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Peer Review of

Amendment C286yarra

Open Space Project Cost Apportionment

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Final Report

Prepared on behalf of Yarra City Council

August 2nd, 2023

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1. Introduction

1.1 Purpose of Review

I was engaged by Maddocks, working on behalf of Yarra City Council, to review apportionment costs associated with Yarra Planning Scheme Amendment C286yara Open Space Contributions. I understand the amendment proposed to increase the public open space contribution rate in the schedule to clause 53.01 from 4.5% to 10.1% to collect funds to support the implementation of the Yarra Open Space Strategy 2020.

The following report has been prepared in response to the Panel's interim report recommendation for Yarra City Council to undertake a peer review of apportionment costs associated with Council's proposed public open space contributions. An overview of the Panel's interim report findings and the details of the specific peer review apportionment recommendation are outlined below.

1.2 Panel Interim Report Findings and Recommendations

The Panel's interim report was received on 14 April 2022 and became a public document on 3 May 2022. In the Executive Summary, the Panel Report states:

> *The key focus of those opposed to the Amendment was that the increase in the open space contribution rate from the current 4.5 per cent of land area or site value to 10.1 per cent is excessive. The increase was opposed because:*
>
> - *some open space projects proposed were not needed;*
> - *the cost of both the land and capital components of the costs of open space projects was excessive;*
> - *the apportionment of total project costs between existing and new users of open space was inappropriate;*
> - *there were no transitional provisions for projects part way through their approval processes; and*
> - *there would be a detrimental impact on housing affordability.*

Panel Report Peer Review Recommendation

I note that the Panel Report (16 May 2022) recommends a Peer Review of apportionment costs. I also note the following Panel report comments about the recommended Peer Review, located in Section 8.3 of the report:

The Panel does not consider its role is to tightly specify the terms of a peer review of the apportionment exercise undertaken by Ms Thompson but does consider it appropriate to indicate some of the parameters of that review so that its expectations are met when the outcome of that review (if undertaken) is considered by the Panel.

The suggested parameters for the peer review are:

- *The review should be undertaken by at least one suitably qualified person with open space planning experience.*
- *The review should be restricted to the apportionment of project-by-project costs between existing and new populations. Population forecasts and project costs should not be the subject of review.*
- *The qualitative methodology used in the apportionment of costs is acceptable and should not be the subject of review.*
- *The Panel concludes that the eight factors influencing the apportionment of costs listed in paragraphs 3.3.3 and 3.3.4 of Ms Thompson's expert witness statement (Document 25) and reproduced in Chapter 4.3 are acceptable and should not be the subject of review, although commentary on them and their relative importance could be considered.*
- *The extensive field work undertaken by Ms Thompson need not be repeated provided relevant records can be provided to the reviewer.*
- *Where the reviewer finds that the apportionment of costs is different to that proposed by Ms Thompson, the reviewer's recommended apportionment should be provided together with a clear rationale for the recommended change.*

Panel Report Conclusions

Having considered submissions and evidence, the Panel broadly concluded the following:

- *the Yarra Open Space Strategy, 2020, is strategically justified and is a sound and appropriate strategy*
- *there is a clearly established need for the existing open space contribution rate to be increased as a matter of some urgency*
- *the open space projects proposed to meet identified needs are with a minor exception, supported*
- *the proposal by Council to add 30 per cent (adjusted down to 20 per cent during the Hearing) to Capital Improved Value of land to be acquired for new open space is not supported by the Panel which regards 10 per cent as appropriate*

- *the amount of the total costs apportioned to new residents and workers has not been adequately justified and should be subject to peer review before the Amendment can be finalised*
- *the Hearing be adjourned pending the completion of this further work*
- *while this further work recommended by the Panel is being undertaken, Council should seek approval from the Minister for Planning for an interim increase in the open space contribution rate to 7.4 per cent. This would occur via the preparation of a new Planning Scheme Amendment.*

For the reasons set out in Chapter 8, the Panel considers its report to be an interim one pending the completion of the extra work recommended by the Panel. A final report will be prepared after that work has been undertaken.

1.3 Overview of My Peer Review Methodology

Based on the Panel's recommendation, my review process methodology has consisted of the following steps:

- A peer review of the reports prepared by Joanna Thompson in relation to open space provision in the City of Yarra including her methodology (including her weighting criterion) for determining a public open space contribution rate and calculating apportionment rates for the projected new residential and worker population by 2031.
- Upon gaining a detailed understanding of these reports and her methodology, I outline and discuss an alternative methodology based on the use of various targets contained within the Victorian Planning Authority's (VPA), Precinct Structure Planning Guidelines (PSP Guidelines): New Communities in Victoria (October 2021).
- My alternative methodology compares the residential and worker population density targets recommended by the PSP Guidelines and the existing and projected residential and worker population densities across the City of Yarra's ten precincts. On this basis I have developed a weighting system that focuses on two key factors: 1) the existing and projected residential population densities of each precinct relative to the target specified in PSP Guidelines (20 dwellings per NDA hectare / 62 persons per Net Developable Area hectare), and 2) the existing and projected worker population densities of each precinct relative to the target specified in PSP Guidelines (1 worker per dwelling / 20 workers per Net Developable Area hectare).

Based on my reading of the Panel Report recommendations, I do not critique several of the fundamental inputs required for calculating the public open space rate, including:

- The open space projects and costs estimated by Ms Joanna Thompson;
- Population forecasts;
- Worker forecasts; and
- The estimated value of land that will be redeveloped in the City of Yarra (2016-2031) as outlined in the report prepared by Edg Research.

2. Peer Review Analysis

2.1 Overview of Material Reviewed

This section provides my review of a number of relevant reports prepared by Joanna Thompson and her company Thompson Berrill Landscape Design Pty Ltd.

The purpose of my review was to gain an understanding of how Joanna Thompson arrived at the proposed public open space contribution rate of 10.1% and whether, in my opinion, her methodology, and more specifically her apportionment methodology, is appropriate and replicable.

The reports reviewed were:

- Yarra Open Space Strategy 2020 (September 2020).
- Yarra Open Space Strategy 2020: Technical Report (July 2020).
- Yarra Open Space Strategy 2020: Public Open Space Contributions (December 2020).
- Joanna Thompson Expert Witness Statement: Amendment C286 City of Yarra Planning Scheme Public Open Space Contributions (December 1, 2021).
- Memorandum prepared by Joanna Thompson. Yarra Planning Scheme Amendment C286 Yarra Open Space Strategy Open Space Contributions. Response to Planning Panels Victoria Direction #2 on 20 December 2021 and further Directions #1 and #2 on 6 January 2022. Apportionment (January 31, 2022).
- Summary Preliminary Opinion of Probable Cost City of Yarra Open Space Strategy, 2020 (POPC).
- Memorandum prepared by Joanna Thompson. Yarra Planning Scheme Amendment C286. Yarra Open Space Strategy Open Space Contributions: Response to Planning Panels Victoria Direction #3 on 20 December 2021 - Alternative scenarios regarding the cost allowance on CIV land acquisition costs (January 18, 2022).

- Memorandum prepared by Esther Kay. Municipal public open space contribution rate with 10% and 20% allowances added to Capital Improved Value for land purchase (January 24, 2022).
- Planning Panels Victoria, Yarra Planning Scheme Amendment C286yara. Open Space Contributions. Correction to the Interim Panel Report (May 16, 2022).
- Victorian Planning Authority, Precinct Structure Planning Guidelines: New Communities in Victoria (October 2021)

2.2 My Interpretation of Joanna Thompson's Public Open Space Contributions Apportionment Methodology

2.2.1 Overview of the Public Open Space Calculation Equation

It is worth summarising the overall public open space contribution calculation equation to understand how the issue of apportionment fits in and why it is important.

I am aware that the total dollar value of open space projects allocated for new population was originally based on the use of the 30% Capital Improved Valuation (CIV) for land acquisition costs. However, the Panel Report does not support the use of this CIV scenario and has recommended that "…an allowance of 10 per cent applied to the average CIV to reflect Council's administrative and land acquisition costs". As a result of the Panel recommendation, I have adopted the 10% CIV scenario costs (refer to Attachment 1 for more details of the 10% CIV calculations) for the purposes of my alternative apportionment methodology presented in Section 2.8[1].

Joanna Thompson states that the public open space contribution rate for the purposes of Clause 53.01 has been calculated using the following equation:

"Total value of the allocation of costs to the forecast population" divided by "Total site value of the estimated land area to be developed" to accommodate the forecast population

She states that "the first part of the equation equates to the averaged opinion of costs (or equivalent value) of open space projects included in the Strategy that will be paid through public open space contributions on behalf of the forecast increase in residents and workers".

[1] I am also aware that a public open space contribution rate was calculated for the 20% CIV scenario which produced a contribution rate of 9.35% and a 10% CIV scenario which produced a contribution rate of 8.67%.

She then states that "the second part of the equation assigns forecast dwellings and non-residential floor space to the estimated area of land that will be developed based on likely densities with respect to zones, overlays and market trends. The site value of this land is then determined and used in the equation".

She notes that "in developing the data to populate the equation, both parts of the equation have used the same geographic area, population data and time period to ensure that there is a clear relationship between future plans for the open space network – referenced in the first part of the equation – and the rate to be levied on future subdivisions of land and buildings – referenced in the second part of the equation".

The public open space rate arrived at by the Open Space Strategy (using the 30% CIV scenario) is identified as follows:

Part A Total dollar value of open space projects allocated for new residential and worker population using the 30% CIV Scenario		**Part B Estimated Capital Improved Value of New Land Development**		**Part C Public Open Space Contribution Rate Using the 30% CIV Scenario**
$382,535,769	Divided by	$3,789,238,620	=	10.1%

The focus of my review is on Part A of this equation: total dollar value of open space projects allocated to the proportion of the new residential and worker population by 2031.

Although the Part A dollar value estimate refers to value of open space projects allocated for the projected new residential and worker population, Joanna Thompson's method of arriving at this figure relies far more heavily on a complex array of other qualitative considerations than purely new population forecasts.

I have attempted to illustrate how these two approaches deliver vastly different outcomes both in terms of the value of projects allocated to the proportion of new residential and worker population by 2031, and the public open space contribution rate. I refer to these as Method 1 (Forecast New Residential and Worker Population Method) and Method 2 (Eight Factor Apportionment Method) which represents the method used by Joanna Thompson.

2.2.2 Method 1 – Forecast Residential and Worker Population Method Only

New Residential and Worker Population Assessment

I prepared my own calculations to first understand what the public open space rate would be if only the proportion of new residential and worker population by 2031 were considered (refer to Attachment 2 for more details).

As shown in Table 1 below, if the proportion of new residential and worker population by 2031 for each precinct within the City of Yarra was the only variable used to apportion costs, the resulting total dollar value of open space projects allocated to the proportion of new residential and worker population by 2031 would be $191,516,192. The public open space rate achieved using this method is 5.1%, significantly less than the 10.1% proposed by the Open Space Strategy.

