across the State. These earlier studies addressed many of the same issues of balanced use of public land that are relevant today. The recommendations of these studies and investigations, once approved by Government, provide the framework for public land use and management in Victoria.

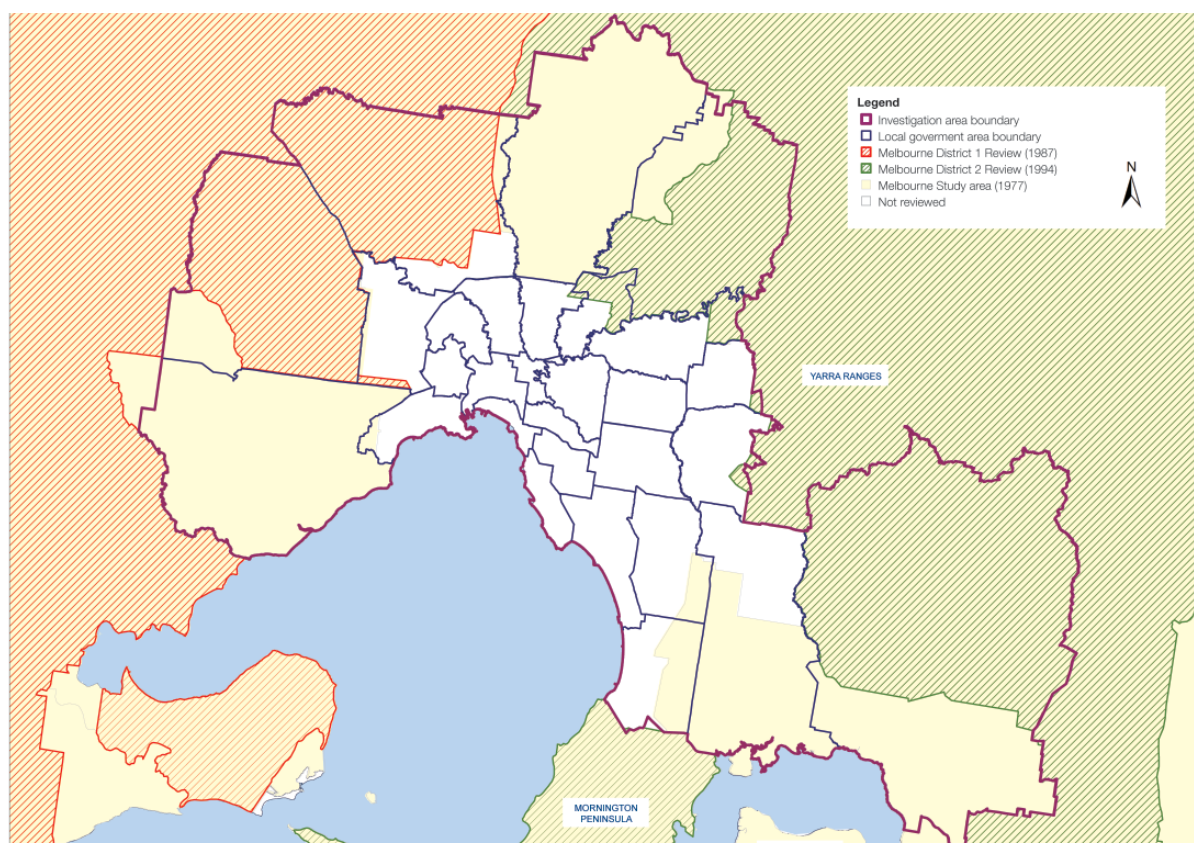
Outer portions of the Metropolitan Melbourne Investigation area were covered in one of the first LCC studies of the Melbourne Area completed in 1977.¹⁵¹ Two regions have subsequently also been reviewed as part of the strategic approach adopted by the LCC to revise recommendations in response to changing and evolving community uses of public land.^{152,153} The Melbourne Area District One Review covered areas of western and north-western Melbourne now part of the Wyndham, Melton, Hume and Whittlesea municipalities.¹⁵² Melbourne Area District Two Review included areas of Nillumbik and Cardinia with small areas in the Banyule, Maroondah and Knox municipalities.¹⁵³

In addition to the broad-based public land use investigations, two thematic special investigations have also been conducted within the investigation area. The statewide LCC Rivers and Streams Special Investigation focused on major watercourses with special values.¹⁵⁴ Areas bordering the Yarra River were recommended and approved by Government as a Victorian Heritage River, and general recommendations were made regarding the use and management of public land stream frontages.¹⁵⁴

The Environment Conservation Council (ECC) completed the Marine Coastal and Estuarine Investigation.¹⁵⁵ The ECC investigation area overlaps with the current investigation area along the intertidal zone between low and high water mark, and in places where municipal boundaries have been expanded to encompass coastal infrastructure (e.g. marinas, piers and jetties).

The boundaries of LCC and ECC investigations relevant to the Metropolitan Melbourne Investigation area are shown in figure 4.1. Inner and municipal city areas were excluded from earlier systematic investigations of public land use under the *Land Conservation Council Act 1970*. This current VEAC investigation is the first of this type encompassing most of the metropolitan area.

Figure 4.1
Previous Land Conservation Council (LCC) public land use investigation areas and the Metropolitan Melbourne Investigation area



4.4 : Public land use categories

An evolving suite of public land use categories has been developed by VEAC and its predecessors in order to describe and recommend public land use across the state (see below). Each public land use category defines the primary purpose of the land and the range of permitted uses. This may be reflected in the reservation purpose and legislation for Crown land (e.g. national parks are established under the *National Parks Act 1975*). Public authority freehold land is held for a primary purpose undertaken by that agency. Many public authorities manage a mixture of Crown land and freehold land.

VEAC has classified public land into the following major land use categories:

- ▶ parks primarily set aside for nature conservation — national and state parks, wilderness parks, marine national parks and marine sanctuaries, and some other parks
- ▶ nature conservation reserves — flora, flora and fauna, and non-hunting wildlife reserves
- ▶ private protected areas — Trust for Nature conservation properties
- ▶ historic and cultural feature reserves — historic reserves
- ▶ regional parks including, in Melbourne, metropolitan and coastal parks
- ▶ natural features reserves — bushland areas, stream frontages, wildlife areas and wetlands, streamside areas and scenic reserves, lakes, mineral springs and caves
- ▶ state forest — including areas allocated as hardwood production areas
- ▶ coastal reserves and offshore coastal waters reserve
- ▶ community use areas — recreation reserves, parklands and gardens, and community buildings such as schools, libraries and public halls
- ▶ water production areas — water storage reservoirs and bulk distribution facilities
- ▶ services and utilities areas — roads, railways, sewerage services, pipelines, cemeteries, police stations, court houses, public offices, hospitals, public housing, municipal buildings and depots
- ▶ uncategorised public land — no committed use, but subject to investigation, a future public use may be determined
- ▶ other categories — those not in this investigation area including alpine resorts, national heritage park, forest park, softwood and hardwood plantations, earth resource areas.

In addition to public land use categories, there are three types of overlay that may be applied to public land. These are heritage rivers, reference areas and declared or proclaimed water supply catchments. Each is described in section 4.6.

4.5 : Current public land use

Current public land use across the investigation area is shown on map A and described below. Table 4.2 opposite shows the extent of land within each of the major public land use categories in the investigation area. In some places these land uses are formalised through legislation, by existing Crown land reservation or previous government approved public land use recommendations of one of the LCC or ECC investigations referred to in section 4.3. In other cases, there may not be a legal or formal mechanism in place which reflects the accepted current use for particular sites. For this reason VEAC has provided in Part E general recommendations for the relevant land use categories that confirm existing public land use across the investigation area as depicted on map A. There are also a small number of sites for which changes to public land use are proposed and these are outlined in Part E of this discussion paper, together with the general recommendations for the relevant public land use category.

