



Our Yarra: Healthy, Protected and Loved

28 September 2020

Environment and Planning Committee  
Parliament of Victoria

## Submission: Environmental Infrastructure Inquiry for a Growing Population

### Who are we?

The Yarra Riverkeeper Association is the community voice for the Yarra. The Yarra Riverkeeper speaks for the river as the river cannot speak for itself. We are a key and informed stakeholder for the Yarra River, for the water within the channel, the river corridor, for the tributaries and for the catchment as a whole and for the groundwater that feeds our creeks, streams and rivers. Our policy achievements include the initial advocacy for the Yarra River Protection (Willip-gin Birrarung murrn) Act (Yarra/Birrarung Act) as well as for the Yarra Planning Controls. We have built an informed and evidence-based community understanding of the river as a single and integrated ecosystem from source to the bay. The community, government, government agencies see us as an informed and authoritative voice on the river and on water issues. We also regularly patrol the river in our boat, on foot and on a bike, which gives us a deep intuitive understanding of the river and its role in the life of Melbourne. In addition, we run restoration projects, river clean-ups and conduct innovative research into the impact, sources and solutions of litter on the river.

### Why are we submitting to this inquiry?

Melbourne's great parklands have always been on its waterways. Parklands are a key consideration for any consideration of environmental infrastructure both parklands and environmental services. The waterways still remain the best opportunity for growing and enhancing our parklands, and where we need to focus attention on protecting our best waterways. This was identified in the first plan for Melbourne the Plan for General Development, commissioned and published in 1929 by the then Metropolitan Town Planning Commission. The Plan of General Development was a planning scheme to prevent 'misuse' of land and protect property values. The plan recognised the value of Melbourne's waterways as the foundation of our parkland network. The waterways provide our water supply, first and foremost, cool the city, clean the air, provide flood control, carry away waste when necessary, and enhance property values among other services. The Yarra Riverkeeper well-placed as an independent and evidence-based opinion-maker, with long term in-water experience of the waterways, to provide commentary on environmental infrastructure.

## Context

Since it was regarded as Melbourne's No. 1 Drain by the then MMBW there has been a series of initiatives, campaign and legislation for the Yarra. A key step was the 'Give the Yarra a Go' campaign by The Age in the 1980s. The lockdown has shown not only how valued the Yarra's magnificent parklands are as people walk and ride along its banks; it also shows the risk of population pressure on our wild places with, for example an explosion of mountain bike riders weaving an every expanding network of eroding trails through the fragile soils of Yarra Bend Park, and Parks Victoria lacking the resources to manage the riders. Two recent initiatives are the Yarra River Protection (Willip-gin Birrarung murrn) Act and the Yarra River Planning Controls. A key part of the Yarra/Birrarung Act is the Great Birrarung Parklands as the Greater Yarra Urban Parklands. The Yarra/Birrarung Act was a bicultural act that established the bicultural Birrarung Council. The act speaks of the river as 'one living and integrated natural entity'. The Great Birrarung Parkland is an environmental infrastructure promise yet to be fulfilled but urgently needed.

## Environmental Infrastructure

This is not a widely used term and it is most often used in terms of the pipes and junctions that deliver our water supply. In the context of this inquiry it is a much broader term including not only parklands, but the ecological services provided by green places. The challenge for environmental infrastructure is that it has been taken for granted. In the context of the terms of reference we understand the term to mean

1. The parklands and open spaces in urban places, and the services they provide to people in the form of reflective recreation that requires natural places for participation and open spaces for sports fields. Outdoors notions. Biophilia.
  - a. There is the notion that this is something that is in short supply and needs to be provided for Melbourne's growing population. There is an implication that can be drawn from the terms of reference that urban open space including parklands needs to be invested in and expanded.
  - b. There is a notion that Melbourne's growing populations
2. Environmental infrastructure also means the 'soft' or 'green' infrastructure that supplies important services outside of recreation such as flood control, wind protection, pollination and cooling. There is also an implication that green infrastructure can cost-effectively ameliorate some of the negatives of built infrastructure - trees cooling the sides of buildings, wetlands treating stormwater. There is the possibility that this green infrastructure can provide recreation opportunities and healthy ecologies for wildlife to thrive in.

## Traditional Owners

In any consideration of environmental infrastructure Traditional Owners much be placed front and centre. Traditional Owner values within parklands need to be mapped as a matter of urgency. The steps that need to be taken to restore cultural values need to be taken urgently, including cultural flows for waterways. Traditional owner management participation in any management body, such as Green Infrastructure Victoria or a taskforce, is a necessity to understand the full extent of the value of environmental infrastructure. It should be a matter of priority to employ First People rangers to maintain, protect and improve our green infrastructure.

## Yarra River Action Plan

The Yarra River Action Plan made a number of clear recommendations around environmental or green infrastructure:

Action 24 [Timing: Short term](#)

### MELBOURNE'S NATURAL INFRASTRUCTURE TASKFORCE

Establish a Taskforce that brings together the skills of the Department of Environment, Land, Water and Planning (DELWP) with the Traditional Owners, Parks Victoria, Melbourne Water, VicRoads, Environment Protection Authority, and local governments to:

- Investigate the benefits of combining waterway management, open space, bay and coastal parkland management for greater Melbourne.
- Establish ongoing collaborative governance arrangements between DELWP, Traditional Owners, Parks Victoria, Melbourne Water and local government to:
  - deliver an integrated vision and strategy for Melbourne's natural infrastructure that increases the amount and quality of publicly accessible open spaces (including the bays, waterways and parklands)
  - realise the synergies from coordinated delivery of related projects from the updated Plan Melbourne, Water for Victoria, Port Phillip Bay Environmental Management Plan (EMP) and Yarra River Action Plan
  - establish long-term funding arrangements for developing and maintaining urban natural infrastructure
- Report to the Victorian Government on an improved integrated institutional model for delivery of major natural infrastructure in Melbourne.