Table 1 - Project Apportionment Costs by Precinct Using Proportion of New Residential and Worker Population Growth Only

Precinct	Total dollar value of proposed open space projects[2]	Proportion existing residential and worker population by 2031	Proportion new residential and worker population by 2031	Total dollar value of proposed open space projects allocated to existing population	Total dollar value of proposed open space projects allocated to new population
Abbotsford	$15,910,482	73%	27%	$11,614,652	$4,295,830
Carlton North - Princes Hill	$10,461,318	100%	0%	$10,461,318	$0
Central Richmond	$53,299,684	79%	21%	$42,106,750	$11,192,934
Clifton Hill	$5,120,000	89%	11%	$4,556,800	$563,200
Collingwood	$147,856,471	61%	39%	$90,192,447	$57,664,024
Cremorne - Burnley - Richmond South	$157,614,101	60%	40%	$94,568,461	$63,045,640
Fairfield - Alphington	$6,266,108	32%	68%	$2,005,155	$4,260,953
Fitzroy	$78,681,285	69%	31%	$54,290,087	$24,391,198
Fitzroy North	$17,926,385	82%	18%	$14,699,636	$3,226,749
North Richmond	$76,252,211	70%	30%	$53,376,548	$22,875,663
Total City of Yarra	$569,388,045			$377,871,853	$191,516,192
Public Open Space Contribution Rate Achieved					**5.1%**

[2] Note: Costs based on the 30% CIV scenario for land acquisition costs.

2.2.3 Method 2 – Eight Factor Apportionment Method

The details of Method 2 used by Joanna Thompson is outlined in her memorandum document (Memorandum. Yarra Planning Scheme Amendment C286 Yarra Open Space Strategy Open Space Contributions, January 31, 2022). At section 1.4 of the memorandum, I note she diverges from the Method 1 approach. She states that "the relative proportion of the overall existing and future population did not have a key role in determining the proposed apportionment of cost. While the quantum of population is relevant, the apportionment is based on consideration of all the factors that generate the need for open space and the impacts on the open space network in a particular area, from both the existing and forecast populations."

In the memorandum document she outlines a more qualitative approach to determining the public open space contribution rate and apportionment methodology. The following eight factors are taken into account in apportioning open space project costs between the existing and new residential and worker population:

1. Existing open space within the precinct;
2. Spatial distribution of existing open space;
3. Hierarchy, character and condition of the existing open space;
4. Existing level of use and satisfaction with open space;
5. Existing urban layout;
6. Location and magnitude of forecast future resident and worker population growth;
7. Future population densities; and
8. Proposed urban form.

She states *"there are four broad steps in this process which determine the scale and type of projects and also the basis of the apportionment. The steps are:*

- ***Step 1*** *Assess and understand the existing open space network including how it functions for the existing population who live and work there, and what changes are required to meet the needs of the existing population. This involves research, site visits and review of the community surveys (worker and resident surveys) to understand the existing patterns of use.*
- ***Step 2*** *Assess and understand the type and scale of the forecast change, to determine what open space needs will be generated by this change. Part of this assessment includes considering the impact of this change on the existing open space network. This includes a review of the population forecasts, analysis of the spatial distribution of the forecasts relative to the open space network, site assessments to understand the scale of the proposed change on the open space and a review of relevant background documents about the forecast change.*
- ***Step 3*** *Make recommendations about what changes are required to address the open space needs of the existing and the forecast population. This includes the Actions to provide new open space and also upgrades to the existing open space network, which are included in the Strategy POPC. Part of determining the actions*

includes site assessments to identify what is feasible to implement in the context of the existing development and urban layout. It is important to note that the Strategy also includes recommendations and actions for changes that are not included in the contribution rate but will benefit the existing and forecast population including changes to the Municipal open space network and guidelines regarding the future design and management of open space.

- ***Step 4*** *For each eligible recommendation assess and determine the appropriate proportion of cost attributable to the existing and forecast population based on the assessment in steps 1 to 3. The method for undertaking the apportionment is explained further in Sections 3 and 4 of this Memorandum".*

The financial calculations arrived at by Joanna Thompson using this method is presented in the "Summary Preliminary Opinion of Probable Cost City of Yarra Open Space Strategy 2020" document which I have included in Attachment 1 (using allowance scenario 2 based on 10% capital improved value – "CIV" - for land acquisition costs). While I believe the qualitative considerations embedded into these apportionment ratios are valid, the systematic and consistent application of this method is problematic given the high level of subjective judgement required to determine which apportionment ratio to use for particular factors and what weighting to apply to these factors. The resulting project apportionment costs by precinct are summarised in Table 2 below.

Her apportionment for each project is based on considering the relevant qualitative factors using the eight key factors identified above. The apportionment of the total cost between existing and forecast development is expressed as a percentage. These are expressed in the form of six apportionment ratios (structured in 10 per cent increments) which are summarised in Table 3 on the following page.

Table 2 - Project Apportionment Costs by Precinct (based on 10% CIV Allowance Scenario)

City of Yarra Precinct	Total dollar value of proposed open space projects$	Total dollar value of proposed open space projects allocated to existing residential and worker population $	Total dollar value of open space projects allocated to new residential and worker population $
Abbotsford	$15,136,176	$7,822,992	$7,313,184
Carlton North - Princes Hill	$9,303,720	$8,838,534	$465,186
Central Richmond	$46,360,440	$21,412,109	$24,948,331
Clifton Hill	$5,120,000	$4,096,000	$1,024,000
Collingwood	$126,915,054	$42,175,825	$84,739,230
Cremorne - Burnley - Richmond South	$135,230,839	$34,641,802	$100,589,038
Fairfield - Alphington	$6,266,108	$2,880,814	$3,385,294
Fitzroy	$68,787,084	$26,063,069	$42,724,016
Fitzroy North	$13,300,170	$4,951,919	$8,348,251
North Richmond	$64,691,460	$9,789,043	$54,902,418
City of Yarra	**$491,111,053**	**$162,672,106**	**$328,438,946**

Table 3 – Joanna Thompson's Apportionment Ratios

Apportionment	Reasons for the apportionment
10 / 90	• The need for the project is primarily driven by one group (i.e. either existing or forecast) of the population with some benefit (as distinct from the need) as a result of the project being delivered to the other group. • Typically this apportionment ratio applies where: ○ In the case of 10 (existing) / 90 (forecast) the existing open space network adequately meets the open space needs of the existing population and the magnitude of forecast change of more than 350 people creates a high demand for new open space or major upgrades to existing open space. ○ In the case of 90 (existing) / 10 (forecast) the existing population creates a high demand for new open space or major upgrades to existing open space and the forecast change is less than 350 people.
20 / 80	• The need for the project is high for one group of the population with the other group having a low need for the project. • Typically this apportionment ratio applies: ○ In the case of 20 (existing) / 80 (forecast) there is a low need for improvement to the open space network for the existing population and the magnitude of forecast change of more than 350 people creates a high demand for new open space or major upgrades to existing open space. ○ In the case of 80 (existing) / 20 (forecast) the existing population creates a high demand for new open space or major upgrades to existing open space and the forecast change is less than 350 people.
30 / 70	• The need for the project is high for one group of the population with the other group having a moderate need for the project. • Typically this apportionment ratio applies: ○ In the case of 30 (existing) / 70 (forecast) there is a moderate need for improvement to the existing open space network for the existing population and the magnitude of forecast change of more than 350 people creates a high demand for new open space or major upgrades to existing open space. ○ In the case of 70 (existing) / 30 (forecast) the existing community creates a high demand for new open space or major upgrades to existing open space and the magnitude of forecast change is less than 350 people with other factors having an influence on the need beyond the magnitude of the forecast change within that precinct. For example the need for the upgrade to larger open space reserves is created by the forecast change in adjoining precincts where there is a lack of larger open space reserves.

Table 3 continued

Apportionment	Reasons for the apportionment
40 / 60	• The need for the project is high for both the existing and forecast population but with other factors resulting in a difference. • Typically this apportionment ratio applies where the existing open space network requires major improvements to meet the needs of both the existing and forecast population, with additional factors also being relevant such as the magnitude of the change (i.e. substantially more than 350 people) or the implications of the change in urban densities.
50 / 50	• The need for the project is high for both the existing and forecast population. • Typically this apportionment ratio applies where the existing open space requires major upgrade or where new open space is needed for both the both the existing and forecast population; or • Alternatively, this apportionment ratio applies where the existing open space network is adequate with capacity for additional use and the forecast change is less than 350 people and can be accommodated in the existing open space network but will require consequential upgrades to the existing open space facilities.
95 / 5	• The need for the project is high for one group and will deliver a minor benefit to the other group. • Typically this apportionment ratio applies where the need for the project is primarily driven by the existing population and a minor benefit will be provided to the forecast population. This may include the forecast population in adjoining precincts.

The details of how Joanna Thompson applies these ratios to each open space project is presented in Attachment 1 (Summary Preliminary Opinion of Probable Cost City of Yarra Open Space Strategy 2020) using the 10% capital CIV allowance scenario (Scenario 2).

I find the use of these apportionments problematic because they do not reflect the projected residential and worker population growth estimates in any consistent mathematical way.

2.3 My Opinion of the Open Space Strategy Apportionment Methodologies

In my opinion Method 1 is a far simpler and more replicable apportionment methodology than Method 2. For this reason, it is also a far simpler approach to apply to other Local Government settings. However, the great weakness of this method is that it fails to reflect the genuine and complex open space needs of high density inner suburban municipalities such as the City of Yarra and fails to provide sufficient financial resources to implement important open space measures that many locations within the City of Yarra desperately need.

In my opinion Method 2 is a far more subjective and difficult apportionment methodology to replicate with any great consistency across different Local Government settings. For example, it would appear difficult for any two open space planners to agree on which of the six apportionment ratios to apply to any particular project. However, I do acknowledge the more nuanced and complex understanding of local open space needs that this method allows for.

For the reasons outlined above, I believe an alternative apportionment methodology is required to establish a fair and reasonable public open space contribution rate, the details of which I explain in Section 2.8.

2.4 The Contrast between Greenfield and Inner Urban Renewal Open Space Planning

I have conducted numerous community infrastructure assessments (which includes analysing open space needs) over the past 20 years across both greenfield growth areas and infill / urban renewal locations in established areas. Planning open space in a PSP area that will accommodate 20,000 people is far easier than planning open space for 20,000 people in an inner urban renewal location. PSP's largely provide a 'blank canvas' to work with which makes the task of determining the quantity, type and distribution of open space to provide for (including achieving high quality co-location outcomes such as placing open space beside a school or a community centre) relatively straightforward.

However, one of the more significant differences between the two settings has been the statutory mechanisms and planning guidelines which apply to the open space planning process.

Open space outcomes in greenfield PSP locations, typically overseen by the Victorian Planning Authority (VPA), are generally the product of two driving factors: 1) Precinct Structure Plan Guidelines (PSP Guidelines) which dictate the amount, type, size and distribution of unencumbered public open space, and 2) the unique physical and environmental characteristics of the Precinct Structure Plan area (e.g. waterways, drainage reserves, conservation areas and utility easements) which typically results in the delivery of encumbered[3] open space.

In established areas public open space contributions are largely a function of the application of the Subdivision Act and the Schedule to Clause 53.01 of the Victorian Planning Provisions.