Table 4.2

Extent of major public land use categories in the investigation area

CATEGORY	AREA (HA)
National park	10,515
State park	14,400
Marine national park and marine sanctuary	95
Nature conservation reserve	3,540
Private protected area - Trust for Nature	110
Regional park	8,700
Regional and metropolitan park	7,690
Coastal park	1,010
Natural features reserve	4,755
Natural features reserve (general)	10
Natural and scenic features area	5
Bushland area	865
Streamside area	160
Stream frontage (including stream beds and banks)	3,135
Wildlife areas and wetland	580
Coastal reserve and coastal waters reserve	1,175
Water production area	8,710
Historic and cultural features reserve	60
Community use area	7,595
Recreation area	2,180
Parklands and garden	2,110
Recreation trail	115
Rifle and shooting range	5
Reservoir park	380
Buildings in public use	2,805
State forest	4,045
Services and utilities area excluding Crown road reserves	24,435
Services and utilities area including Crown road reserves	97,435
Road	6,225
Crown road reserve (estimated)	73,000
Railway	2,905
Hospitals, public offices, justice	845
Cemeteries	1,070
Water and sewerage service	11,940
Other services and utilities area	1,450
Uncategorised public land	1,160
Total extent of public land in the investigation area excluding Crown road reserves	89,295
Total extent of public land in the investigation area including Crown road reserves	162,295
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)	2,045
Heritage river (in various categories above)	205

Notes:

1. Areas are rounded to the nearest five hectares 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. Historically, Government roads were not ascribed allotments or parcels. The estimate of public land allocated to Services and utilities areas – road transport purposes described here is defined in two ways – an accurate description of public land parcels allocated to road use and secondly the less accurate unparcellised Crown road reserves estimated to be around 73,000 hectares using GIS methods.

National and state parks

Victoria's national and state parks comprise the vast majority of the state's protected area system. They are set aside primarily to conserve and protect natural ecosystems and provide for public enjoyment, education and inspiration in natural environments. National and state parks are managed for the same objectives under provisions of the *National Parks Act 1975*.

These parks have multiple objectives and provide for nature conservation, recreation, water supply and other uses. While some parks include small relatively undisturbed areas, they almost all include areas with past disturbance, mostly from timber harvesting and grazing.

National and state parks currently comprise approximately 25,000 hectares or about 27 per cent of public land in the investigation area. Parks wholly or partly within the investigation area are listed in table 4.3.

VEAC is recommending several small additions to Kinglake National Park and Bunyip State Park (see chapter 10).

Table 4.3
National and state parks in the investigation area

NAME	AREA (HA) WITHIN INVESTIGATION AREA
Organ Pipes National Park	153
Kinglake National Park	10,026 (total 22,430)
Churchill National Park	272 ha
Dandenong Ranges National Park	17 (total 3,540)
Lerderderg State Park	646 (total 20,180)
Warrandyte State Park	681
Bunyip State Park	13,075 (total 16,655)



Above: The Yarra River flows through Warrandyte State Park in Melbourne's outer east.

Marine national parks and marine sanctuaries

In 2002, 5.3 per cent of Victoria's marine environments were set aside under the *National Parks Act* in a system of highly protected marine national parks and marine sanctuaries. These areas are designated for protection of natural values with no fishing, resource use or damaging activities permitted.

Only the areas of marine national parks and sanctuaries between high and low water mark are included within the investigation area boundary. 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 partly included in the Metropolitan Melbourne Investigation area. Point Cooke Marine Sanctuary and Ricketts Point Marine Sanctuary abut the investigation area boundary along the high water mark, but are not included.

Both Yaringa Marine National Park and Jawbone Marine Sanctuary adjoin onshore nature conservation reserves comprising saltmarsh, wetlands, sheltered intertidal soft sediments and mangrove complexes. Yaringa

Marine National Park together with Quail Island Nature Conservation Reserve and Northern Western Port Nature Conservation Reserve, constitute an important portion of the Westernport Ramsar wetland, and protect one of the least disturbed intertidal mudflats in the region. Jawbone Marine Sanctuary contains one of the largest mangrove community remnants in Port Phillip Bay, and includes a range of unusual geomorphological features and values.

Other parks

Several areas across Victoria are set aside under Schedule Three of the *National Parks Act* as other parks. Where the park was established primarily for protection of natural or biodiversity values, these areas are included in the protected areas system. Some of these areas also provide for an intensity of recreational use and similar activities (e.g. dog walking) that may not be compatible with national or state parks.

There are three places in this investigation area that are other parks under Schedule Three of the *National Parks Act*: Lysterfield (Lake) Park set aside for recreational values in a natural landscape and Woodlands Historic Park established for cultural heritage values are considered regional parks based on current public land use objectives and values; and Langwarrin Flora and Fauna Reserve is considered a nature conservation reserve.

Nature conservation reserves

Nature conservation reserves are protected areas like national and state parks. These areas are set aside to conserve rare or threatened species and/or plant associations or communities that are of particular conservation significance or valuable faunal habitat. The primary land use objective is nature conservation, with compatible educational and scientific study and some passive recreation where compatible with the values of the particular reserve.

There are 41 nature conservation reserves in the investigation area (see appendix 5). Twelve existing nature conservation reserves specifically protect native grasslands and grassy woodlands in the Victorian Volcanic Plain bioregion. This is one of the most cleared ecosystems in Victoria having been subjected to intensive agriculture and domestic stock grazing. These threatening processes continue and there is additional pressure from expanding residential development in Melbourne's west. Very little of this bioregion remains in public ownership across the investigation area.

Five nature conservation reserves are greater than 200 hectares in size. Of these Craigieburn Grasslands (344 hectares), The Pines (216 hectares) and Langwarrin (215 hectares) flora and fauna reserves are located in corridors of expanding residential development. The other large areas — Warrandyte-Kinglake Nature Conservation Link (646 hectares) and Northern Western Port Nature Conservation Reserve (680 hectares) — are located in the outer areas, the latter extending beyond the investigation area boundary. Many are small remnants of the pre-colonisation landscape; fifteen are less than 20 hectares. Small nature conservation reserves are particularly sensitive to disturbance, both from within or from adjoining land use, and maintaining their natural values can be problematic.

Private protected areas

Trust for Nature (TFN) conservation land is the only freehold public land in the investigation area currently included in a protected area category. A total of around 155 hectares of TFN owned public land at 10 sites meet the standards of protected areas on Crown land. The largest sites are Willis Nature Park at Smiths Gully (82 hectares) and Harbury near Gembrook (22 hectares). These areas are managed in a manner consistent with nature conservation reserves.

Natural features reserves

Natural features reserve is a public land use grouping that includes several categories of land that have broadly similar land use objectives. They include:

- ▶ scenic and natural features areas
- ▶ bushland areas
- ▶ wildlife areas (hunting permitted)
- ▶ lakes
- ▶ geological and geomorphological features areas
- ▶ streamside areas
- ▶ stream frontages, stream beds and banks
- ▶ wetlands.

While the conservation values of such areas are not generally as significant as those of national parks and nature conservation reserves, these areas nonetheless have an important role in the protection of remnant vegetation and habitat, and of natural and scenic features and landscape character. They also provide opportunities for education and passive recreation. Bushland, scenic and streamside areas are considered to be protected areas, as they are managed primarily for protection and enhancement of natural values.

Other natural features reserves such as wildlife areas and wetlands, stream frontages and lakes may have permitted uses that are incompatible with nature conservation objectives including grazing, timber harvesting and duck hunting and may be more intensively developed for recreation.