Action 25 [Timing: Short term](#)

### URBAN NATURAL INFRASTRUCTURE STRATEGY

Develop an integrated vision and strategy for Melbourne's open spaces, including its waterway corridors and coastal parklands to improve the liveability and ecological health of the growing city.

*Yarra River Action Plan* p. 20

We strongly support both actions and we go further and propose that a permanent authority called Green Infrastructure Victoria be established along the lines of Infrastructure Victoria. We would propose the first step would be, like Infrastructure Victoria, would be a 50-year green infrastructure strategy.

## Yarra Strategic Plan

A key initiative of the Act is the Yarra Strategic Plan. It is currently in draft awaiting the release by the Minister for Planning of the Planning Panel report on the plan. The Strategic Plan needs ambition and it needs funding by government to be a success.

## Great Birrarung Parkland

This initiative to recognize and celebrated the parklands along the Yarra from the Upper Yarra Dam to Princes Bridge as one great parkland was part of the Yarra/Birrarung Act. This now needs investment to be brought into a reality. This would provide immeasurable benefit to people of Melbourne, the Yarra Valley and Victoria. It would permit the connectedness of trails to be recognized. By enhancing parklands, it would improve the Yarra as a migratory path for wildlife. It would celebrate the connectedness of the Yarra/Birrarung as 'one living and integrated natural entity'. It need investment to be realized.

## System of Environmental Economic Accounts

The SEEA has been adopted by all states and territories – in principle. The use of the term infrastructure implies an acceptance of the market-based ideology that underpins the SEEA. However, the SEEA is more than an effort to assign dollar values to environmental services.

At its core, the dollar value is irrelevant and SEEA is about collecting and integrating data in the way of double-entry accounting, assessing sinks and flows, increases and decreases. This can then be representative as an index that is used for comparing two things of the same class. This index could be monetary, but the use of a monetary index is fraught as it carries with it a lot emotional and ideological baggage, not the least of which that is both rational and neutral. This is SEEA at its most valuable. The limitations of endeavoring to value an element of the environment as an asset must always be transparent. A beginning can be made with a list of known services the asset provides, then an assessment of which of these services are valuable to people (which may not be the same for all people, then we need to assess the services we can measure and then further which are the ones that can be given a contingent or if necessary a revealed monetary value. It is impossible to value environmental asset accurately as we do not sufficiently understand the functioning and interdependence of a complex world. The SEEA is useful for the comparison of two economic goods or services where there is a revealed market value for example the comparison of trees as wood chips and for water supply and filtration. Two further elements of environmental accounting need to be considered in considering the value of environmental infrastructure:

1. Accounting standards be adjusted to allow government to include investments in infrastructure, including shared assets between government agencies and councils, to be part of the balance sheet. This is not about valuing the whole asset but enabling the investment in the asset to be put on the balance sheet.
2. The accounting methods of distinguishing capital and operating expenditure be reviewed to better represent the value and function of green infrastructure over time in accounting systems and ensure that adequate provision is made for establish maintenance in the initial capital budget. Aspects of environmental 'maintenance' can be better classified as capital investment.

The bottom line remains that it is impossible in the end to put a value on environmental infrastructure. How do you value the air we breathe or the water we drink?

## Environmental Infrastructure for mental wellbeing

Green spaces are not merely just 'nice to have,' but necessary for community wellbeing. Areas of blue and green provide the fundamentals to living - clean air, water and food, but also meaningful places to live, work and play. Improving environmental infrastructure in the form of more greenery can have far-reaching benefits — children who live in greener spaces have a higher capacity for paying attention, patients who have hospital rooms that look onto nature tend to recover faster and overall it can help improve moods. Many current arrangements place an importance on the need for people to have access to green spaces, in particular Plan Melbourne 2017-2050, Victorian public health and wellbeing plan and Biodiversity 2037. Unfortunately, these arrangements and their objectives such as 'increased parklands' and 'access to nature' are hindered because of two reasons:

1. Unequal distribution of green spaces and parklands
2. Unavailable land to create more green spaces and parklands

### *Unequal distribution*

Currently, 340,000 Melbournians have little or no parkland within 5km of their home. Access to green space is unequally distributed across the city, with places such as the City of Melbourne having an average of 4.5m<sup>2</sup> per person as compared to a municipality average