[3] Defined as land that is constrained for development purposes. Includes easements for power/transmission lines, sewers, gas, waterways/drainage; retarding basins/wetlands; landfill; conservation and heritage areas. This land may be used for a range of activities (e.g. walking trails, sports fields). This is not provided as a credit against public open space requirements. However, regard is taken to the availability of encumbered land when determining the open space requirement.

2.5 Precinct Structure Planning Guidelines: New Communities in Victoria (October 2021)

The Precinct Structure Planning Guidelines: New Communities in Victoria (the PSP Guidelines) are a Victorian Government initiative to ensure the VPA and other planning authorities prepare plans for places that enable best practice, liveable new communities for Victoria.

The purpose of the PSP Guidelines is to provide the framework for preparing PSPs that guarantees quality outcomes while also being flexible, responsive and supportive of innovation by setting aspirational goals for our future communities. The approach provides a transitionary model enabling 20-minute neighbourhoods to evolve over time and achieve the objectives as the area matures. The Guidelines are based on planning for 20-minute neighbourhoods, a principle in Plan Melbourne 2017-2050 (Plan Melbourne) that advocates for living locally to ensure accessible, safe and attractive local communities. There is a key section within the PSP Guidelines that is specifically relevant to open space planning but labelled under the term 'public realm'. Part 3 (Constructing a PSP) includes public realm section which aims to:

- **Offer High-Quality Public Realm**
  - Offer high-quality public realm and open space
  - The public realm and open space network are crucial to creating the identity of a neighbourhood, and can have a significant impact on liveability, social cohesiveness, sense of place, the community's health and wellbeing, and the urban heat island effect.

Table 4 on the following page provides a summary of the key public realm (open space) principles, the application of these principles to the PSP process and key PSP targets. Most significantly, the PSP Guidelines enshrine the provision of an area based unencumbered public open space target. Target 11 (T11) of the PSP Guidelines states that the open space network should seek to meet the following minimum targets:

- Within residential areas (including activity centres):
  - 10% of net developable area (NDA)[4] for local parks and sports field reserves
  - 3-5% of NDA set aside for local parks
  - 5-7% of NDA set aside for sports field reserves.
- Within dedicated employment and/ or economic activity areas, 2% of the net developable area for local parks.

[4] Net Developable Area (NDA) is defined as land within a precinct available for development. This excludes encumbered land, arterial roads, railway corridors, schools and community facilities and public open space. It includes lots, local streets and connector streets. It may be expressed in terms of hectare units.

Table 4 – Key Elements of the PSP Guidelines Relevant to Open Space Planning

PSP Feature & General Principles	How to Apply to PSP	PSP / Performance Targets
Offer High-Quality Public Realm		
F 10. Local recreational spaces and facilities **Networks of open space and facilities that optimise the use of available land and provide equitable access to sport and recreation, leisure, environmental benefits, cultural benefits and visual amenity.**		
F 10.1 The open space network should include local parks that: • have a variety of sizes and proportions, generally ranging from 0.1 to 3 hectares • are located to enable access by local residents without having to cross significant barriers such as arterial roads, railways or waterways • provide a diversity of amenity experiences – both internal to the park and external interfaces that will provide an amenity context for development. Relevant VPP: Clause 56.05-2	• A Public Realm & Water Plan should be developed. The plan may demonstrate a diverse range of open space typologies that respond to place (for example, linear open space, waterway corridors, biodiversity areas and the productive use of encumbered land). The plan should show park sizes, preferred interfaces and walkable catchments (adjusted for significant barriers).	T11 The open space network should seek to meet the following minimum targets: • Within residential areas (including activity centres): - 10% of net developable area for local parks and sports field reserves - 3-5% of net developable area set aside for local parks - 5-7% of net developable area set aside for sports field reserves. • Within dedicated employment and/ or economic activity areas, 2% of the net developable area for local parks. Relevant VPP: Clause 19.02-6S, 53.01 T12 Open space and sports reserves should be located to meet the following distribution targets: • A sports reserve or open space larger than 1 hectare within an 800m safe walkable distance of each dwelling • A local park within a 400m safe walkable distance of each dwelling. Relevant VPP: Clause 56.05-2 Note: Includes sports reserves and public land that is encumbered by other uses but is capable of being utilised for open space purposes.
F 10.2 Proposed sporting reserves should be located, designed and configured to be: • targeted to forecast community needs, including design, landscaping and functionality accessible • appropriately meeting their purpose, having regard to shared use opportunities • able to take advantage of opportunities for alternative water supply (including co-location with stormwater harvesting and treatment facilities) • distinctive and responsive to local character and surrounding land use.	• A community needs analysis should be undertaken to inform the plan at preparation stage. • A Public Realm & Water Plan should show sporting reserve size, purpose and walkable catchments. • Typography should be considered when determining the appropriate location of sport reserves.	

PSP Feature & General Principles	How to Apply to PSP	PSP / Performance Targets
F 10.3 A network of diverse open space should be provided across the precinct that connects (via open space or major pedestrian/cycle links) to metropolitan or regional open space networks.	• A Public Realm & Water Plan should show linkages and connections, any barriers to connectivity, and measures to overcome barriers.	
F 10.4 The location and scale of open space should respond to and optimise integration with the existing topography, waterway features, landscape features, biodiversity conservation areas and cultural heritage values.	• A Public Realm & Water Plan should detail the features the open space network is responding to. • A PSP may include any relevant cross section/s of existing or proposed features. For example, waterway, conservation area, Water Sensitive Urban Design (WSUD) element with the surrounding urban form to clearly show expected development interface outcomes.	
F 10.5 The public realm network should be located, configured and designed to enhance and optimise the role of encumbered or restricted public land (for example, waterways, conservation, utility easements, schools) for multifunctional spaces and cater for a broad range of local users and visitors. Where possible, the provision of open space should be integrated with and/or link with waterways and Water Sensitive Urban Design (WSUD) elements. The public realm network should account for provision of multifunctional water management assets. Relevant VPP: Clause 56.05-2, 19.03-3S	• The community needs analysis should identify possible functions of each space. This could also include the potential role and function of school sports fields, waterways and/or floodways in contributing to the network. • Place-specific guidance should express expectations with regard to landscaping outcomes in open spaces and the public realm.	

2.6 Public Open Space Contributions Mechanisms

2.6.1 Overview of Mechanisms

In Victoria, local government has a number of legal mechanisms (or tools) available to it to obtain public open space contributions from developers, these being:

- For **open space projects** - Subdivision Act s18-20 and Schedule to Clause 53.01 of the Victorian Planning Provisions;
- For any type of **capital works project** - Development Contributions Plan Overlay via Part 3b of the Planning and Environment Act; and
- For any **legal and negotiated matter** – Voluntary Legal Agreements via s173 of the Planning and Environment Act.

The legislation (and where provided, guidelines and directions) specify how the tools can be used and in what circumstances. For the purposes of my review, I will briefly focus on the Subdivision Act and the Schedule to Clause 53.01 of the Victorian Planning Provisions.

2.6.2 Open Space Projects via the Subdivision Act

The Subdivision Act enables councils to seek a contribution for open space from subdivision proponents. The contribution amount is up to 5% of land area or cash value of the site value or a combination of both, if it can be justified, based on an assessment of need.

Some subdivisions are exempt from this requirement, including two lot subdivisions that are unlikely to be further subdivided and land and buildings that have made the contribution (or deemed to have made the contribution) previously.

On this basis councils can impose a condition of between **0% to 5%** open space contribution on subdivisions that are assessed as not exempt from the contribution. This can be applied to residential, commercial and industrial subdivisions and seek a particular method of contribution, such as land or cash or a combination of the two.

2.6.3 Open Space Projects via Schedule to Clause 53.01 of the Victoria Planning Provisions

Clause 53.01 of the VPPs expressly recognises the power of councils to obtain open space contributions under the Subdivision Act, and provides a mechanism for councils to amend the provisions to suit local circumstances.

The Schedule to Clause 53.01 enables a council to **set its own contribution rate(s)** subject to strategic justification. This can exceed the 5% limit of the Subdivision Act. The percent contribution can be tailored to meet the specific needs of areas and sub-areas, subdivision types (i.e. residential, commercial and industrial) and method of contribution (i.e. cash, land or both). Details of liability can be more clearly defined to suit local conditions.

Schedule 53.01 of the Yarra Planning Scheme currently specifies a public open space contribution rate of 4.5% applied to land or buildings intended to be used for residential purposes.

2.7 City of Yarra Public Open Space Supply Levels Compared to the PSP Guidelines Public Open Space Provision Target

Although there are many considerations associated with open space planning, the issue of supply is without a doubt the first and highest priority. For contextual purposes only, I have attempted to demonstrate how the City of Yarra's public open space supply levels compare to the public open space Provision target contained within the PSP Guidelines. Two key steps were required in order to compare the City of Yarra's public open space supply levels on a like-for-like basis. These were:

1. Calculating the amount of public open space in each precinct, but excluding all public open space classified as Regional and State, which is consistent with the PSP Guidelines and PSP planning practice more broadly[5];
2. Calculating the Net Developable Area (NDA) of each of the City of Yarra's ten precincts using the land use zoning data supplied by the City of Yarra[6].

Although my analysis of the City of Yarra's public open space supply levels does not form part of my alternative methodology for calculating a public open space contribution rate, it does highlight the magnitude of the

[5] Note: Although PSP's can include state or regional open space, developers are exempt from paying land acquisition and development costs associated with the delivery of these open spaces. State and regional open spaces, by their very definition, service a much larger population catchment than that population generated by the typical PSP.

[6] Note: The NDA of each precinct was calculated using total precinct site area and zoning data supplied by the City of Yarra and subtracting all land zoned Public Use Zone, Public Recreation and Resource Zone, Public Park and Recreation Zone, Urban Floodway Zone and Transport Zone 1 and 2. Refer to Attachment 2 for the City of Yarra Land Use Budget showing details of the NDA of each precinct.

problem confronting the City of Yarra in its efforts to provide its future residential and worker populations with access to a good network of well supplied, diverse, high quality and well-distributed public open space.

Thompson Berrill Landscape Design (TBLD) have been responsible for the preparation of the Yarra Open Space Strategy, and many other open space strategies in the inner Melbourne region (Port Phillip, Stonnington, Maribyrnong, Moonee Valley and Melbourne). Fortunately for this exercise, TBLD have a comprehensive and consistent method of classifying and measuring open space provision. In order to compare the level of difference between the 10% of NDA as unencumbered public open space target set by the PSP Guidelines and current public open space supply levels in the City of Yarra, I have used TBLD's excellent open space data and classification system to recalculate the proportion of public open space available in each of Yarra's precincts, excluding public open space classified as State and Regional. Table 5 below summarises the results of this recalculation. It clearly reveals the significant level of undersupply in many precincts within the municipality, in particular those locations projected to have significant residential and worker population growth such as Abbotsford, Collingwood, Fitzroy and North Richmond. Only four of the ten precincts exceed the 10% of NDA public open space provision target.