Many of these areas are relatively small parcels 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, and will be of increasing importance during changing climatic conditions. Edithvale-Seafood and the Point Cook to Little River coastal wetlands and the northern coastal area of Western Port have also been recognised as wetlands of international importance under the Ramsar Convention (see chapter 2).

This category also includes areas of natural and semi-natural wetlands, sometimes utilised as retarding basins, that are owned by water management agencies, notably Melbourne Water. This includes areas such as Edithvale – Seafood Wetlands and Centre Swamp, Truganina Swamp and Cherry Lake (as part of the floodplain for Kororoit Creek).

Historic and cultural features reserves

Throughout the investigation area there are many sites associated with human history. Aboriginal history extends over thousands of years and evidence of occupation is ubiquitous across the landscape. More recent history also records many sites associated with exploration, settlement, agriculture and mining, as well as government institutions and services. These sites and values are an important cultural connection to the past for current and future generations.

Historic and cultural features reserves are established to primarily protect highly significant historical or archaeological values, including features such as buildings, structures, relics or other artefacts. 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 fourteen historic and cultural features reserves within the investigation area including notable sites such as Old Melbourne Gaol, Emerald (Puffing Billy) Railway, Greenvale Aboriginal Cemetery and Bullum Bullum Reserve in Deer Park (table 4.4).

Historic and cultural heritage places on public land often contribute to overall values of areas (e.g. Royal Exhibition Building, Melbourne Cricket Ground, Flemington Racecourse, Woodlands Historic Park, Point Cook Coastal Park, Kurth Kiln Regional Park). In some places a particular feature may be a key visitor attraction. Although the underlying land use category does not specifically reflect historic or cultural values, a range of other mechanisms, such as management zoning, listing on heritage registers or planning scheme heritage overlays, identify these sites as significant.

Table 4.4
Historic and cultural features reserves in the investigation area

NAME	AREA (HA)
Bullum Bullum Reserve, Burnside	7.80
Rippon Lea (part), Elsternwick*	0.28
Royal Historical Society, Melbourne*	0.15
Emerald (Puffing Billy) Railway	37.70
Essendon Historical Museum	0.06
Greenvale Aboriginal Cemetery	9.45
Warrandyte Miners Residence	0.03
Lynchs Bridge Historic Precinct Reserve	0.94
North Base Stone Historic Reserve, Tarneit	<0.01
Old Heidelberg Court House	0.11
Old Melbourne Gaol	0.08
Old Sunbury Court House	0.24
South Base Stone Historic Reserve, Werribee	0.08
Tasma Terrace, East Melbourne	0.14

* Public authority land

Regional parks

Across the state, regional parks provide for intensive visitor use by those seeking informal recreation in natural or semi-natural surroundings. They are typically located near major regional or urban centres, often along tourist routes, and offer opportunities for activities such as picnicking and walking in a natural environment as well as other more intensive uses such as trail bike riding. Minor resource use may be permitted in some regional parks.

This land use category is more difficult to apply within metropolitan Melbourne, and a wide range of permitted uses and values are found in the areas categorised and mapped as regional parks. There are a number of apparently dissimilar areas included in the 'regional park' category, arising from the spectrum of development in the investigation area from highly urbanised areas to rural fringe. For example, Kurth Kiln Regional Park (1,247 hectares) and Lysterfield Park (655 hectares) are substantial areas with natural and semi-natural landscapes providing for day visitors engaged in non-organised recreation. Wattle Park also provides for a large number of visitors, but offers a more structured and less natural landscape experience in an urban setting. While detailed management planning guides land use for each park, a strategic framework encompassing all types of public parklands in metropolitan Melbourne is lacking. This investigation is the first to include such a broad range of parklands and open space in a public land use framework.

Larger less structured passive recreation areas with semi-natural landscapes are more similar to the regional parks in the rest of Victoria. These are Kurth Kiln Regional Park, Lysterfield Park, Police Paddocks and Woodlands Historic Park. Other regional parks are described below in sub-categories reflecting their different character in metropolitan Melbourne.

The reservation purpose for Crown land is utilised as an approximation for management objectives where approved LCC recommendations are not in place.¹⁵⁶

All regional parks within the investigation area are listed in table 4.5.

Metropolitan parks

Places that are located within the urban area or nearby, have a largely modified landscape, or provide for more intensive or more organised recreation use are described here as a sub-category of regional parks – metropolitan parks – reflecting similar overall land-use objectives in an urban context e.g. Yarra Bend Park reserved for a 'public park and recreation' in 1935. Many of these are areas established by the former Melbourne Parks and Waterways during the late 1990s (e.g. Karkarook Park, Braeside Park, Lower Maribyrnong Valley Parklands, and Dandenong Valley Parklands) and are reserved for 'conservation, recreation, leisure and tourism' and managed by Parks Victoria. Provision of open space for non-organised and informal activities recreation has a long history aligned with the development of broader planning for Melbourne. Planning for public open space is discussed further in chapter 6.

Some metropolitan parks may be similar to sites included in the community use area land use category which includes parklands and gardens, reservoir parks, and recreation reserves. For example Westgate Park and Werribee Park Mansion are reserved for 'public recreation' and 'public park' respectively and are allocated to the public land use category 'community use area- parklands and gardens' reflecting a more landscaped and modified environment. Karkarook Park, Braeside Park and Wattle Park are all reserved for 'conservation, recreation, leisure and tourism' and are categorised here and described as metropolitan parks.

Coastal parks

Across the state, coastal parks are often established under Schedule Three of the *National Parks Act 1975* (e.g. Discovery Bay, Cape Liptrap and Cape Conran coastal parks). In the Metropolitan Melbourne Investigation area there are three coastal parks: Point Cook Coastal Park including Cheetham Wetlands, Altona Coastal Park and unreserved Crown land of Truganina Coastal Park (north of Cheetham Wetlands and informally managed as part of the wetlands by Parks Victoria).

These coastal parks typically have objectives of metropolitan parks in a coastal setting.

Table 4.5
Regional parks in the investigation area

NAME	AREA (HA)	RESERVATION TYPE OR PURPOSE OR ACCEPTED LCC RECOMMENDATION
Regional park		
Kurth Kiln Regional Park	1247.2	Public purposes LCC 1994- Regional Park
Lysterfield Park	655.4	National Parks Act- Schedule 3 LCC 1994- Regional Park
Woodlands Historic Park	820.8	National Parks Act- Schedule 3 LCC 1987- Regional Park
Police Paddocks	418.4	Public purposes (1930)
Regional park – metropolitan park		
Braeside Park	293.2	Conservation, recreation, leisure and tourism
Cardinia Creek Parklands	230.6	Conservation, recreation, leisure and tourism
Dandenong Valley Parklands	848.3	Conservation, recreation, leisure and tourism
Karkarook Park	37.8	Conservation, recreation, leisure and tourism
Footscray Park	14.5	Public park and recreation
Lower Maribyrnong Parklands	160.6	Conservation, recreation, leisure and tourism
Maribyrnong Valley Parklands	349.8	Conservation, recreation, leisure and tourism
Merri Creek Parklands (Galada Tamboore)^	106.9	Areas of freehold PL will remain unreserved
Plenty Gorge Parklands (including Plenty Gorge Metropolitan Park)^	1148.1	Conservation, recreation, leisure and tourism, (Conservation of an area of Natural Interest) LCC 1994- Regional Park (part)
Wattle Park	55.0	Conservation, recreation, leisure and tourism
Werribee River Regional Park	228.6	To be reserved
Yarra Bend Park	245.3	Public park and recreation (1935)
Yarra Valley Parklands (including Yarra Valley Metropolitan Park, Yarra Flats area, Pridmore Park)^	830.6	Conservation, recreation, leisure and tourism (public park and recreation, public park)
Regional park – coastal park		
Point Cook Coastal Park	847.7	Conservation, recreation, leisure and tourism
Altona Coastal Park	67.3	Recreation and conservation
Truganina Coastal Park	94.2	To be reserved

[^] Parks consisting of multiple land units and/ or public land ownership.