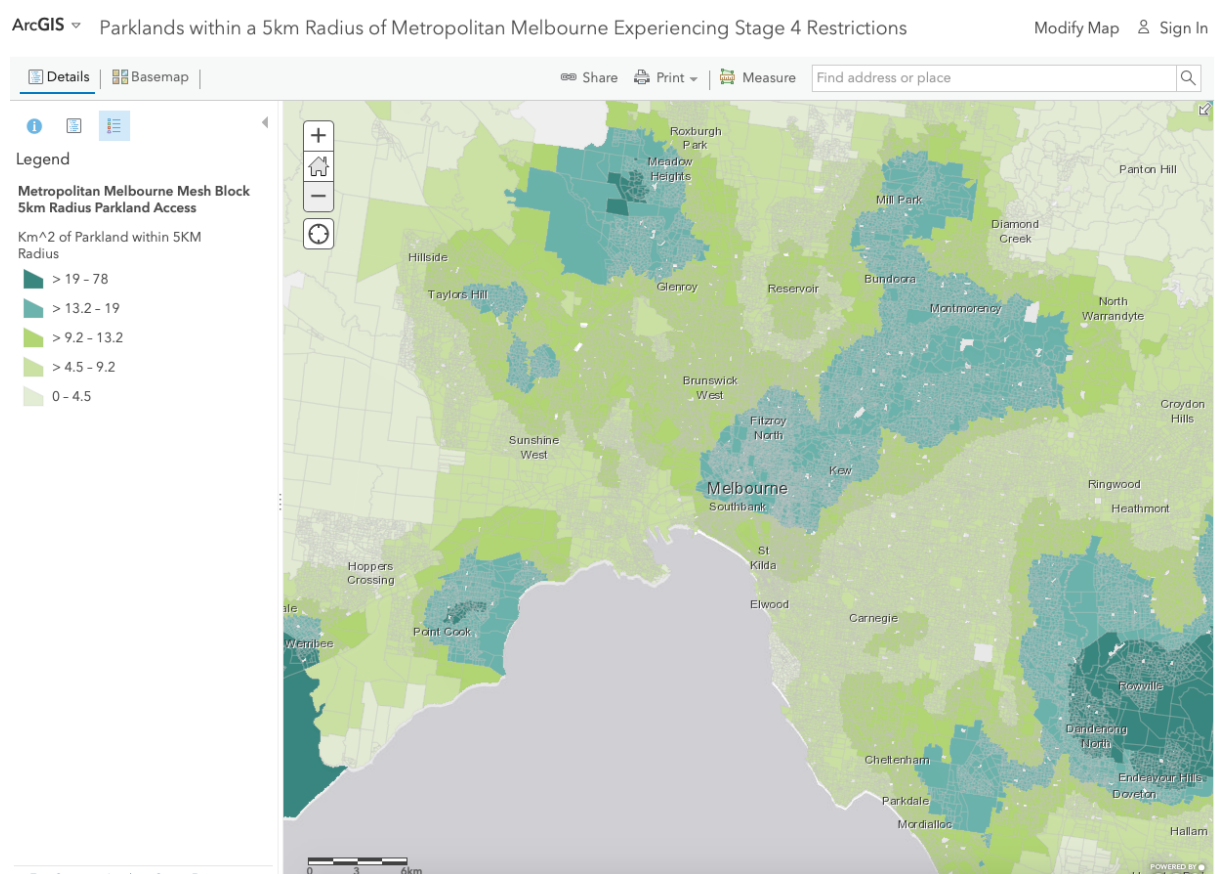


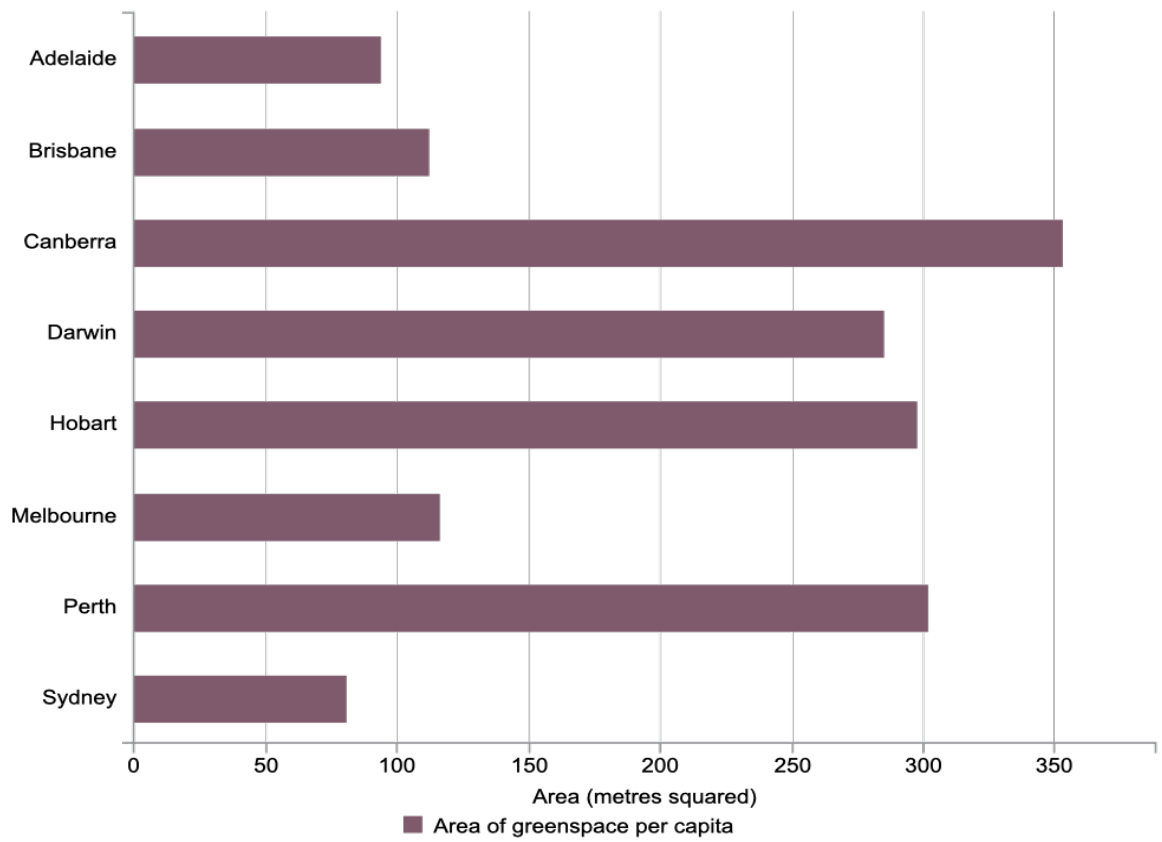
of 56m<sup>2</sup> per person. The unequal distribution of access to green space is also shown in figure x. This places people living in these areas at a disadvantage of experiencing increased levels of stress and other adverse health conditions.