Table 5 – Proportion of Public Open Space as a Percentage of NDA by Precinct

Precinct	Total open space 2016 Hectares (minus State / Regional open space)*	Total NDA of Precinct#	Public Open Space as a % of NDA
Abbotsford	6.20	136.1	4.6%
Carlton North - Princes Hill	6.23	127.8	4.9%
Central Richmond	16.59	161.1	10.3%
Clifton Hill	22.44	99.6	22.5%
Collingwood	0.34	114.8	0.3%
Cremorne, Richmond South and Burnley	22.23[7]	113.2	19.6%
Fairfield - Alphington	7.63	142.3	5.4%
Fitzroy	2.25	125.3	1.8%
Fitzroy North	24.69	174.3	14.2%
North Richmond	4.99	170.1	2.9%
City of Yarra	**39.56**	**136.1**	**8.3%**

*Sources: *City of Yarra Open Space Strategy and #Yarra City Council.*

[7] Note: The City of Open Space Strategy identifies the Cremorne, Richmond South and Burnley precinct as having 39.59 hectares of regional open space on Table 7.6.1. However, based on the figures shown in Table 7.6.2 I believe this regional open space figure is an error and should be reduced to 22.75. The Open Space Strategy appears to have included the Burnley Golf Course in its calculations of regional open space. However, because it is classified a "restricted open space" I do not believe the Golf Course should be included in the supply of public open space.

2.8 An Alternative Apportionment Methodology

2.8.1 Overview of Key Factors

In this section I outline an alternative methodology which, in my opinion, provides a more robust and quantitative methodology using only two of the eight factors Joanna Thompson takes into account in apportioning open space project costs between existing and new residential and worker populations. These two factors are:

- Factor 6 - Location and magnitude of forecast future resident and worker population growth; and
- Factor 7 - Future residential population and worker population densities.

I note that at Part 3.3(iii) (on page 32-33) of the Interim Panel Report, the Panel discusses the open space needs of new residents and workers, stating:

> *Evidence that clearly establishes whether there is a significant difference in the level of use of open space between workers and residents was not presented to the Panel. The Panel considers that a strong point was made that the worker use survey did not establish that workers' use of open space is equivalent to that of residents and the Panel is inclined to agree with Mr Gobbo that common sense suggests that the use of open space by workers will be of a different nature and probably less than that of residents.*
>
> *However, it is unclear to the Panel whether any lesser use by workers would be significant and if so, how it would translate into the calculation of the overall future open space needs of workers. The Panel notes Council's submission that just because workers may use open space less often than residents, workers' need for open space is not of less importance than the need of residents and should be given equal weight. The Panel accepts the distinction between the use of and need for open space and agrees with Council that adopting need is the appropriate metric in calculating future of open space provisions. Adopting equal need and giving equal importance to the open space needs of all within the municipality underpins Council's approach and is consistent with the community focus sought by Open Space for Everyone.*
>
> *Other methods to take into account worker use of open space versus that of residents were canvassed during the Hearing, for example, the ratio adopted in the precinct structure planning for outer Melbourne and that proposed in the Arden DCP. Neither of these methods is appropriate for Yarra, it*

being an established, mixed use municipality rather than a 'green fields' area or a clearly delineated urban renewal area.

With regard to the issue of 'double dipping', the Panel notes that undoubtedly, some people live and work in Yarra and perhaps even in the same suburb or precinct. However, an analysis to determine the potential overestimation of the need for future open space on this account would be difficult and in the Panel's view unnecessary. It would not be as straight forward as simply reducing the amount of future open space by the percentage of people who live and work in Yarra. For example, how would one calculate the need for open space for a worker who also lives in Yarra and uses open space during both work hours and after work and at weekends? It could be argued that that person would place more demand on open space than if they only worked in Yarra and lived elsewhere, but would that higher demand be twice the demand of a worker not residing in Yarra, 50 per cent higher, or some other amount? What if their workplace was at one end of Yarra and their home at the other? In any event, the Panel considers that 'double dipping' in so far as it may occur would be inconsequential and would not materially change the amount of additional open space that should be provided to meet the needs of the new population of Yarra.

The Panel goes on to conclude that (on page 33)

- *the open space needs of new residents and workers are calculated appropriately;*
- *the open space needs of new residents and workers can be considered as equivalent for the purpose of calculating future open space provision.*

A summary of the rationale for this methodology and how it relates to the two factors I have selected from Joanna Thompson's apportionment methodology is outlined below.

Factor	**Description of Rationale and Approach**
Factor 6 - Location and magnitude of forecast future resident and worker population growth.	My alternative methodology uses the existing (2016) and forecast resident and worker population (2031) estimates provided in the City of Yarra of Open Space Strategy. I have not altered or amended these figures in any way. As per Joanna Thompson's methodology, I use the differential between the 2016 and 2031 resident population and worker populations (expressed as the percentage of new residential and worker population and existing residential and worker population by 2031) as the basis for apportioning cost estimates using my proposed weighting model.

Factor	Description of Rationale and Approach
Factor 7 – Part A. Future residential population densities.	The City of Yarra of Open Space Strategy rightfully emphasises the pressure placed on the municipality's open space system due to much higher residential and worker populations and densities compared to the rest of Melbourne and in particular PSP locations. My alternative methodology proposes a residential density weighting system for each of Yarra's precincts using the VPA's PSP Guidelines as a baseline benchmark. The PSP Guidelines currently recommend the provision of 20 dwellings per NDA hectare in PSP locations, which equates to 62 people per NDA (based on 3.1 persons per dwelling – a figure typically adopted by the VPA's in its development and population assumptions). In my view, it is reasonable to assert that if 62 persons per NDA hectare in our less dense urban locations (i.e. PSP areas) are expected to be supplied with 10% of each NDA hectare as unencumbered local public open space, then so should our most dense urban locations like the City of Yarra. My residential density weighting calculations are based on comparing the differential between the VPA PSP density estimate (62 people per NDA hectare) and the residential density estimates for each of Yarra's precincts. These estimates were calculated by subtracting the 2016 residential density estimate from the 2031 residential density estimate. Where a precinct exceeds the VPA PSP density estimate (62 persons per hectare) by 2031, the differential estimate between 2016 and 2031 was used as the basis for determining a weighting for that precinct.
Factor 7. Part B – Future worker population densities.	My alternative methodology proposes a job/worker density weighting system for each of Yarra's precincts using the VPA's PSP Guidelines as a baseline benchmark. The PSP Guidelines currently recommends the provision of 1 job (or worker) per dwelling (or 20 jobs/workers per NDA hectare based on 20 dwellings per NDA hectare). My worker population density weighting calculations are based on comparing the differential between the VPA PSP density estimate (20 jobs/workers per NDA hectare) and the job / worker per dwelling estimates for each of Yarra's precincts. These estimates were calculated by subtracting the 2016 worker density estimate from the 2031 worker density estimate. Where a precinct exceeds the VPA PSP density estimate (20 jobs/workers per NDA hectare) by 2031, the differential estimate between 2016 and 2031 was used as the basis for determining a worker population weighting for that precinct. I then reduced the new worker population density weighting to 20% of the total weighting to align with the PSP Guidelines which allocates only 2% of NDA employment land hectares for public open space (which is 20% of that allocated to NDA residential land hectares – i.e. 10% of NDA residential land hectares).

With these two main factors considered, I outline below a more detailed description of my alternative methodology.

2.8.2 Summary of the Steps Used to Calculate an Alternative Apportionment Methodology

My alternative methodology builds on the VPA's PSP Guidelines, including the VPA's methodology for determining the NDA of a PSP area, and proposes a weighting model that can be applied to inner urban localities such as the City of Yarra which generally have higher residential and worker population densities than PSP locations. The weighting model described below proposes two weightings which are added together in the final steps of my alternative methodology. The first is a residential population density weighting, and the second is a worker population density weighting. The need for both weightings is necessary to account for the demand both population groups place on the public open space network. But it also allows me to treat the demand for public open space generated by the worker population differently from the residential population. In this regard I differ from the Panel's view on treating the demand for public open space equally between residential and worker populations. As discussed above in Section 2.8.1, I feel this is necessary in order to ensure my model is consistent with the PSP Guidelines.

My alternative methodology for calculating an appropriate public open space contribution rate for the City of Yarra requires a number of key steps be undertaken in order to establish alignment with the VPA's PSP Guidelines. Broadly speaking, these can be described as:

Calculating the Amount of Net Developable Area (NDA) of Each Precinct

1. This step calculates the Net Developable Area (NDA) of each of the City of Yarra's ten precincts as per VPA PSP practice. Refer to Attachment 3 for more details.

New Residential Population Weighting

2. Calculating the 2016 and 2031 residential population densities for each of the City of Yarra's precincts and expressing these figures as the number of persons (resident population) per NDA hectare.
3. Calculating a new residential population density weighting for each precinct which exceeds the PSP Guideline target specifying that PSPs aim to deliver a minimum of 20 dwellings per NDA hectare (equating to 62 persons per NDA hectare).

New Worker Population Weighting

4. Calculating the 2016 and 2031 worker population densities for each of the City of Yarra's precincts and expressing these figures as the number of workers per NDA hectare.
5. Calculating a new worker population density weighting for each precinct which exceeds the PSP Guideline target specifying that PSPs aim to deliver 1 job/worker per residential dwelling (equating to 20 jobs/workers per NDA hectare).
6. The new worker population density weighting is then reduced to 20% of the total weighting to align with the PSP Guidelines which allocates only 2% of NDA employment land hectares for public open space (which is 20% of that allocated to NDA residential land hectares – i.e. 10% of NDA residential land hectares).

Calculating a Total Weighting

7. The total weighting for each precinct is calculated by adding together the new residential population weighting and new worker population weighting.

Final Combined Public Open Space Contribution Rate

8. Applying the total weighting figure for each precinct to the estimated cost of public open space projects identified in the City of Yarra Open Space Strategy apportioned to the new residential and worker population using the 10% CIV land acquisition cost scenario (scenario 2).

2.8.3 The Residential Population Density Weighting

2.8.3.1 PSP Guidelines (2021): Dwelling/Population Densities

As previously mentioned, the first component of my weighting system refers to the application of a residential population density weighting to each precinct using the VPA's PSP Guidelines as a baseline benchmark (62 persons per NDA hectare).

Part 3 of the PSP Guidelines contains the following performance target relating to dwelling and population densities sought for PSP locations:

- **Viable Densities**. Target 2 – "The PSP should facilitate increased densities with an average of 20 dwellings or more per NDHA across the entire PSP area." (page 39).

My residential density weighting calculations are based on comparing the differential between the VPA PSP density estimate and the residential density estimates for each of Yarra's precincts. These estimates were calculated by subtracting the 2016 residential density estimate from the 2031 residential density estimate. Where a precinct exceeds the VPA PSP density estimate (62 persons per hectare) by 2031, the differential estimate between 2016 and 2031 was used as the basis for determining a weighting for that precinct.

In my view, it is reasonable to assert that if 62 persons per NDA hectare in our less dense urban locations (i.e. PSP areas) are expected to be supplied with 10% of each NDA hectare as unencumbered local public open space, then so should our most dense urban locations like those located in the City of Yarra. Table 6 on the following page provides a summary of the proposed residential population density weighting score for each precinct. The precincts which score the highest weightings are Collingwood (0.73), North Richmond (0.70), Fitzroy (0.56) and Abbotsford (0.45).