State forest

State forests are mostly extensive areas of Crown land supporting native forests and other vegetation. These areas are set aside to produce hardwood timber; conserve native plants and animals; supply water, and protect catchments and streams; provide opportunities for recreation and education; and protect historic and Aboriginal cultural sites and places. State forests are also available for the production of minerals, honey, gravel, sand, road-making materials, and other forest products.

Timber harvesting in state forests occurs in the General Management Zone (GMZ), and the Special Management Zone (SMZ) where compatible with identified values. While timber production is the highest priority for areas zoned GMZ there is also a range of other uses such as recreation and nature appreciation. Unproductive forest (less than 28 metres mean stand height) is also included in the GMZ. In addition the *Code of Practice for Timber Production 2007* as the regulatory instrument for commercial timber production provides management prescriptions for buffers around some other values such as streams, historic places, recreation facilities, threatened flora and fauna species, or specific habitats in which harvesting is not undertaken.

The 4,050 hectares of state forest in the investigation area is part of the extensive Yarra State Forest (total area 17,650 hectares). There are two geographically separate blocks: Mt Disappointment Block abutting Kinglake National Park and Upper Bunyip Block abutting Bunyip State Park and Kurth Kiln Regional Park. The former is some 1,600 hectares consisting of roughly half this area in SMZ for recreation values and about 35 hectares in Special Protection Zone (SPZ) for old growth forest protection. In the Upper Bunyip Block (around 2,340 hectares) SMZ for landscape values includes most of the area south of Dodd Creek and Bunyip River (approx 340 hectares) and SPZ protects areas of cool temperate rainforest, Leadbeaters possum, *Gymnodelidius leadbeateri* and tall astelia *Astelia australiana* habitat, mostly along the Bunyip River corridor.

These areas include a range of vegetation types and natural features or cultural features as well as many roads and visitor facilities for sightseeing, walking, picnicking or camping. Most of this area was burnt during the devastating 2009 bushfires.

Community use areas

Community use areas are primarily used for recreation, education, parklands or other specific community purposes. Community use areas in metropolitan Melbourne encompass some 7,600 hectares, and include some highly significant sites. Notable community use areas include the Melbourne Cricket Ground, Royal Park, the National Gallery of Victoria, Melbourne Museum, the Royal Exhibition Buildings, Melbourne Zoological Gardens, Fitzroy Gardens, Westgate Park, Albert Park, Bundoora Park, Fawkner Park, Yarra Park, Royal Botanic Gardens Melbourne and Cranbourne, Melbourne Aquarium, Cardinia Reservoir Park and Yan Yean Reservoir Park. In metropolitan Melbourne, as observed earlier, some sites in the parklands and gardens sub-category of community use area are similar to the more structured and modified metropolitan parks (see regional parks above), and vice versa, and could be assigned to either category.

Buildings in this category are distinguished from public offices, justice and health related sites that are categorised as services and utilities areas. The difference is based on typically broader community access or focus on the areas described here. Buildings such as libraries, halls, schools and community centres provide for multiple uses. By comparison buildings classed as service and utilities areas are used almost exclusively to deliver a service to the public and provide a workplace for government employees.

There are numerous schools and other public community buildings distributed across the investigation area. Management of these areas is often delegated to locally based committees of management, particularly local government. Some of these are recreation reserves, also containing small areas of remnant vegetation contributing to local habitat and landscape values. Often parks and sports grounds are important focal points for outdoor activities including both active and passive use. Public land is in high demand to provide for these types of uses, particularly in urban areas where there may be limited access to larger coastal foreshores, national, state or regional parks.

The types of community use also differ in requirements for land; both the size of area and site location. Some community uses require built infrastructure and facilities, while others can occur in less structured environments. The level of usage may sometimes cause conflict between different user groups or other values. In other cases a broader range of uses may be able to be made available than is currently provided, but there are additional management responsibilities and resources required to provide for this additional access. Conflicts

and tensions between user groups are some of the most difficult aspects of public land management, together with providing for changing or evolving needs of different communities over time. Each of the sub-categories of community use areas is described in more detail below. Note that land and buildings owned by local government are not included in VEAC's definition of public land.

Buildings in public use — kindergartens, schools, and other educational institutions, institutes of TAFE and adult education services, public halls, community centres, galleries, museums, exhibition centres, libraries, infant welfare and child care centres. 'Buildings in public use' account for over one third of public land categorised as community use areas. The multiple uses of these sites distinguishes them from buildings that provide services and utilities functions, that typically are only accessed by the wider community attending for provision of health or justice services.

Recreation areas — reserves with facilities for organised sports, non-organised and informal recreation, e.g. sports grounds, swimming pools, tennis courts, bowling greens. Some of the most notable examples in Melbourne are major sports and recreation complexes and include sites with other values such as heritage or biodiversity values. These include Albert Park and the Melbourne Tennis Centre. Recreation areas account for over one quarter of public land categorised as community use areas.

Recreation trails — linear trails for cycling and walking, many of which are located along the coast or streams, as well as along infrastructure corridors such as railway lines or roads. Some of the most popular trails include the coastal Bay Trail, Merri and Darebin creeks trails, Federation Trail, Capital City Trail, Anniversary Trail and Maribyrnong River Trail.

Parklands and gardens — often small intensively used local community parklands, playgrounds and ornamental gardens, civic areas and promenades, zoological and botanical gardens. Inner Melbourne has some particularly large and significant areas set aside during initial settlement planning. Many others occur throughout the investigation area, embedded within residential areas, and readily accessible within a short walking distance.

Reservoir parks — parklands associated with water storage areas often containing recreation facilities for picnicking and walking trails. Popular areas for day visits, these places are Cardinia, Yan Yean, Greenvale, Sugarloaf and Toorourrong reservoir parks.

Rifle and shooting ranges — three rifle ranges operate on public land in the investigation area: Springvale, Lang Lang and Frankston.



Above: In the Metropolitan Melbourne Investigation area, considerable numbers of community use areas are buildings in public use such as primary and secondary schools.

Coastal reserve and coastal waters reserve

Coastal reserve consists of a narrow and often discontinuous strip of Crown land. Coastal waters reserve occurs in river estuaries and around infrastructure associated with piers, jetties and wharfs where the investigation area boundary extends beyond low water mark.

The coastal reserve is an area of public land set aside on the coast primarily for public recreation, education and conservation of natural environments. Some coastal Crown land is specifically set aside or reserved for a purpose such as coastal park (regional park), parklands, recreation areas, or nature conservation reserves, and these areas are included in other appropriate public land use categories. Navigational aids and markers are included in the services and utilities areas category.

Gellibrand Coastal Heritage Park is included in this public land use reflecting the values associated with maritime industry on this site and the coastal landscape.

In Victoria we are fortunate that unalienated Crown coastline was set aside in 1881 for public purposes, ensuring that this important resource remains largely accessible to the public. Coastal reserves fringing Port Phillip Bay and Western Port are a primary recreational resource servicing a catchment of almost four million residents as well as many overseas visitors.

A coastal waters reserve was recommended in ECC's Marine Coastal and Estuarine Investigation Final Report and accepted by Government to encompass territorial waters (including the seabed) outside parks or other reserves extending from the shoreline to 5.5 kilometres offshore. This reserve is yet to be formally implemented and has a wide range of objectives including conservation of natural and cultural features, provision for recreation, education and tourism, sustainable harvesting of natural resources, and provision for shipping and pipelines.