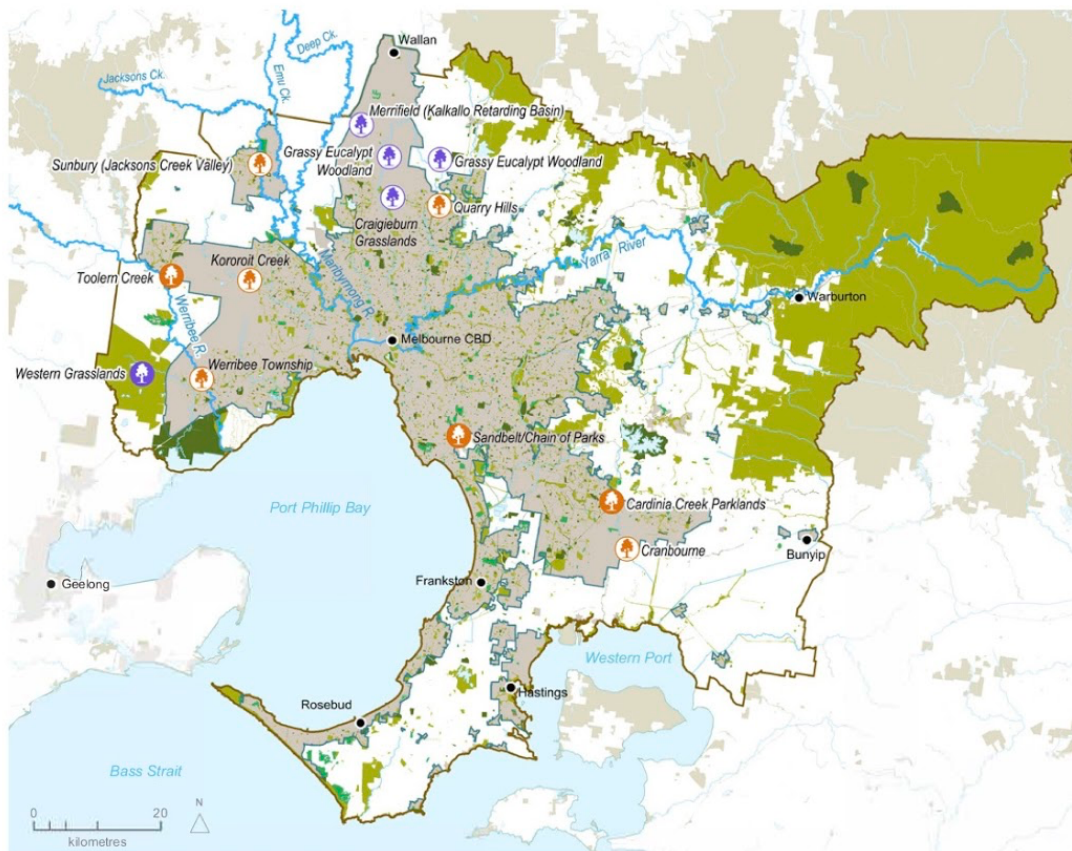
#### *Unavailable land to create more green spaces and parklands*

There is a lack of land, especially publicly owned land, that will be suitable for the creation of new parks and open spaces, especially in areas that need it the most. This is demonstrated in figure below. This map shows that many areas of Melbourne are highly urbanised and there are only small 'pockets' of available public land. These areas are not big enough for 'open space,' posing the need for Melbourne to be more innovative and also look towards implementing other avenues of connecting with nature and greenery to complement existing open spaces and parks. This can be seen internationally. Singapore, dominated by high rise buildings, created vertical green spaces and rooftop gardens.

Future plans need to find opportunities to expand and protect open space in Victoria's urban centre.







## Map 21

### Open space

- |   |                               |
|---|-------------------------------|
| Public open space <sup>(1)</sup>                                  | Water's edge parklands        |
| Restricted public land (with open space potential) <sup>(2)</sup> | Urban growth boundary         |
| Private open space <sup>(3)</sup>                                 | Urban area                    |
| Regional park — emerging <sup>(4)</sup>                           | Waterway                      |
| Regional park — proposed <sup>(5)</sup>                           | Waterbody                     |
| Conservation reserve — emerging <sup>(6)</sup>                    | Metropolitan Melbourne region |
| Conservation reserve — proposed <sup>(7)</sup>                    |                               |

- (1) Publicly owned and publicly accessible - includes areas where access is free of charge but limited or managed in some way
- (2) Publicly owned and provides for restricted public access and/or use - includes areas where access is not possible by the public most of time or access is significantly restricted by fees and charges and/ or barrier fencing
- (3) Privately owned or leased. Public access prohibited or significantly restricted
- (4) Parks where land acquisition or transfer and/or associated infrastructure delivery is incomplete
- (5) Future parks where land and infrastructure delivery has not yet commenced
- (6) Reserves where land acquisition or transfer and/or associated infrastructure delivery is incomplete
- (7) Future reserves where land and infrastructure delivery has not yet commenced

Source: Department of Environment, Land, Water and Planning

© The State of Victoria Department of Environment, Land, Water and Planning 2017.