Table 6 – Proposed Residential Population Density Weightings by Precinct

Steps	Notes	Unit	Abbotsford	Carlton North-Princess Hill	Central Richmond	Clifton Hill	Collingwood	Cremorne, Richmond South and Burnley	Fairfield - Alphington	Fitzroy	Fitzroy North	North Richmond
Step 1 - Calculate Yarra Net Developable Area as Per VPA Methodology												
Step 1.1	Calculate total area of precinct. Figures supplied by the City of Yarra.	Total Area of Precinct (hectares)	178.7	140.6	196.0	166.6	129.2	233.1	347.2	140.3	231.5	192.1
Step 1.2	Calculate Net Developable Area (NDA) as per VPA PSP Guidelines. Figures supplied by the City of Yarra.	Total Net Developable Area (NDA) - hectares	136.1	127.8	161.1	99.6	114.8	113.2	142.3	125.3	174.3	170.1
Step 2 – Calculate VPA PSP Residential Population Density Benchmark												
Step 2.1	The VPA PSP Guidelines require PSPs to achieve a density target of 20 dwellings per NDA hectare. Based on an average household size of 3.1 persons per household this target delivers a population yield of 62 people per NDA hectares (20 x 3.1). This provides the basis for comparing the differences in population density levels in each of Yarra's precincts compared to the VPA PSP Guidelines.	PSP residential population density benchmark	62.00	62.00	62.00	62.00	62.00	62.00	62.00	62.00	62.00	62.00
Step 3 - Calculate Yarra 2016 Residential Population Density The purpose of this step is to calculate the residential population density of Yarra precincts in 2016												
Step 3.1	Derived from Yarra Open Space Strategy	2016 residential population	8,849	9,010	13,888	6,792	9,141	4,622	2,894	11,465	12,357	14,335
Step 3.2	Formula: Step 3.1 ÷ Step 1.2	2016 residential population density per NDA hectare	65.00	70.50	86.21	68.20	79.66	40.85	20.34	91.53	70.89	84.27
Step 3.3	Formula: Step 3.2 ÷ Step 2.1	2016 residential population density weighting	1.05	1.14	1.39	1.10	1.28	0.66	0.33	1.48	1.14	1.36
Step 4 - Calculate Yarra 2031 Residential Population Density The purpose of this step is to calculate the residential population density of Yarra precincts by 2031												
Step 4.1	Derived from Yarra Open Space Strategy	Projected residential	12,671.00	8,843.00	17,269.00	7,432.00	14,347.00	9,539.00	9,099.00	15,798.00	15,112.00	21,754.00

Steps	Notes	Unit	Abbotsford	Carlton North-Princess Hill	Central Richmond	Clifton Hill	Collingwood	Cremorne, Richmond South and Burnley	Fairfield - Alphington	Fitzroy	Fitzroy North	North Richmond
		population by 2031										
Step 4.2	Formula: Step 4.1 ÷ Step 1.2	Projected residential population density by 2031 per NDA hectare	93.07	69.20	107.19	74.62	125.03	84.30	63.96	126.13	86.70	127.89
Step 4.3	Formula: Step 4.2 ÷ Step 2.1	Projected residential population density weighting	1.50	1.12	1.73	1.20	2.02	1.36	1.03	2.03	1.40	2.06
Step 5 - Calculate New Residential Population Density Weighting This step calculates the residential population density change between 2016 and 2031. Weighting is applied only if 2031 residential population density exceeds VPA benchmark												
Step 5.1	Formula Step 4.3 – Step 3.3	New residential population weighting	0.45	Not applicable	0.34	0.10	0.73	0.36	0.03	0.56	0.25	0.70

2.8.4 Proposed Worker Population Density Weightings by Precinct

2.8.4.1 PSP Guidelines (2021): Jobs and Employment Land Open Space Targets

Part 3 of the PSP Guidelines contains two relevant performance targets relating to job generation and open space allocation in employment land locations. These are:

- **Connect People to Jobs & Higher Order Services**. Feature 8 (F 8). Well connected to public transport, jobs & services within the region, target 10 – "The provision of land for local employment and economic activity should be capable of accommodating the minimum job density target of one job per dwelling located within the wider growth corridor" (page 67).

- **Offer High-Quality Public Realm.** Feature 10 (F 10). Local recreation spaces and facilities, target 11 - "The open space network should seek to meet the following minimum targets: … dedicated employment land within dedicated employment and/ or economic activity areas, 2% of the net developable area for local parks" (page 74).

In relation to F 10 - target 11, it is important to note that the 2% open space target for dedicated employment land in PSP locations is more difficult to apply in the City of Yarra which has a high proportion of land uses with a "mixed use" zoning function. In PSP locations, employment land uses appear to be more clearly separated from other land uses.

For the purposes of my alternative methodology, my worker population density weighting has been reduced to 20% of the total calculation in order to align with the PSP Guidelines (2% of NDA employment land hectares for public open space equates to 20% of that allocated for NDA residential land – i.e. 10% of NDA residential land hectares for public open space).

2.8.4.2 Job Density

I have used the job density target of 1 job per dwelling (which equates to 20 jobs/workers per NDA hectare) as a baseline benchmark against which to compare both the 2016 and 2031 job density figures for the City of Yarra using the worker figures presented in the City of Yarra Open Space Strategy. As shown in Table 7 on the following page, six of the ten City of Yarra precincts had job/worker density levels far exceeding the PSP Guideline target 1 job per dwelling (20 jobs/workers per NDA hectare). Most notable among these precincts were Collingwood (0.90), Cremorne, Richmond South and Burnley (0.81), Fitzroy (0.65) and Abbotsford (0.29).

Table 7 – Proposed Worker Population Density Weightings by Precinct

Steps	Notes	Unit	Abbotsford	Carlton North-Princess Hill	Central Richmond	Clifton Hill	Collingwood	Cremorne, Richmond South and Burnley	Fairfield - Alphington	Fitzroy	Fitzroy North	North Richmond
Step 1 - Calculate Yarra Net Developable Area as Per VPA Methodology												
Step 1.1	Calculate total area of precinct. Figures supplied by the City of Yarra.	Total Area of Precinct (hectares)	178.7	140.6	196.0	166.6	129.2	233.1	347.2	140.3	231.5	192.1
Step 1.2	Calculate Net Developable Area (NDA) as per VPA PSP Guidelines. Figures supplied by the City of Yarra.	Total Net Developable Area (NDA) - hectares	136.1	127.8	161.1	99.6	114.8	113.2	142.3	125.3	174.3	170.1
Step 2 – Calculate VPA PSP Worker Population Density Benchmarks												
Step 2.2	The VPA PSP Guidelines require PSPs to achieve a jobs density target of 1 job per dwelling. This target delivers a job yield of 20 jobs per NDA hectare (20 x 1). This provides the basis for comparing the differences in population density levels in each of Yarra's precincts compared to the VPA PSP Guidelines.	PSP worker population density benchmark	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
Step 6 - Calculate Yarra 2016 Worker Population Density The purpose of this step is to calculate the worker population density of Yarra precincts in 2016												
Step 6.1	Derived from Yarra Open Space Strategy	2016 worker population	12,057	0	10,140	921	14,810	16,704	0	17,014	0	13,179
Step 6.2	Formula: Step 6.1 ÷ Step 1.2	2016 worker population density per NDA hectare	88.56	0.00	62.94	9.25	129.06	147.62	0.00	135.84	0.00	77.48
Step 6.3	Formula: Step 6.2 ÷ Step 2.2	2016 worker population density weighting	4.43	0.00	3.15	0.46	6.45	7.38	0.00	6.79	0.00	3.87
Step 7 - Calculate Yarra 2031 Worker Population Density The purpose of this step is to calculate the worker population density of Yarra precincts by 2031												
Step 7.1	Derived from Yarra Open Space Strategy	Projected Worker Population by 2031	15,972	0	13,176	1,266	25,168	25,865	0	25,216	0	17,444
Step 7.2	Formula: Step 7.1 ÷ Step 1.2	Projected Worker Population by 2031 per NDA hectare	117.32	0.00	81.79	12.71	219.32	228.58	0.00	201.32	0.00	102.55
Step 7.3	Formula: Step 7.2 ÷ Step 2.1	Yarra Precinct 2031 Worker Density Weighting	5.87	0.00	4.09	0.64	10.97	11.43	0.00	10.07	0.00	5.13

Steps	Notes	Unit	Abbotsford	Carlton North-Princess Hill	Central Richmond	Clifton Hill	Collingwood	Cremorne, Richmond South and Burnley	Fairfield - Alphington	Fitzroy	Fitzroy North	North Richmond
Step 8 - Calculate New Worker Population Density Weighting This step calculates the worker population density change between 2016 and 2031. Weighting is applied only if 2031 worker population density exceeds VPA benchmark												
Step 8.1	Formula: Step 7.3 – Step 6.3	New worker population weighting	1.44	Not applicable	0.94	Not applicable	4.51	4.05	Not applicable	3.27	Not applicable	1.25
Step 8.2	Formula: Step 8.1 * 0.20	Application of 20% of new worker population weighting for new worker population open space demand (refer to Section 2.8.4.1 of this report for more details)	0.29	Not applicable	0.19	Not applicable	0.90	0.81	Not applicable	0.65	Not applicable	0.25

2.8.5 Total Weightings by Precinct

The total weighting for each precinct is calculated by adding together the new residential population weighting and new worker population weighting. As previously stated, the need for both weightings is necessary to account for the demand both population groups place on the public open space network. But it also allows me to treat the demand for public open space generated by the worker population differently from the residential population. Table 8 below summarises the total weighting score for each precinct. The precincts with the highest weightings are Collingwood (1.63), Fitzroy (1.21), Cremorne - Burnley - Richmond South (1.17) and North Richmond (0.95).