The terms of reference for the Metropolitan Melbourne Investigation define the investigation area as the cities of metropolitan Melbourne and Cardinia Shire. Nine local government areas are defined at least in part by coastal boundaries: two in Western Port and seven in Port Phillip Bay. West to east these are: Wyndham, Hobsons Bay, Melbourne (including Melbourne Docklands), Port Phillip, Bayside, Kingston, Frankston, Casey, and Cardinia. The *Local Government Act 1989* defines coastal municipal boundaries as a line being the low water mark on the sea coast, except where amendments have been made by Order in Council.

Amendments to the boundary occur largely to encompass coastal infrastructure, such as piers, jetties, wharfs and harbours or marinas. In such cases coastal waters are included within the municipal district and therefore within the investigation area. In addition, the physical location of low water mark is changeable, particularly in areas where coastal sandy sediments move on a seasonal basis. Where beach renourishment has occurred — the artificial addition of sand to a beach — the position of the current average low water mark may not be the municipal boundary.

The high water mark is the landward boundary for marine protected areas in the investigation area. The area of intertidal zone between high water and low water is therefore included in municipal districts at these marine national parks and sanctuaries. For practical mapping purposes only portions of Jawbone Marine Sanctuary and Yaringa Marine National Park are included in this investigation as these two locations have a significant intertidal zones — 4 and 90 hectares respectively, and both abut onshore protected areas (i.e. nature conservation reserves).

The issue of boundary definition between stream frontages and coastal waters is important in the estuary of rivers and streams. Coastal waters reserve is shown for estuary areas where tidal influences are likely to play a major role in river function. The Yarra River is a somewhat atypical case. The mouth of the Yarra River is largely artificial, the original channel having been straightened, widened and new paths known as the Fishermans Bend channel excavated from the delta in the Coode Scheme of the 1880s forming Coode Island. Nearby West Melbourne swamps and minor channels were reclaimed with the spoil from excavation of Victoria docks and the area developed as industrial land. For the Yarra River, the boundary between the coastal waters reserve and natural features stream frontage (beds and banks) is taken to be Wurundjeri Way at Charles Grimes Bridge.

Water production areas

The water production land use category includes bulk water storage areas (reservoirs, large water holding basins), diversion weirs, pump intakes and associated buffer areas that obtain their supply from catchment flows, and comprises some 8,500 hectares of public land in the investigation area. This area includes a large number of water reserves, storage tanks, bores, off-takes and water storages on public land which are reserved for water production purposes. Supply and distribution infrastructure is allocated to the services and utilities area land use category.

The largest water production areas are reservoirs and water catchments at Cardinia, Melton, Djerriwarrh, Yan Yean, Sugarloaf, Toorourrong and Greenvale, with an additional area allocated for potential future reservoir use at Watsons Creek, near Christmas Hills.

Drainage basins for flood protection or diversion for flood waters are allocated to the services and utilities areas category. Some flood or drainage water storage areas utilise pre-existing wetlands or swamps, e.g. Edithvale-Seaford Wetlands, Truganina Swamp, and these are shown as natural features reserves.

Services and utilities areas

Services and utilities areas is a broad public land use grouping for purposes such as transport (roads, railway), ports, cemeteries, government buildings, hospitals, nursing homes, public housing, justice services such as courts, police stations and jails, fire stations, depots, piers and jetties, water treatment and delivery infrastructure, easements for water, electricity and gas, survey and navigation, and sewage treatment facilities. In this investigation area there is a greater proportion of services

and utilities areas than elsewhere in the state. This is unsurprising given the broad range of government services provided on public land and Melbourne's large population.

As described above, there is a distinction between buildings used for community purposes and those for government services. Included here are those public offices and buildings that deliver a government service, and are not generally available for other wider community access. Community use buildings include schools, libraries and public halls that provide for a range of compatible uses or focus for activities. Court houses, police stations, hospitals and health care facilities provide only for people accessing or employed to deliver those services. Some of these buildings may also have significant historic values and may also provide for broader community use when the site is no longer required for the original purpose.



Roads and railways

Transport is an important use and occupies a substantial proportion of public land across the investigation area. There is a total estimated area of 79,225 hectares of roads. The total extent of roads has been calculated by VEAC to include 6,225 hectares of parcellised roads and an estimated 73,000 hectares of unparcellised government roads. This does not include private freehold roads or local government owned subdivision roads, but does include unused government roads that may have a license issued. VicRoads manages more than 3000 kilometres of major arterial roads in Melbourne. There is a total area of 2885 hectares of railways consisting of both parcels of Crown land and public authority (VicTrack) land.

The primary purpose of road and railway reserves is to provide for communication, transport and access. Transport corridors can also have high conservation, recreation and landscape values, especially in urban landscapes where native vegetation has been largely cleared. Recreation trails are an important secondary use factored into the design of many of the new freeways constructed in Melbourne. Often monuments and historic markers are also located within road reserves.

Left: Melbourne's wide road reserves were set aside in the early planning of the city and remain an important part of the transport network. Historic road verge tree plantings form an important visual element of the city landscape, and also mitigate the urban heat island effect.

Water and sewerage services

These areas comprise water or sewage pipes, channels and infrastructure etc used to convey water or sewage; storages that are part of the reticulation system; storages of water not used for domestic consumption; drainage or flood-protection channels or structures; and sewage treatment or disposal infrastructure. 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 of national and state parks is Melbourne Water's Western Treatment Plant (WTP) comprising some 6,685 hectares (out of a total area of 11,000 hectares). A substantial portion of the site is not directly utilised for sewage treatment but is required as a buffer to ensure odours are not discharged beyond the WTP boundary in accordance with a permit issued by the Environment Protection Agency. The WTP forms part of the Port Phillip Bay (Western Shoreline) and Bellarine Peninsula Ramsar site (i.e. it is internationally recognised and considered a Wetland of International Importance). It supports critically endangered orange-bellied parrot, and a large number of international migratory waders. Complementary

4.6 Public land use overlays

conservation management continues to enhance the protection of shorebird habitat at this site, recognising its listing as a Ramsar site and the presence of threatened species at this site (see chapter 2.3). Some areas contain significant native grasslands remnants; for example, an area of natural temperate grassland located north of the Princes Freeway. Melbourne Water leases the majority of the odour buffer area for grazing of stock (15,000 cattle and 45,000 sheep).

Plantations

Public land is used for both softwood (pine) and hardwood (eucalypt) plantations. The investigation area includes a small area (0.8 hectares) allocated as a school plantation located near Whittlesea.

Uncategorised public land

Some public land has been identified by VEAC as 'uncategorised public land'. Uncategorised public land is a broad category used for sites for which no specific use is recommended, as well as for many smaller blocks, particularly in and around infrastructure projects such as road corridors, that are now considered surplus. Public land in this category has no clear primary use and, subject to assessment of any public land attributes present on the site, may be either assigned to an appropriate land manager or disposed of through sale. The treatment of surplus public land is discussed further in chapter 9. The Department of Sustainability and Environment carries out these assessments of Crown land parcels. Public land attributes are the resources (or natural, recreational, heritage or scenic values) present on a site that would generally require its retention as Crown land. Crown land that has minimal or no such values or resources is considered surplus to government needs and may be disposed of. In certain circumstances, and after Native Title assessments have been made, disposal may be undertaken as a land exchange for nearby freehold land with high values.

An example of an area mapped as uncategorised land is an area of Melbourne Water land at Werribee, which is to become the 'River Walk' residential development. This site will become private residential land and therefore is uncategorised in terms of VEAC's public land use categories.

Other land use categories

There are several other public land use categories used throughout the state that are not represented in the Metropolitan Melbourne Investigation area. These include forest parks, alpine resorts, earth resources, wilderness areas and national heritage parks.