**Disclaimer** This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication.



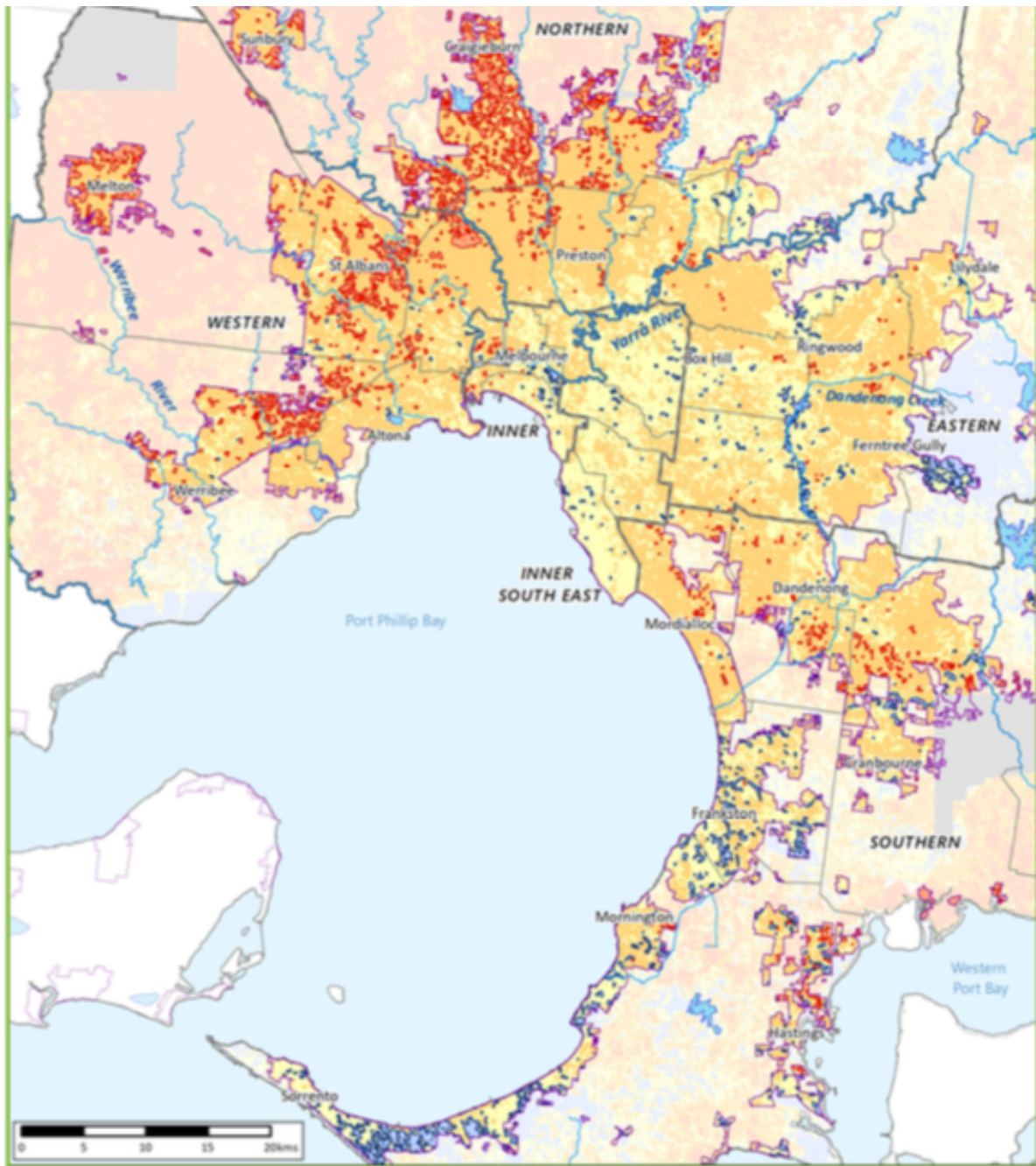
Environment,  
Land, Water  
and Planning

## Heat Island Effect

Heatwaves are the deadliest natural hazard in Australia, and Melbourne is facing a future of them being more common, longer and intense. In urbanised areas, increased pollution, hard infrastructure and impervious surfaces have resulted in pockets of spaces with even higher temperatures than their surroundings. This phenomenon is known as the 'urban heat island effect' and puts residents in these areas at a higher risk of suffering from extreme heat.

Our plants, waterways and green spaces are necessary environmental infrastructure to cool our city. As seen in Figure 3, the blue dots along the Yarra River demonstrate just how vital the corridor is for regulating the temperature of its surroundings. In areas without this existing environmental infrastructure, one of the most effective strategies is to increase shade by canopy cover, have more natural vegetation and replace hard surfaces like roads with natural permeable surfaces. Currently, Melbourne has the lowest urban tree canopy cover across Australia and the quality and distribution of the canopy cover varies significantly across the city, being especially low in the west (refer to figure 4). As every day marks a day of rising temperatures and a reduction in the survival of current and future plants, the chances to implement cooling strategies and reap the rewards of increased vegetation need to be put in place as soon as possible.





#### Legend

- Metropolitan Partnership Boundaries
- Local Government Areas
- Urban Extent as of 2015
- Major Rivers and Creeks
- Lakes and Reservoirs
- Tree height data not available