Table 8 - Summary of Total Weightings by Precinct

Precinct	Residential Population Weighting	Worker Population Weighting	Total Weighting
Abbotsford	0.45	0.29	0.74
Carlton North - Princes Hill	Not applicable	Not applicable	Not applicable
Central Richmond	0.34	0.19	0.53
Clifton Hill	0.10	Not applicable	0.10
Collingwood	0.73	0.90	1.63
Cremorne - Burnley - Richmond South	0.36	0.81	1.17
Fairfield - Alphington	0.03	Not applicable	0.03
Fitzroy	0.56	0.65	1.21
Fitzroy North	0.25	Not applicable	0.25
North Richmond	0.70	0.25	0.95

2.8.5 Final Public Open Space Contribution Rate

The final stage of my methodology applies the total weighting scores shown above in Table 8 to the costs apportioned to the proportion of new residential and worker population by 2031 using the 10% CIV scenario for land acquisition costs. Table 9 on the following page summarises the total revised dollar value of proposed open space project costs allocated to the new residential and worker population after the application of the total weighting scores for each precinct. After the application of the weighting scores the resulting total dollar value of open space projects allocated to the new residential and worker population is $357,895,416. It is then possible to calculate the public open space contribution rate by dividing this revised cost by the total estimated value of the land to redevelop in the City of Yarra ($3,789,238,623). As shown in the formula below, this results in a public open space contribution rate of 9.4%.

$$\$357,895,416 \div \$3,789,238,623 = 9.4\%$$

Table 9 – Revised Public Open Space Contribution Rate Based 10% CIV Scenario for Land Acquisition Costs

Steps	Notes	Unit	Abbotsford	Carlton North-Princess Hill	Central Richmond	Clifton Hill	Collingwood	Cremorne, Richmond South and Burnley	Fairfield - Alphington	Fitzroy	Fitzroy North	North Richmond	Total
Step 9 - Calculate Total New Residential & Worker Population Weighting Step 9 adds the two weightings, where they apply, to each precinct to determine a total weighting figure.													
Step 9.1	Formula: Step 8.2 + Step 5.1	Total Weighting Score	0.74	Not applicable	0.53	0.10	1.63	1.17	0.03	1.21	0.25	0.95	
Step 10 - Apply Total Weighting to POS Costs apportioned to new residential and worker population only Step 10 applies the total precinct weighting to costs apportioned to new residential and worker population by 2031 only. Costs are those derived from the City of Yarra Open Space Strategy based on the 10% Capital Improved Value (CIV) estimates.													
Step 10.1	Derived from City of Yarra Public Open Space Strategy	Total dollar value of proposed open space projects	$15,136,176	$9,303,720	$46,360,440	$5,120,000	$126,915,054	$135,230,839	$6,266,108	$68,787,084	$13,300,170	$64,691,460	$491,111,053
Step 10.2	Revised Calculation	Total dollar value of proposed open space projects allocated to existing residential and worker population	$11,047,617	$9,303,720	$36,588,887	$4,540,189	$76,926,293	$81,457,826	$1,992,979	$47,763,870	$10,875,476	$45,408,460	$325,905,317
Step 10.3	Revised Calculation	Total dollar value of proposed open space projects allocated to new residential and worker population	$4,088,559	$0	$9,771,553	$579,811	$49,988,761	$53,773,013	$4,273,129	$21,023,214	$2,424,694	$19,283,000	$165,205,734
Step 10.4	Revised Calculation	Proportion existing residential and worker population by 2031	73%	100%	79%	89%	61%	60%	32%	69%	82%	70%	
Step 10.5	Revised Calculation	Proportion new residential and worker population by 2031	27%	0%	21%	11%	39%	40%	68%	31%	18%	30%	

Steps	Notes	Unit	Abbotsford	Carlton North-Princess Hill	Central Richmond	Clifton Hill	Collingwood	Cremorne, Richmond South and Burnley	Fairfield - Alphington	Fitzroy	Fitzroy North	North Richmond	Total
Step 10.6	Formula: Step 10.3 + (Step 10.3 x Step 9.1)	Revised apportionment cost to new residential and worker population based on total weighting	$7,115,648	$0	$14,920,661	$639,905	$126,915,054[8]	$116,649,630	$4,408,483	$46,519,949	$3,042,811	$37,683,276	$357,895,416
Step 10.7	Derived from City of Yarra Public Open Space Strategy	Estimated value of the land to redevelop	$286,757,015	$23,588,482	$500,779,083	$68,930,173	$815,247,821	$635,975,223	$22,555,590	$717,813,964	$158,903,603	$558,687,669	$3,789,238,623
Step 11 - Calculate POS Contribution Rate for the City of Yarra	**City of Yara Column only. Formula: Step 10.6 ÷ Step 10.7**												**9.4%**

[8] Note: The cost apportioned to new residential and worker population in the Collingwood precinct has been capped at the total project of $126,915,054 as the application of the Collingwood weighting score exceeds this figure.

3. Conclusions

Based on the material reviewed in this report I conclude the following:

1. In my opinion the apportionment method used by Joanna Thompson is far too subjective and difficult to replicate with any great consistency. For example, it would appear difficult for any two open space planners to agree on which of her six apportionment ratios should apply to any particular project. However, as I have demonstrated, I believe the construction and application of some form of more quantifiable and replicable weighting system that can be applied to the apportionment process is both possible and valid.
2. The more traditional apportionment method of using only residential and worker population forecasts to determine the public open space contribution rate fails to reflect the complex and costly challenge of satisfying open space needs in high density inner suburban municipalities such as the City of Yarra and fails to provide sufficient financial resources to implement important open space measures that many locations within the City of Yarra desperately need.
3. I have highlighted there is currently a significant disparity between the actual supply of local public open space in the majority of Council's 10 precincts, and the target specified in the VPA's PSP Guidelines (10% of NDA be provided in the form of local unencumbered public open space), and clearly shown to what extent each of Council's 10 precincts exceed the residential and worker population densities anticipated in PSP locations.
4. My alternative methodology builds on the VPA's PSP Guidelines and proposes a weighting model that can be applied to inner urban localities such as the City of Yarra which generally have higher residential and worker population densities than PSP locations.
5. My weighting model proposes two weightings which are added together in the final steps of my alternative methodology. The first is a residential population density weighting, and the second is a worker population density weighting. I have explained the need for two weightings in my report.
6. The two weightings are focused on determining the following: 1) the projected residential population densities of each precinct relative to the target specified in the PSP Guidelines (20 dwellings per NDA hectare / 62 persons per NDA hectare), and 2) the projected worker population densities of each precinct relative to the target specified in the PSP Guidelines (1 job/worker per dwelling or 20 jobs / workers per NDA hectare).
7. I have also proposed that the new worker population density weighting be reduced to 20% of the total weighting score to align with the PSP Guidelines which allocates only 2% of NDA employment land hectares for public open space (which is 20% of that allocated to NDA residential land hectares – i.e. 10% of NDA residential land hectares).

8. I regard my alternative methodology as a fair and equitable weighting system as it properly acknowledges the enormously complex and costly process Council confronts in its efforts to improve open space amenity in the face of significant urban renewal and residential and worker population densities that far exceed the residential and worker density targets expected in PSP locations.

9. The application my weighting system to the estimated cost of public open space projects identified in the City of Yarra Open Space Strategy for each precinct and apportioned to new residential and worker populations by 2031 using the 10% CIV land acquisition cost scenario (scenario 2) produces a public open space contribution rate of 9.4%.

Attachments

Attachment 1. Summary Preliminary Opinion of Probable Cost City of Yarra Open Space Strategy 2020

Scenario 2: 10% Allowance Scenario on CIV Land Acquisition Costs.

Source: Memorandum Prepared by Joanna Thompson dated 18 January 2022. Response to Planning Panels Victoria Direction #3 on 20 December 2021: Alternative scenarios regarding the cost allowance on CIV land acquisition costs.

Summary Preliminary Opinion of Probable Cost
City of Yarra Open Space Strategy 2020

10% Allowance Scenario on CIV land acquisition costs

[COLUMN A]	[COLUMN B]	[COLUMN C]	[COLUMN D]
PRECINCT	**Total dollar value**	**Total dollar value for existing population**	**Total dollar value for new population**
Abbotsford	$15,136,176	$7,822,992	$7,313,184
Carlton North - Princes Hill	$9,303,720	$8,838,534	$465,186
Central Richmond	$46,360,440	$21,412,109	$24,948,331
Clifton Hill	$5,120,000	$4,096,000	$1,024,000
Collingwood	$126,915,054	$42,175,825	$84,739,230
Cremorne - Burnley - Richmond South	$135,230,839	$34,641,802	$100,589,038
Fairfield - Alphington	$6,266,108	$2,880,814	$3,385,294
Fitzroy	$68,787,084	$26,063,069	$42,724,016
Fitzroy North	$13,300,170	$4,951,919	$8,348,251
North Richmond	$64,691,460	$9,789,043	$54,902,418
Total	**$491,111,053**	**$162,672,106**	**$328,438,946**

Abbotsford

Strategy Action No.	ACTION	Priority	Respon-sibility	Total Cost	Proportion of cost for existing population	Proportion of cost for new population
ADDITIONAL OPEN SPACE						
7.1A-1	Provide an additional Small Local open space in the south west part of open space sub-precinct Abbotsford C for both the existing and forecast population. The new open space is to be located south of Langridge Street between the railway and Nicholson Street.	High	YCC			
	Land acquisition			$4,258,678	30%	70%
	Capital works for construction of new open space			$575,450	30%	70%
7.1A-2	Provide an additional Neighbourhood open space if the large scale industrial uses are redeveloped. This would primarily be for the forecast population.	High and Ongoing	YCC Developer			
	Land acquisition			$0	0%	0%
	Capital works for construction of new open space			$0	0%	0%
	Subtotal for additional open space			***$4,834,128***		
EXISTING OPEN SPACE						
7.1B-1	**Bath Street Reserve** Continue to maintain.	Ongoing	YCC	$0	0%	0%
7.1B-2	**Brearley Reserve** Undertake a major upgrade to protect and interpret the existing Red Gum including expanding the size of the reserve utilising part of the road reserve to create more space around the Red Gum. Future design to provide facilities for the local community to use this reserve when major sporting events are held at Victoria Park. This is for both the existing and forecast population.	Low	YCC	$1,224,707	50%	50%
7.1B-3	**Browns Reserve** Continue to maintain.	Ongoing	YCC	$0	0%	0%
7.1B-4	**Clarke Street Reserve** Undertake a major upgrade to this open space to provide seating and picnic area with views over the Yarra River and the Abbotsford Convent site and indigenous revegetation to improve the biodiversity values and potentially include interpretive signage regarding the natural and cultural values of the site.	High	YCC	$1,224,707	80%	20%
7.1B-5	**Collingwood Childrens Farm** Continue to maintain.	Ongoing	YCC	$0	0%	0%
7.1B-6	**Dights Falls** Continue to maintain.	Ongoing	YCC, PV, MW	$0	80%	20%
7.1B-7	**Eddy Court Reserve** Undertake a major upgrade to this linking space including investigating providing addition active unstructured recreation facilities to encourage greater use of this open space adjacent to the railway reserve.	Low	YCC, PTV	$345,270	80%	20%
7.1B-8	**Flockhart Reserve** Continue to maintain in the short term. In the future when the additional linear open space along the Yarra River is secured, then undertake a major upgrade to improve the visitor facilities at Flockhart Reserve.	Low	YCC, MW	$2,502,455	50%	50%
7.1B-9	**Gahan Reserve** Undertake major upgrades to this open space in the longer term primarily to meet the needs of the forecast population. This is to include investigating appropriate uses for the Maternal Child and Health facility that will complement the open space.	Low	YCC	$2,502,455	80%	20%
7.1B-10	**Maugie Street Reserve** Continue to maintain.	Ongoing	YCC	$0	0%	0%
7.1B-11	**Saint Phillip's Reserve** Continue to maintain.	Ongoing	YCC	$0	0%	0%
7.1B-12	**Studley Street Reserve** Continue to maintain.	Ongoing	YCC	$0	0%	0%
7.1B-13	**Victoria Park** Prepare and implement a new Masterplan to imrpove the structured and unstructured sport and recreation use in the context of forecast growth and change.	Medium	YCC	$2,502,455	50%	50%
7.1B-14	**Yarra River Trail– Abbot St to Turner St (Land is not zoned PPRZ)** Continue to maintain.	Ongoing	YCC	$0	0%	0%
7.1B-15	**Yarra River Trail – Acacia Pl to Victoria St** Continue to maintain.	Ongoing	YCC, PV MW	$0	0%	0%
7.1B-16	**Yarra River Trail – Johnston St to Clarke St** Continue to maintain.	Ongoing	YCC, PV MW	$0	0%	0%
7.1B-17	**Yarra River Trail – Turner St to Johnston St** Continue to maintain.	Ongoing	YCC, PV MW	$0	0%	0%
7.1B-18	**Yarra River Trail – Walmer St to Acacia Pl** Continue to maintain.	Ongoing	YCC, PV MW	$0	0%	0%
	Subtotal for existing open space			***$10,302,048***		
	TOTAL FOR ABBOTSFORD			***$15,136,176***		