Three categories of land use overlay are defined by legislation. These are reference areas, heritage rivers and declared water supply catchments. Five reference areas and one heritage river have been declared in the Metropolitan Melbourne Investigation area. There are several water supply catchments, both proclaimed and as land use determinations. These are described below.

Reference areas

Reference areas are relatively small areas of public land containing viable samples of one or more land types that are relatively undisturbed. Such areas are set aside in perpetuity under the *Reference Areas Act 1978* to maintain natural systems as a scientific reference to enable comparative study of modified and unmodified lands. A management plan for each reference area typically also defines a buffer area in which restrictions are placed on land uses that may have a detrimental effect on the reference area.

Within reference areas, only activities associated with protecting the natural processes of the area, emergency operations or approved research are permitted. Grazing, mineral exploration, mining, harvesting of forest produce, apiculture, quarrying, educational activities and recreational activities are specifically prohibited in reference areas. Access is restricted to authorised researchers and people undertaking management tasks or emergency operations, as well as those with Ministerial approval.

There are five reference areas in the Metropolitan Melbourne Investigation area established following government approval of the LCC Melbourne Study Final Recommendations.¹⁵¹ Of these five areas, two reference areas at Yan Yean overlay public land outside national or state parks (table 4.6).

Table 4.6
Reference areas

NAME	AREA (HA)	UNDERLYING PUBLIC LAND USE	VALUES
Disappointment	1,090	Kinglake National Park	Open mountain ash forest of moderate elevation on Devonian granite plateaus and slopes.
Joey Creek	250	Kinglake National Park	Open messmate stringybark and narrow-leaf peppermint forest of low elevation on Devonian granite plateaus and slopes.
Yan Yean north	100	Yan Yean water supply catchment	Open candlebark and red stringybark forest of low elevation on Silurian sedimentary rocks forming moderate slopes.
Yan Yean south	300	Yan Yean water supply catchment	Open forest of grassy woodlands with white sallee and swamp gums on flat Quaternary sediments at low elevations.
Diamond Creek	330	Bunyip State Park	Heathy woodlands of silver-leaf stringybark and broad-leaf peppermint forest of moderate elevation on moderately sloping Devonian granite.

Table 4.7
Heritage river

NAME	AREA (HA)	LENGTH (KM)	UNDERLYING PUBLIC LAND USE	SPECIAL VALUES TO BE PROTECTED (LCC 1991)
Yarra	285 in state park 60 in other public land (total 1,065 ha)	total 103	Warrandyte State Park, stream frontage, streamside area	Scenic landscapes, threatened fauna and flora communities, fish habitat and diversity, recreational opportunities. No impoundments, artificial barriers or structures to be constructed, new water diversions not to significantly impair attributes.

Heritage rivers

Victoria's heritage rivers highlight those rivers with outstanding values for current and future generations, and are protected under the *Heritage Rivers Act 1992*. The LCC's Rivers and Streams Special Investigation systematically studied the biodiversity, recreational, cultural heritage and scenic values of Victorian rivers.¹⁵⁴ Seventeen heritage rivers were nominated by the LCC as those rivers, or river reaches, that had at least four values of state or greater significance. Some heritage rivers are to retain their free-flowing condition to protect native fish habitat, recreational canoeing or scenic values.

The Yarra River Heritage River was declared in 1992 and extends some 103 kilometres from Warburton to Blue Tongue Bend at Warrandyte, and includes a total of around 1,065 hectares: 345 hectares is included in the investigation area. For around 14 kilometres, the heritage river corridor overlays Warrandyte State Park, expanding to 200 metres wide and encompassing some 285 hectares; the remaining 60 hectares of heritage river overlays other public land, mostly stream frontage (table 4.7).

The Yarra River Heritage River winds through a series of floodplains and gorges. The river valley is an important feature in the landscape and processes associated with incision and floodplain deposition have been studied in detail.¹⁵⁷ Remnant and restored vegetation along the stream frontage provides a wildlife corridor, linking the forested hills around Warburton to patches in central Melbourne, such as at Studley Park. The Yarra River corridor, with its diverse habitats and highly varied native fauna, including in-stream fauna, provides critical breeding sites and habitat for numerous birds, mammals, reptiles, and amphibians.

4.7 Resources and uses of public land

Declared water supply catchments

Important drinking water production areas are often defined in detailed plans called special area plans (or pre-existing 'land use determinations') following the declaration of 'special water supply catchment areas' under the *Catchment and Land Protection Act 1994*. Domestic water supply catchments are also proclaimed under the *Soil Conservation and Land Utilization Act 1958* in conjunction with the *Land Conservation Act 1970*.

In the investigation area declared water supply catchments and land use determinations currently exist on all major water production sites (Djerriwarrah, Greenvale, Yan Yean, Sugarloaf and Cardinia reservoirs) as well as areas of Lerderderg State Park, Kinglake National Park, Bunyip State Park and Yarra State Forest. Many of these areas were proclaimed in late 1800s as a part of the early works undertaken to establish both a clean drinking water supply and drainage or sewerage system for the expanding population of Melbourne. The area of water supply overlays now encompasses some 15,320 hectares across the investigation area (see map A).

Access to domestic water supply storages for recreation and resource use is generally restricted to protect and retain high water quality and yield.

As the preceding section demonstrates, public land has a wide range of uses and contains many types of community values. Some of the key uses and resources are described below.

4.7.1 NATURE CONSERVATION

In Victoria the protected area system (also referred to as the conservation reserve system) is a public land network set aside primarily for biodiversity protection providing the highest possible level of legal protection. To be considered a protected area, public land must be securely set aside and managed primarily for biodiversity conservation such as in parks under the *National Parks Act 1975* and permanent nature conservation reserves.

Public land use categories within the protected area system include national, state and some other parks under the *National Parks Act*, marine national parks and sanctuaries, nature conservation reserves, and certain natural features reserves (streamside areas, bushland areas, scenic areas, wildlife areas without hunting).

Victoria's protected areas form part of the National Reserve System which is discussed in more detail in chapter 8.

Protected areas within the investigation area comprise around 30,000 hectares of public land – or about 5.3 per cent of the entire investigation area (public and private land). Of this, nearly 25,000 hectares is in national and state parks. National, state and other parks and reserves considered to be protected areas are listed in appendix 5. Being close to Melbourne, these parks are exposed to higher visitor pressures than some other parks across Victoria and they are important educational and recreational resources for the community.

Biodiversity values on public land in the investigation area are described in greater detail in chapters 2 and 8.

4.7.2 RECREATION

Public land provides a broad range of recreation opportunities including national parks to small neighbourhood pocket parks, beaches, golf courses, tennis courts and sports grounds. Urban parks and sports grounds provide opportunities for organised and casual sport and exercise, while more natural areas allow for activities such as bushwalking, mountain biking and canoeing. Across the region, public land and land owned by local councils (not considered public land under the VEAC Act) together provide for an active and engaged community.



A summary of popular sport and recreation activities across the state is shown in table 4.8. Community based sport is supported by a network of enthusiastic volunteers and spectators. These activities can provide important social and community networks.

Table 4.8
Participation rates in most popular recreation and sport activities in Victoria in 2009¹⁵⁸

ACTIVITY	ESTIMATED NUMBER OF PARTICIPANTS	ESTIMATED PARTICIPATION RATE (%)
Walking	1,543,800	35.9
Aerobics/ fitness	1,008,500	23.5
Swimming	596,600	13.9
Cycling	551,400	12.8
Running	501,900	11.7
Tennis	294,400	6.9
Golf	278,100	6.5
Basketball	230,500	5.4
Netball	220,400	5.1
Australian rules football	220,300	5.1

Above: The Melbourne Cricket Ground (MCG) is one of the cities most iconic sites and is recognised on the National heritage list. Managed by a government appointed Trust since 1862, the 'G' regularly draws large attendances at sporting events. The main venue of the 1956 Olympic Games, the MCG's value to the community reaches beyond individual events to an experience of the place itself.