#### Estimated temperature difference from non-urban equivalent

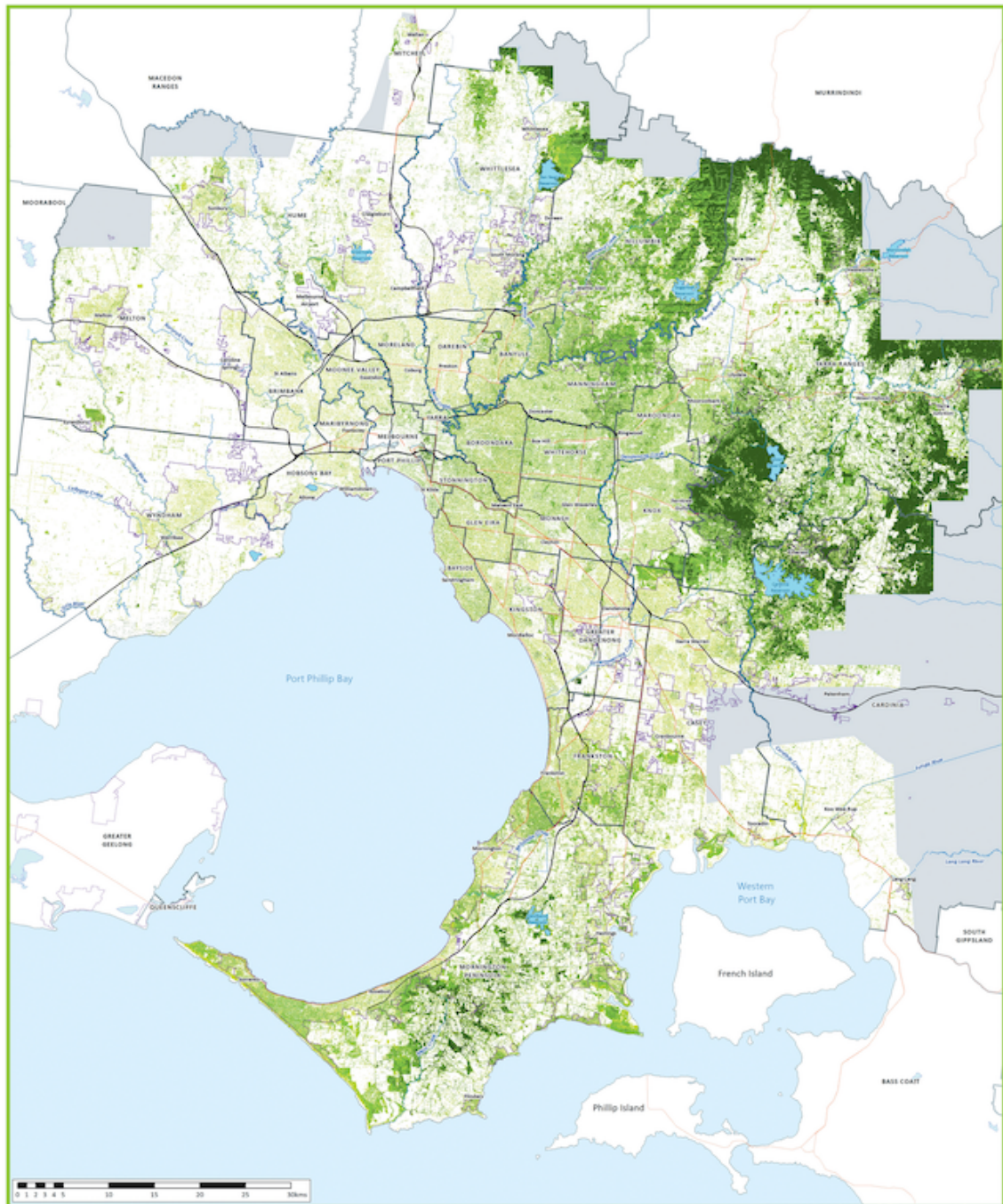
- < 0°C
- 0 - 5°C
- 5 - 10°C
- > 10°C
- Cool spot (< 0°C)
- Hot spot (< 10°C)

Areas identified as Cool spot or Hot spot greater than 1 ha in area

Figure 10: Urban heat islands across metropolitan Melbourne. Hot spots (> 10°C warmer than non-urban conditions) bordered in bright red. Cool spots (areas that are equal to or below their estimated non-urban baseline temperature = < 0°C) bordered in dark blue.

Urban heat islands across metropolitan Melbourne. Resilient Melbourne and the Nature Conservancy. Accessed via [https://resilientmelbourne.com.au/wp-content/uploads/2019/09/LivingMelbourne\\_Strategy\\_online3.pdf](https://resilientmelbourne.com.au/wp-content/uploads/2019/09/LivingMelbourne_Strategy_online3.pdf)





## Melbourne's urban forest

### Legend

- Local Government Areas
- Urban Extent as of 2015
- Freeways
- Major Roads
- Major Rivers and Creeks
- Lakes and Reservoirs
- Tree height data not available

### Vegetation Heights

- 0.3 - 3m
- 3 - 10m
- 10 - 15m
- > 15m

**Living Melbourne**  
Our metropolitan urban forest



## Sport versus Reflective Recreation

Reflective recreation is, often inappropriately, called passive recreation. It is one of the most valuable ways our parklands are experienced. More people walk and ride than plan any other sport. It is low cost and doesn't damage the environment in such a way as to reduce other environmental services provided by parklands such as cooling. This form of experiencing the river as by its nature reflective is not an organized activity. Government support for walking is focused on walking as a transport option rather than as healthy social experience. Currently there is no government strategy for walking as a recreation. Such a strategy is needed, and government needs to expand the remit of Walking Victoria to include all forms of walking, especially including walking for pleasure.