Carlton North | Princes Hill

Strategy Action No.	ACTION	Priority	Respon-sibility	Total Cost	Proportion of cost for existing population	Proportion of cost for new population
ADDITIONAL OPEN SPACE						
7.2A-1	Provide a new Small Local open space in Carlton North to address the gap area for the existing population.	Medium	YCC			
	Land acquisition			$6,366,786	95%	5%
	Capital works for construction of new open space			$575,450	95%	5%
	Subtotal for additional open space			***$6,942,236***		
EXISTING OPEN SPACE						
7.2B-1	**Canning Street Median** Continue to protect and manage the mature trees.	Ongoing	YCC	$0	95%	5%
7.2B-2	**Curtain Square** Minor upgrade to Curtain Square including an upgrade to the existing playground.	High	YCC	$834,152	95%	5%
7.2B-3	**Hardy Gallagher Reserve** Undertake a minor upgrade to the reserve including review of the existing path network, upgrade of unstructured recreation facilities and signage regarding the proposed new urban agricultural facility at the neighbourhood house.	Medium	YCC	$834,152	95%	5%
7.2B-4	**Nicholson Street Reserve** Minor upgrade to improve the overstory canopy trees, path and seats.	Medium	YCC DHHS	$115,090	95%	5%
7.2B-5	**Park Street Reserve (Inner Circle Railway Parklands)** Review the Linear Park Masterplan and function of this site within the network and undertake minor upgrades including review of lighting.	Low	YCC	$347,911	95%	5%
7.2B-6	**Pigdon Street Median** Continue to protect and manage the mature trees and upgrade to include seating and associated park infrastructure including drinking fountain.	High and Ongoing	YCC	$115,090	95%	5%
7.2B-7	**Shakespeare Reserve** Undertake a minor upgrade to improve the seating opportunities in this reserve.	Medium	YCC	$115,090	95%	5%
	Subtotal for existing open space			***$2,361,484***		
	TOTAL FOR CARLTON NORTH - PRINCES HILL			***$9,303,720***		

Central Richmond

Strategy Action No.	ACTION	Priority	Respon-sibility	Total Cost	Proportion of cost for existing population	Proportion of cost for new population
ADDITIONAL OPEN SPACE						
7.3A-1	Provide a new Local open space in the north west of Central Richmond A as shown in Figure 7.3F for both the existing and forecast new population. The new Local open space will need to include the provision of space and facilities for unstructured active recreational uses given these are not currently well provided for in Central Richmond.	Very High	YCC Developer			
	Land acquisition			$27,180,363	50%	50%
	Capital works for construction of new open space			$1,739,556	50%	50%
7.3A-2	Provide either one new Small Local open space in the north east part of Central Richmond B as shown in Figure 7.3F for both the existing and future population. The location is to be accessible via the local street network and preferably improve east-west connectivity.	Very High	YCC Developer			
	Land acquisition			$5,283,190	50%	50%
	Capital works for construction of new open space			$575,450	50%	50%
7.3A-3	Provide a new Small Local open space in the south east part of Central Richmond B as shown in Figure 7.3F for both the existing and future population.	Very High	YCC Developer			
	Land acquisition			$5,283,190	50%	50%
	Capital works for construction of new open space			$575,450	50%	50%
7.3A-4	Investigate options to expand the size of Dame Nellie Melba Park in the longer term to increase the capacity of the open space to accommodate increased levels of use as a result of forecast growth.`	Low	YCC Developer			
	Land acquisition			$2,438,395	10%	90%
	Capital works for construction of new open space			$575,450	10%	90%
	Subtotal for additional open space			***$43,651,044***		
EXISTING OPEN SPACE						
7.3B-1	**Ben Alexander Reserve** Continue to maintain.	Ongoing	YCC	$0	0%	0%
7.3B-2	**Burnley Park** Prepare a revised Landscape Masterplan that incorporates the recommendations from the 2007 CMP, investigates viable future uses of the cottage and responds to the heritage and historical values of the park. The design will need to cater to the forecast new population needs including increasing the capacity of the facilities to the accommodate the increased levels of use. This is primarily for the forecast new population.	Medium	YCC	$834,152	20%	80%
7.3B-3	**Cairns Reserve** Undertake minor upgrades to adapt and cater to increased levels of use from the forecast population. This includes investigating the provision of a barbecue and picnic facility along facilities that encourage active unstructured recreation.	Medium	YCC	$347,911	20%	80%
7.3B-4	**Circus Site** Undertake minor improvements to protect and appropriately interpret the cultural heritage and natural values of the site. Continue to manage this reserve for hosting major events with improved management guidelines to adequately protect the site from damage.	Ongoing	YCC	$834,152	50%	50%
7.3B-5	**Dame Nellie Melba Park** Undertake minor upgrades to adapt and cater to increase levels of use from the forecast population. Facilities to promote informal use of this reserve including barbecue and picnic facilities to complement the facilities provided in Cairns Reserve, which is nearby. Refer to the Action 7.3A-5 regarding the longer term aim to investigate opportunities to expand the size of the open space to improve its function and use primarily for the forecast population.	Low	YCC	$347,911	20%	80%
7.3B-6	**Peppercorn Park** Continue to maintain.	Ongoing	YCC	$0	0%	0%
7.3B-7	**Richmond Terrace Park** Continue to maintain.	Ongoing	YCC	$0	0%	0%
7.3B-8	**Wangaratta Street Park** Prepare a Concept Plan to guide the future expansion and upgrade of Wangaratta Street Park. This includes: •Investigating additional road closure to expand the size of the open space. •Increase the urban greening and cooling character of this open space including additional moisture absorbing surfaces, garden beds, trees and turf.	High	YCC	$345,270	20%	80%
7.3B-9	**Yarra River Trail – Bridge Rd to Swan St** Continue to undertake improvements as required to the natural biodiversity values and linear path consistent with the cultural and natural values of the river corridor.	Ongoing	YCC	$0	0%	0%
	Subtotal for existing open space			***$2,709,396***		
	TOTAL FOR CENTRAL RICHMOND			***$46,360,440***		

Clifton Hill

Strategy Action No.	ACTION	Priority	Respon-sibility	Total Cost	Proportion of cost for existing population	Proportion of cost for new population
ADDITIONAL OPEN SPACE						
7.4A-1	If substantial change occurs in the future between Hoddle Street and the Railway there is potential that a new Small Local open space may be required subject to an open space needs assessment. This would only be required if there is a change to the forecast growth and is not included in the contribution rate calculation and is not included on Figure 7.4F.	N/A	YCC			
	Land acquisition			$0	0%	0%
	Capital works for construction of new open space			$0	0%	0%
	Subtotal for additional open space			***$0***		
EXISTING OPEN SPACE						
7.4B-1	**Clifton Street Reserve** Undertake minor upgrade to improve the design of this space including paths, social meeting areas and improved greening. This is primarily for the existing population.	Low	YCC	$115,090	80%	20%
7.4B-2	**Coulson Reserve** Continue to maintain.	Ongoing	YCC	$0	0%	0%
7.4B-3	**Darling Gardens** Continue to implement the Darling Gardens Masterplan, with priority given to the protection and care of the mature canopy trees and improving the quality and condition of the open grassed areas.	High	YCC	$2,502,455	80%	20%
7.4B-4	**George Knott Reserve** Continue to maintain.	Ongoing	YCC	$0	0%	0%
7.4B-5	**Hall Reserve** Undertake minor upgrade to Hall Reserve to provide additional picnic areas within the reserve given its size to enjoy the expansive views over the creek corridor and the create social spaces for the people to meet and spend time in the reserve. This incudes retaining the existing sports training facilities.The upgrades will cater to both the forecast increased workers and residents and the existing population.	Medium	YCC	$834,152	80%	20%
7.4B-6	**Mayors Park** In the short term continue to maintain. In the longer term update the Landscape Masterplan and identify opportunities to improve its level of use and complement the facilities and character of the nearby Darling Gardens. This will cater to both the forecast and existing population.	Low	YCC	$834,152	80%	20%
7.4B-7	**Merri Creek Shared Trail (Railway to Heidelberg Rd)** Continue to improve the biodiversity values.	Ongoing	YCC	$0	0%	0%
7.4B-8	**Merri Creek Shared Trail (Heidelberg Road to Eastern Freeway)** Continue to improve the biodiversity values.	Ongoing	YCC	$0	0%	0%
7.4B-9	**Quarries Park** Undertake minor upgrades to improve the passive surveillance along with the condition of the playground and picnic area. This will cater to both the forecast and existing population.	High	YCC	$834,152	80%	20%
7.4B-10	**Ramsden Street Reserve** Continue to maintain.	Ongoing	YCC	$0	0%	0%
	Subtotal for existing open space			***$5,120,000***		
	TOTAL FOR CLIFTON HILL			***$5,120,000***		