Non-organised recreation

Non-organised activities are popular on public land within the investigation area. The *Victorian Trails Strategy* indicates that the most popular activities within metropolitan parks between 2002 and 2004 were short walks (less than one hour), followed by cycling, walking the dog, and jogging/ running.¹⁵⁹ All of these recreational activities can be undertaken in urban areas.

Other popular forms of non-organised recreation that typically occur in more natural environments include horse riding, fishing, trail-bike riding, four wheel driving and canoeing and kayaking.

Organised recreation

Melbourne's public land provides a range of opportunities for organised recreation. Public sports grounds and courts, swimming pools, bowling greens and golf clubs enable golf, tennis, Australian rules football, cricket, soccer, hockey, netball and basketball. These facilities are provided on both public land and on land owned by local councils. Participation in organised sport at a community level is very popular, particularly with school-aged children.

Leisure activities

Parks Victoria information indicates that attending a special event, socialising with friends and family and picnicking are likely to be the most popular activities in urban parks in metropolitan Melbourne.¹⁶⁰ Community use of public open space* supports this finding, with popular activities including relaxing, being in nature, picnicking and barbeques and socialising with family and friends.

Melbourne is also well known for cultural and sporting events enjoyed by residents and visitors alike. Iconic sites such as the Melbourne Cricket Ground provide a venue for a range of major sporting events. AFL match attracts around three million visitors per year and the popular five-day Boxing Day test match cricket was attended by around 156,000 spectators in 2009.¹⁶¹

Community sports grounds are a hub of activity on weekends and provide an important place for social interaction as well as delivering the health benefits of physical activity.

4.7.3 WATER AND SEWERAGE

The provision of clean high quality water from catchments to Melbourne's water supply reservoirs is an important public health issue but also contributes to prosperity and liveability of the city. From very early in the planning of this settlement, delivery of a high quality domestic water supply and drainage or sewerage systems was considered of great importance. Water supplied from Yan Yean Reservoir was first provided to the city of Melbourne on 31 December 1857.¹⁶² Many of Melbourne's existing water supply reservoirs were created in the nineteenth and early twentieth century (see table 4.9). The Melbourne Metropolitan Board of Works was established in 1891 to provide water and sewerage services to the rapidly growing city.

Population growth combined with an extended dry period, mostly during the post World War Two years, were the main reasons for construction of new water supply reservoirs. The Upper Yarra Reservoir (located outside the investigation area) was completed in 1957, tripling Melbourne's total water storage to nearly 300,000 megalitres (ML). Other significant water supplies for Melbourne were added with the construction of the Cardinia (1973) and Thomson reservoirs (1984) (located outside the investigation area).

Table 4.9
Water supply areas including catchments in the investigation area

RESERVOIR	AREA OF PUBLIC LAND (HA)**	YEAR ESTABLISHED	TOTAL CAPACITY (ML)
Cardinia	2,515	1973	287,000
Sugarloaf (Winneke Dam)	455	1981	96,000
Yan Yean	2,800	1857	30,000
Greenvale	280	1971	27,000
Melton (Exford Weir)	250	1916	14,340
Djerriwarrh	250	1964	983
Toorourrong Reservoir	135	1885	273
Total			455,323

* The use of open space by the Melbourne community has largely been determined from municipal household surveys and on-site surveys of park users. This information is often used by local governments to inform municipal open space strategies.

** Area of public land occupied by water supply reservoir and associated area dedicated to water production. Some water reservoirs have other compatible public land uses in catchment areas (e.g. national parks, state forest).

Recycled water

Melburnians use about 500,000 million litres of potable (drinking) water each year. Some of these uses can be readily substituted with recycled water. Water recycling is a socially, environmentally and economically viable solution to help preserve our drinking water supplies.¹⁶³

Recycled water is a term used to describe stormwater, greywater, rainwater and treated effluent produced from sewage treatment plants. The long dry period experienced in Melbourne over the last decade has led to greater exploration of recycled water and its use for a range of purposes including agriculture, horticulture, industrial processing, residential dual pipe schemes, and to keep our parks and recreational grounds green. This contributes to conservation of higher quality drinking water and reduces the amount of treated effluent discharged into the sea.

The main source of recycled water is Melbourne's two main sewage treatment facilities — the Eastern Treatment Plant at Bangholme and the Western Treatment Plant at Werribee — and to a lesser extent some local treatment plants. In addition, flows from the Western Treatment Plant are used to maintain a complex range of wetland habitats identified as a wetland site of international significance under the Ramsar Convention (see chapter 8).

There are a number of new residential developments in Melbourne, which will have dual pipe facilities enabling the use of recycled water for non-drinking applications such as toilet flushing and garden watering. The availability of water under future climate change scenarios is explored in greater detail in chapter 2.

4.7.4 OTHER GOVERNMENT AND COMMUNITY SERVICES

As a large capital city, Melbourne provides for a wide range of community services and utilities. Within the investigation area, a significant proportion of public land is used for roads and railways and other infrastructure such as ports. Indeed the total area occupied by roads is estimated to be in the order of 80,000 hectares across the entire investigation area. In addition, other government services such as hospitals, public schools, kindergartens, cemeteries, fire and emergency services, police stations and courts are all located on public land.

Provision of these services is an important component of government planning and each agency or department responsible for these functions undertakes detailed planning and forecasting of future needs. Some of these processes include designation of land required for future projected population, and implementation through the use of public land acquisition overlays under the planning scheme. Other ways in which public land is acquired or disposed of are discussed in greater detail in chapter 9. As the population of Melbourne continues to grow, demand for these services continues to increase.

Cultural and educational institutions

The provision of education from early childhood to adult training is an important component of government services and community wellbeing. Since the establishment of Melbourne as a city in the 1850s significant areas of public land have been set aside as part of civic development. Land was allocated for public and scientific organisations as early as 1857 (Royal Society of Victoria building, Melbourne), and mechanics institutes were established to provide for self-education and intellectual opportunities. Land was granted to churches to provide schools from the 1850s but by the 1870s a new education department was established to deliver compulsory, free and secular education. Today the total area of schools and education facilities on public land across metropolitan Melbourne exceeds 2400 hectares. An important part of community health, well-being and prosperity is based on the delivery of government funded education opportunities, particularly for children. School buildings also provide a venue for various associated 'after-hours' activities by a wider cross-section of the community.

The Royal Exhibition Building and Carlton Gardens is a feature of the Melbourne landscape, now recognised as a UNESCO World Heritage site. Constructed in 1880 to house the International Exhibition, this remarkable building is testament to the prosperity and aspirations of post-industrial revolution Melbourne. The site provides a venue for the Melbourne Museum, housing the state's scientific and cultural collections and hosting permanent and visiting exhibitions. Other large institutions, such as the State Library of Victoria, National Gallery of Victoria and the Victorian Arts Centre, are responsible for other parts of the state's cultural collections and, along with smaller local community centres, provide venues for artistic and cultural activities. Meeting spaces in outdoor environments and venues for cultural activities or festivals are important community assets in the city. These include Federation Square, Sidney Myer Music Bowl and large parklands in the city centre. Additionally, the wide streets of the central city often host parades and political demonstrations.

Health and emergency services

While education services were provided by the early colonial government, much of the health sector was left to private organisations for many years. In line with common practice in Britain at that time, charity and religious organisations were relied upon to provide health services. Crown grants of land were the main government contributions with the exception of facilities for the mentally ill (asylums) such as those at Yarra Bend and Kew (Willsmere) in the 1840s to 50s. Health service delivery is complex and interlinked with university and charitable organisations. Today government provides health care at major hospitals, early childhood centres, aged care facilities through various partnerships with private providers, charitable organisations and local government. Emergency medical response and pre-hospital services are operated by Ambulance Victoria (a statewide body), often from sites co-located with other emergency services or hospitals.