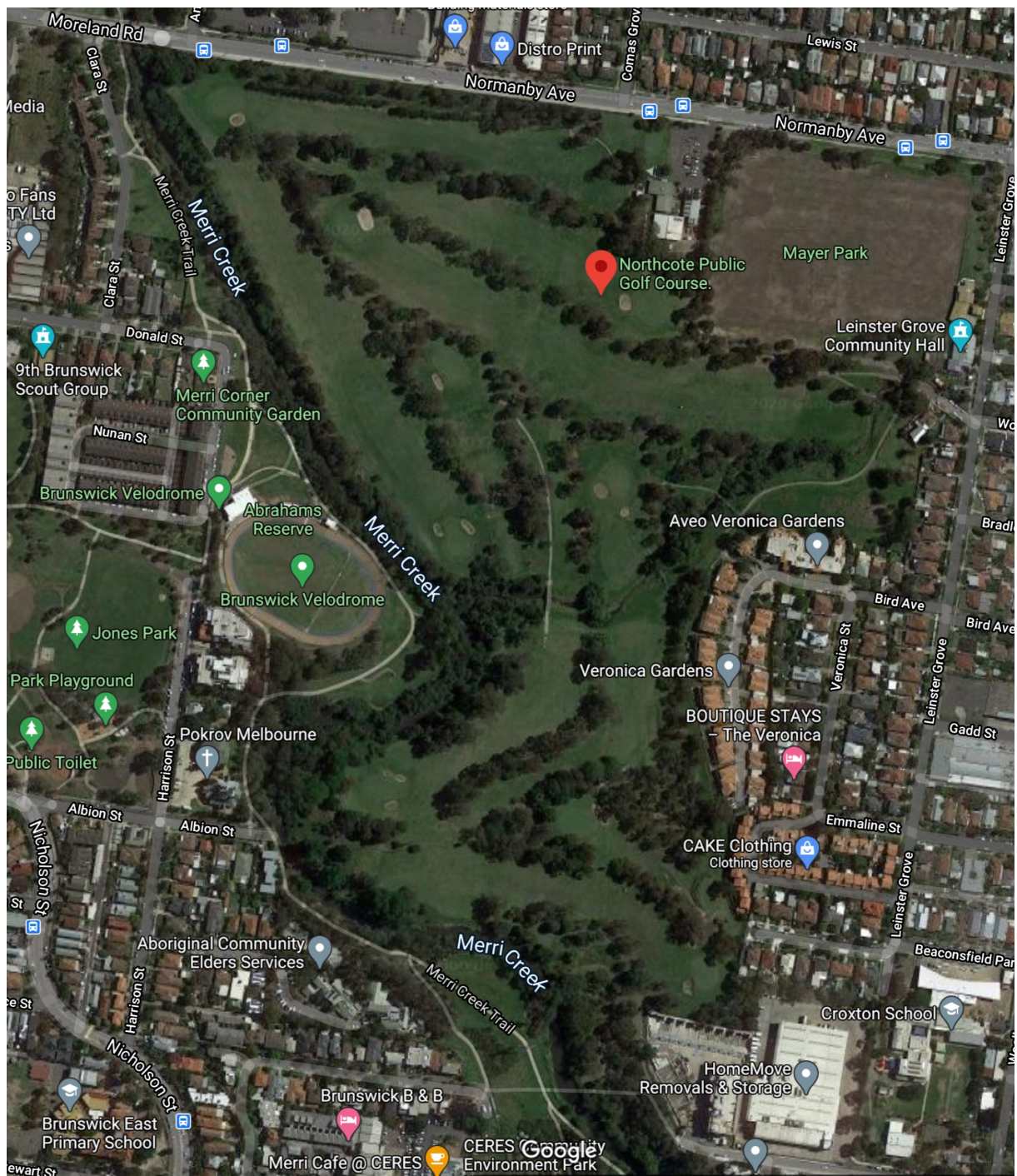
## Golf Courses

Significant amounts of Victoria's open space are locked up in golf courses. The golf courses have done an excellent job of protecting nature along the waterways. As urban parkland space has become more valuable with the expansion of population it is timely to reconsider these courses, either for shared use or as parkland. A typical 18-hole golf course requires 11,000 square metres of open space (Sunday Age p 13 27.9.2020). There are more people who want to walk on fairways than hit-off with a driver from the tee. There is an opportunity for shared use on both council and private courses, say using council subsidies for private courses to allow for alternate days of golf and reflective recreation, whether walking, strolling or picnicking. There are several examples which help outline the opportunity.

### *Northcote Golf Course*

With the Covid 19 lockdowns, there is a community push to either convert the golf course into public open space or to have shared space use with golf being restricted to only some days. Hundreds of local residents are seen on the course each day now it is closed for golf – many more than the daily number of golfers. It is logical to allow land to be assigned to the highest use, yet with a roster both activities can exist side-by-side. Direct conversion of a golf course into parkland is costly, so the shared model is appealing.





### *Elsternwick Golf Course*

This is an example of a golf course that is successfully being converted into parkland including a wetland. It is a model to follow. The course has been wilded and returned to more natural conditions. It is a bio sink for the surrounding suburbs, supporting insects and birds that keep gardens healthy through pollination and other services. It is notable that a third of all Victorian bird species pass through the golf course, and its conversion will eliminate fertilizer (which leads to eutrophication) and herbicides and pesticides, with the expectation

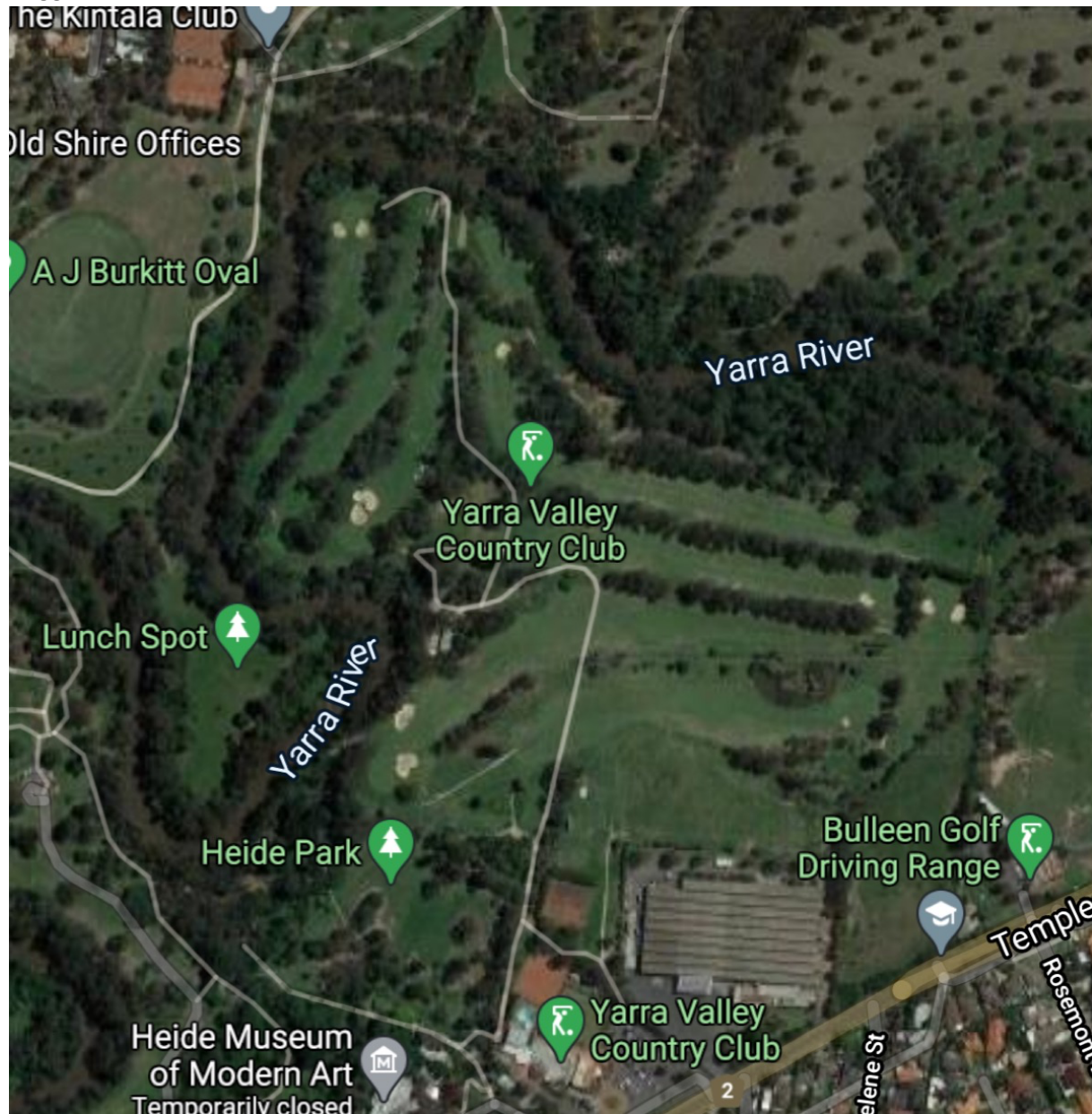
that the birds and mammal species will thrive. This site will sequester more carbon as parkland than as a golf course. The drainage lines will be restored and the soil better hydrated leading to better drought resistance.