Police, justice and legal institutions have always been seen as important services provided by Government. Modelled on civil policing in Britain, by the late 1840s the number of Melbourne Police was a meagre 40. Soon overwhelmed by the influx of migrants seeking their fortune on the goldfields, the *Police Regulations Act 1853* brought together the disparate forces across the colony and substantially increased numbers. Today Victoria Police as an organisation has more than 13,800 staff members located throughout the investigation area and the state.

The Metropolitan Fire and Emergency Services Board (MFB) is one of the Melbourne's oldest organisations.

The first known volunteer fire brigade operated in Melbourne from around 1845, but not until 1890 were these organisations amalgamated under the badge of the Melbourne Fire Brigade Board and the Country Fire Brigade Board in regional centres. In 1893, the Eastern Hill fire station opened and today there are around 50 MFB stations across Melbourne. The Country Fire Brigade initially operated in towns outside of 16 kilometres from the city centre. Following devastating fires in 1939 and 1944, the Country Fire Authority (CFA) was established, uniting the regional Country Fire brigade with the independent rural bush fire brigades. Today the CFA is one of the world's largest volunteer based emergency management organisations and operates from around 80 stations in outer areas of the Metropolitan Melbourne Investigation area, often in shared service centres.

Transport infrastructure

Across metropolitan Melbourne transportation services including roads, railway, and the Port of Melbourne comprise the single greatest use of public land. VEAC has for the first time undertaken an assessment of the area occupied by the Crown road reserves; including both used and unused roads. The total area of Crown reserves is estimated to be 73,000 hectares with an additional 6,225 hectares of mostly VicRoads land. This total of around 80,000 hectares is significantly greater than any other public land uses across this investigation area, although this is unsurprising given the urbanisation associated with a capital city.

Provision of transport infrastructure plays a critical role for economic and social development. Expansion of road and railway corridors has been accompanied by residential development, particularly around railway stations. Road and railway corridors are also used for other services such as electricity and pipelines. Notably, the Hoddle early grid plan set out in 1837 for straight, wide streets was repeated with survey of roads reserves laid out across the suburbs and villages of Melbourne. The wide and treed boulevards are one of the key characteristics of the city of Melbourne. Many of these corridors provide important linkages for natural values and may also contain cultural sites.

Port of Melbourne Corporation (PoMC) owns approximately 494 hectares at the Yarra River mouth comprising shipping docks and related transport infrastructure. PoMC provides an important strategic asset and economic service for all of Victoria, and the Port of Melbourne is the largest container and general cargo port in Australia with over 3,400 commercial ship visits per year. PoMC enters into commercial lease and licence arrangement with shipping operations companies across the majority of the land described above.

4.7.5 COMMERCIAL RESOURCE USES

Across Victoria, public land is an important source of natural resources particularly timber, grazing, apiculture, earth resources and water. In the Metropolitan Melbourne Investigation area, public land has also provided these resources in the past, but currently water supply remains the only significant use of this kind.

Earth resources

Victoria and the Melbourne region are historically known for gold production. Alluvial gold was first officially recorded in Victoria at Warrandyte, along the Yarra River, in 1851. This area and Kangaroo Ground, Diamond Creek, St Andrews and Kinglake were all worked in diggings of shallow alluvial deposits, deep leads and quartz reefs. Although eclipsed by the rich gold fields of Ballarat and Bendigo areas, this region north-east of Melbourne was worked intermittently for many years; the main reefs largely abandoned by the mid 1870s.

Minerals and petroleum continue to provide a major economic contribution to Victoria generating some \$5.4 billion per annum for the economy. The availability of good quality building and construction materials has played an important role in the development of a prosperous city. Materials such as basalt (bluestone and blue metal), sand, gravel and clay minerals have been readily obtained from both within and nearby to the investigation area. The close proximity of building and construction materials to Melbourne has been of substantial economic benefit. In 2006/07, the industry's State wide production had a sales value of some \$654 million and directly employed over 3,500 people.¹⁶⁴

There are few tenements (exploration and production licences or permits) on public land in the metropolitan Melbourne investigation area. The majority of earth resource interest is exploration for geothermal energy and construction materials.

Timber resources

State forests are a major source of timbers and firewood across Victoria, as well as supporting biodiversity and providing for recreational activities. Management planning of these forests establishes three zones based on the values and uses available. These are Special Protection Zone (SPZ), Special Management Zone (SMZ) and General Management Zone (GMZ). In addition the *Code of Practice for Timber Production 2007* as the regulatory instrument for commercial timber production provides management prescriptions for buffers around some other values such as streams, historic places, recreation facilities, threatened flora and fauna species or specific habitats in which harvesting is not undertaken.¹⁶⁵

Two forest blocks of the extensive Yarra State Forest overlap with in the investigation area: Mt Disappointment Block (Kinglake) and Upper Bunyip Block (Bunyip) within the Central and Dandenong Forest Management Areas respectively (see discussion of state forests). Both state forest blocks are within either a land use determination or proclaimed water supply catchment limiting forestry activities that may impact on water supply.

The 2009 fires encompassed the entire Mt Disappointment block and roughly three quarters of the Upper Bunyip block. It is likely that the availability of timber in these areas will need to be reviewed based on post-fire recovery.

Stock grazing

Domestic stock grazing is undertaken on public land under licence or permit. Grazing may also be undertaken as a land management tool; in particular, short term or intermittent grazing at low stocking rates has been demonstrated to maintain grassland habitats and to control weeds by reducing overall biomass.^{166,167}

There is some 1,065 hectares held under about 677 grazing licences across Crown land in the investigation area (table 4.10). Of this area, about 28 per cent is public land water frontage and 60 per cent unused government roads, although not all of this area is necessarily grazed. Most of these areas are licensed to adjoining land owners and in some instances may not be readily distinguished from the freehold land. The remaining licensed area is for broad acre grazing — a term used to describe grazing licences issued over Crown land that is not a water frontage or unused road and typically consists of state forest, unreserved Crown land, streamside and other natural features reserves.

Table 4.10**Stock grazing licences on Crown land in the investigation area***Source: data supplied by Department of Sustainability and Environment (2008)*

GRAZING LICENCE TYPE	NO. LICENCES	LICENCE AREA (HA)	AVERAGE AREA (HA)
Unused government road licence	477	629	1.3
Crown land water frontage	175	298	1.7
Broad acre	25	138	5.5
Total	677	1,065	

Grazing licences do not confer exclusive use of public land to the licence holder. Certain types of recreation are permitted on the licensed area such as walking, fishing and nature appreciation. Licence conditions for Crown land stream frontages typically specify that stiles or gates are required in fences that cross the licensed land in order to provide for continued recreation access. However, members of the public are not permitted to camp, light fires or carry firearms on the licensed land.

Public authorities may also undertake commercial arrangements for grazing. These are not documented in detail here and are subject to change and contract arrangements entered into by government authorities. Of these the most notable grazing enterprise is that operated by Melbourne Water at the Western Treatment Plant. Initially this compatible use was established in the early 1900s where stock grazed on irrigated paddocks. Currently there are up to 15,000 cattle and 40,000 sheep on over 8,500 hectares (including areas of public land outside the investigation area) making this a major commercial use of public land. As sewage treatment processes have modernised, flood irrigation has been replaced with settling ponds and production of high quality re-cycled water — a by-product in high demand for agricultural and horticultural use in the Werribee district (see section 4.7.3).