### *Yarra Valley Country Club*

The club is being developed. Much of the club is on floodplain and the developers have offered the floodplain land to the crown. This is the last big opportunity for expanded parklands along the lower Yarra and there is an urgent need to accept the offer and return the land to the public. It is an opportunity that the community of Melbourne cannot afford to miss.



### **Development**

In areas of the development there needs to be changes in the way open space is defined. The layout of a subdivision and then earthworks are undertaken without adequate site analysis. Existing wetlands are bulldozed, and sodic soils are exposed. The current methods in the planning schemes mean that the spaces included in new developments are too small



to provide adequate habitat. Developers need to be responsible for the maintenance of the open spaces for an extended period of time after the completion of the subdivision.

#### *Sodic soils*

Sodic soils are a particular issue for the environmental infrastructure of waterways. This are highly dispersive soils when they are wetted, from, say, rain. The soil particles rapidly wash into waterways making them highly turbid and killing off the macroinvertebrates that are the base of the food chain. While a breach of EPA standards, these standards are not enforced as it is treated as a technical breach only.

#### **Mountain Bikes**

Mountain bikes are a particular issue for environmental infrastructure as they are exploding in popularity and have the ability to go pretty much anywhere in parkland. The presence of a large number of illegal mountain bikes in Melbourne's parks, in particular, are causing a rapid degradation of the parks through widespread stripping of native herbs, forbs and grasses, and a consequent erosion as well as a spread of weeds. Mountain bike riders, especially those not associated, with a club are often aggressive in asserting there supposed 'rights' over park users. Parks Victoria while providing some excellent legal mountain bike tracks are unwilling to enforce excluding them from other often ecologically fragile locations where mountain bike riding is illegal. The key to the expanding threat of the mountain bike riders is the increasing ability of the bikes to go anywhere and the sense of entitlement the riding community has, as well as the riders' willingness to disregard the health of the environment in which they play.

#### **Areas for Wildlife**

It is Panglossian to think that we can simultaneously maximize quality wildlife habitat and recreational opportunity. The inquiry needs to recommend that a sizeable number of native species require undisturbed areas for some or part of their life cycle. During nesting, many species of birds, have a low tolerance for human intrusion in the area of the nest, and will abandoned the nest if too frequently disturbed. The presence of people may also keep species away from food sources. Disturbance at night through noise and lights is a particular problem for shy nocturnal species. With our expanding population

### *Recommendations*

1. Green Infrastructure Victoria be established to understand, assess and advocate for environmental Infrastructure.
2. Support and fund an ambitious Yarra Strategic Plan – it will look like an inexpensive investment when we look back in the future.
3. The government develops a walking-as-recreation policy to better represent the large numbers of people who use environmental infrastructure for walking as a recreation and as a mode of experiencing nature.
4. Invest in the Great Birrarung Parkland.
5. Consider carefully the application of the System of Environmental Economic Accounts in the assessment and policy regime for environmental assets. This needs to be done in a limit way to ensure that the information is accurate and suitable for the making of policy and should always be considered in the light of the System's limitation.

### *Closing comment*

Thank you for the opportunity of submitting and we appreciate the committee's interest in this important topic.

To ensure that environmental infrastructure can continue to provide benefits to the community, and environment, there needs to be a set definition and vision for protecting and growing environmental infrastructure. When planning for the future of Melbourne, and how to accommodate the many needs of the community, there needs to be innovation in how green spaces and parks are envisioned. Development to accommodate for a growing population, and to combat issues of climate change and environmental degradation, will need to be smart about the water that our landscape needs, how to cool our city, limit the impact and occurrence of extreme weather events and give the community more diverse ways of connecting and interacting with nature. This is not beyond the realm of possibility, inspiration can be taken by looking internationally to other cities that have faced similar challenges of learning from past mishaps of replacing environmental infrastructure with hard, built infrastructure, or who face limitations on available public land. There are also local projects that can be drawn upon and copied. There needs to be a proportion of environmental infrastructure, select pockets of rich biodiversity, that is reserved for nature and not for people. Current and future planning should treat the land as being of use for all levels of living things that rely on it, addressing the issue of a growing population should not come at the expense of protecting our environment.

Yours sincerely,

Andrew Kelly  
Yarra Riverkeeper  
on behalf of the Yarra Riverkeeper Association