Collingwood

Strategy Action No.	ACTION	Priority	Respon-sibility	Total Cost	Proportion of cost for existing population	Proportion of cost for new population
ADDITIONAL OPEN SPACE						
7.5A-1	Provide a new Small Local open space between Smith and Wellington Streets in open space precinct Collingwood A to cater to the existing and forecast population.	Very High	YCC Developer			
	Land acquisition			$4,502,853	40%	60%
	Capital works for construction of new open space			$575,450	40%	60%
7.5A-2	Investigate options to expand the size of McNamara Reserve to increase it to a Local open space size to provide space to include diversity of facilities that appeal to both the existing and forecast community.	Medium	YCC Developer			
	Land acquisition			$4,502,853	40%	60%
	Capital works for construction of new open space			$1,020,589	40%	60%
7.5A-3	Investigate options to expand the size of Alexander Street Reserve in Collingwood A to make it more accessible and useable. Alternatively provide a new Small Local open space for both the existing and forecast population in a more accessible and visible location in Collingwood A sub-precinct. This can either be in addition to Alexandra Reserve, or to replace it.	Medium	YCC			
	Land acquisition			$4,502,853	40%	60%
	Capital works for construction of new open space			$575,450	40%	60%
7.5A-4	Provide a new Local open space in the northern part of open space precinct Collingwood B in the vicinity of the Former Victoria Police Workshop on Stanley Street. This is to cater primarily for the forecast new population.	Very High	YCC Developer			
	Land acquisition			$25,449,326	10%	90%
	Capital works for construction of new open space			$1,739,556	10%	90%
7.5A-5	Increase the size of Peel Street Park and Cambridge Street Reserve to accommodate additional facilities and people, given both these open spaces are experiencing signs of over-development.	Very High	YCC Developer			
	Land acquisition			$5,514,021	10%	90%
	Capital works for construction of new open space			$575,450	10%	90%
7.5A-6	Provide a new Small Neighbourhood open space in Collingwood C. The future open space will need to be accessible to the moderate change area associated with Johnson Street to the north and any future change to the social housing estate. This can be staged so that it firstly provides a Local open space and can be expanded later to a Small Neighbourhood to cater to the 2041 forecast population.	High	YCC Developer			
	Land acquisition			$50,055,181	50%	50%
	Capital works for construction of new open space			$2,135,235	50%	50%
7.5A-7	Provide a new Local open space between Gipps and Victoria Streets for both the existing and forecast worker population in Collingwood D.	High	YCC Developer			
	Land acquisition			$17,312,919	30%	70%
	Capital works for construction of new open space			$1,739,556	30%	70%
7.5A-8	Provide a new Small Local open space in Collingwood B south of Johnston Street within the moderate change area identified in the *Yarra Housing Strategy 2018*. This is primarily for the forecast population.	Very High	YCC Developer			
	Land acquisition			$5,514,021	10%	90%
	Capital works for construction of new open space			$575,450	10%	90%
	Subtotal for additional open space			***$126,290,762***		
EXISTING OPEN SPACE						
7.5B-1	**Alexander Street Reserve** Refer to Action 7.5A-3 regarding investigating the potential option to expand the size and suitable alternative more accessible locations for a new open space. Once the size, location and whether the existing open space is to be retained, undertake capital works improvements to establish a new open space or upgrade the existing.	Medium	YCC	Refer to Action 7.5A-3	30%	70%
7.5B-2	**Cambridge Street Reserve** Investigate opportunities to increase the size of Cambridge Street Reserve including options of utilising part of the adjoining road reserve. This will increase the area and also sunlight access, particularly in winter.	High	YCC	Refer to Action 7.5A-5	20%	80%
7.5B-3	**McNamara Reserve** In the short to medium term continue to maintain. As part of the future expansion to the reserve in the long term, undertake a major upgrade to include facilities appropriate to the existing and forecast new community. Refer to Action 7.5A-2 regarding the increase of its size.	Low	YCC	$312,146	30%	70%
7.5B-4	**Oxford Street Park** Continue to maintain.	Ongoing	YCC	$0	0%	0%
7.5B-5	**Peel Street Park** n the short term, undertake a minor upgrade to this open space to provide additional trees, shade, improve seating and improve the layout and condition of the open grassed area primarily for the new population due to increased levels of use. In the longer term, undertake a major upgrade to incorporate the expanded area of open space. Refer to Action 7.5A-5.	Medium	YCC	$312,146	20%	80%
	Subtotal for existing open space			***$624,292***		
	TOTAL FOR COLLINGWOOD			***$126,915,054***		

Cremorne - Burnley - Richmond South

Strategy Action No.	ACTION	Priority	Respon-sibility	Total Cost	Proportion of cost for existing population	Proportion of cost for new population
ADDITIONAL OPEN SPACE						
7.6A-1	Provide a new Small Neighbourhood open space in Cremorne in the vicinity of the Kangan TAFE site. There is potential to investigate locating this on the car park and improving east-west connectivity as well. This new open space is primarily for the new population and also for the existing population.	Very High	YCC Developer			
	Land acquisition			$68,336,822	20%	80%
	Capital works for construction of new open space			$2,135,235	20%	80%
7.6A-2	Provide a new Small Local open space in the north-west area of Cremorne between Punt Road and Cremorne Street as shown in Figure 7.6F. This is to cater for both the forecast new and the existing population north of Kelso Street.	Very High	YCC Developer			
	Land acquisition			$5,922,525	50%	50%
	Capital works for construction of new open space			$575,450	50%	50%
7.6A-3	Provide a new Small Local open space in the south-west part of Cremorne in close proximity to the High Change Area shown in the *Yarra Housing Strategy 2018*. This is primarily to cater to the forecast new resident and worker population.	Very High	YCC Developer			
	Land acquisition			$5,922,525	20%	80%
	Capital works for construction of new open space			$575,450	20%	80%
7.6A-4	Provide a new Small Local open space between Cremorne Street and the railway, south of Balmain Street, as shown in Figure 7.6F. This will primarily be for the forecast new population.	Very High	YCC Developer			
	Land acquisition			$5,922,525	20%	80%
	Capital works for construction of new open space			$575,450	20%	80%
7.6A-5	Provide a new Local open space between the railway and Church Street and north of Balmain Street. This will complement the existing White Street Reserve, which is already well used, and cater to the forecast substantial increase in the worker and resident population. Options for future open space include the car park near East Richmond Station and the on the Bryant and May Site. The future open space will preferably be large enough to provide for unstructured active recreation including multi-use court, half courts, exercise equipment combined with urban greening and picnic and barbecue facilities.	Very High	YCC Developer			
	Land acquisition			$27,334,729	30%	70%
	Capital works for construction of new open space			$1,739,556	30%	70%
7.6A-6	Provide a new Small Local open space in the employment precinct south of Balmain Street and between the railway and Church Street. There is an opportunity to investigate changing the configuration of Dale Street to create a public open space and/or the configuration of the square on Electric Street. This will cater to both the existing and forecast worker population.	Very High	YCC Developer			
	Land acquisition			$5,922,525	50%	50%
	Capital works for construction of new open space			$575,450	50%	50%
7.6A-7	Provide a new Small Local open space north or south of East Richmond Station for the forecast population in the Swan Street Precinct.	Very High	YCC Developer			
	Land acquisition			$5,922,525	30%	70%
	Capital works for construction of new open space			$575,450	30%	70%
	Subtotal for additional open space			***$132,036,215***		
EXISTING OPEN SPACE						
7.6B-1	**Alan Bain Reserve** Continue to maintain.	Ongoing	YCC	$0	0%	0%
7.6B-2	**Athol J Brown Reserve** Continue to maintain.	Medium	YCC	$0	0%	0%
7.6B-3	**Barkly Gardens** Undertake minor upgrades to the playground and other unstructured recreation facilities to cater to increased levels of use for forecast population.	Medium	YCC	$834,152	20%	80%
7.6B-4	**Burnley Golf Course** Undertake a major review of the future use of this public open space to investigate options to increase the diversity of golfing options at the Burnley Golf Course in the short to medium term. In the longer term, investigate the feasibility to provide a diversity of sporting options provided for a the site. activities offered at this site. This is investigation only, no amount is allocated for works, as the space is intended to continue to be used for structured sporting uses.	Very High	YCC	$0	0%	0%
7.6B-5	**Charles Evans Reserve** Undertake minor upgrades including investigating improving the picnic and play facilities.	High	YCC	$115,090	30%	70%
7.6B-6	**Church Street Park** Continue to maintain.	Ongoing	YCC	$0	0%	0%
7.6B-7	**Golden Square Park** Undertake a major upgrade to better cater to the needs of the existing and forecast population including: •Improve the quality and design of the open grassed area. •Increase the variety of unstructured recreation facilities in the open space to appeal to a more diverse age group. •Activate the interface between the park and the adjoining commercial use to the west of the reserve.	High	YCC	$1,281,141	30%	70%

Cremorne - Burnley - Richmond South

Strategy Action No.	ACTION	Priority	Respon-sibility	Total Cost	Proportion of cost for existing population	Proportion of cost for new population
ADDITIONAL OPEN SPACE						
7.6B-8	**Herring Island** Support investigating options to improve access to Herring Island and its contribution to the biodiversity values of the Yarra River Corridor, consistent with the *Yarra Strategic Plan*.	Ongoing	PV	$0	0%	0%
7.6B-9	**Kevin Bartlett Reserve** Investigate options to upgrade the sporting facilities to better cater for a broader and more inclusive particpation base including females, LGBTQI+ and people with mobility challenges. As part of the future upgrade improve the passive and informal facilities provided at the reserve primarily for the forecast population as part of the future increased levels of use.	High	YCC	$834,152	20%	80%
7.6B-10	**Loys Paddock** Continue to improve the natural biodiversity values with appropriate indigenous revegetation while maintaining appropriate access for the Main Yarra Trail.	Ongoing	YCC	$0	0%	0%
7.6B-11	**McConchie Reserve** Continue to maintain.	Ongoing	YCC	$0	0%	0%
7.6B-12	**Ryans Reserve** Undertake minor upgrade to the informal facilities to complement the recent major upgrade to the netball facilities. This is to improve the casual use of the reserve outside of sports training and match play.	High	YCC	$0	0%	0%
7.6B-13	**Stephenson Street Reserve** Undertake minor upgrade to improve seating opportunities and landscape character with additional planting.	Ongoing	YCC	$15,000	20%	80%
7.6B-14	**Survey Paddock Trail** PV to continue to maintain.	Ongoing	PV	$0	0%	0%
7.6B-15	**White Street Reserve** Undertake a minor upgrade including provision of improved picnic facilities and review of the play facility and options to improve the seating and other uses. If opportunities arise in the future, investigate expanding the size of this open space to improve its function and use.	Medium	YCC	$115,090	20%	80%
7.6B-16	**Yarra River Trail – Church St to Railway** Continue to maintain.	Ongoing	PV (YCC)	$0	0%	0%
7.6B-17	**Yarra River Trail – Loyala Gv to McConchie Reserve** Continue to maintain.	Ongoing	YCC	$0	0%	0%
7.6B-18	**Yarra River Trail – McConchie Reserve to Church St** PV to continue to maintain and YCC continues to support the importance of accessibility through this section of trail.	Ongoing	PV (YCC)	$0	0%	0%
7.6B-19	**Yarra River Trail – Railway to Loyala Gr** Continue to maintain.	Ongoing	YCC	$0	0%	0%
7.6B-20	**Yarra River Trail – Railway to Punt Rd** PV to continue to maintain.	Ongoing	PV (YCC)	$0	0%	0%
7.6B-21	**Yarra River Trail – Swan St to Railway** PV to continue to maintain and YCC continues to support the importance of accessibility through this section of trail.	Ongoing	PV (YCC)	$0	0%	0%
	Subtotal for existing open space			***$3,194,624***		
	TOTAL FOR CREMORNE - RICHMOND SOUTH - BURNLEY			***$135,230,839***		

Fairfield - Alphington

Strategy Action No.	ACTION	Priority	Respon-sibility	Total Cost	Proportion of cost for existing population	Proportion of cost for new population
ADDITIONAL OPEN SPACE						
7.5A-1	The Alphington Paper Mills Development Plan 2016 has identified the provision of 1 new Small Local open space in the north of the precinct.	High	Developer			
	Land acquisition			$0	0%	0%
	Capital works for construction of new open space			$0	0%	0%
7.5A-2	The Alphington Paper Mills Development Plan 2016 has identified the provision of 3 new Local open spaces on the site including the linking space to the 30 metre wide reserve along the Yarra River corridor.	High	Developer			
	Land acquisition			$0	0%	0%
	Capital works for construction of new open space			$0	0%	0%
7.5A-3	Continue to advocate to Parks Victoria to provide a shared trail link to the Darebin Creek Shared Trail from Alphington. Note that no costs have been included for this project as it is the responsibility of the Victorian government to provide access onto the trail.	High	PV (YCC)			
	Land acquisition			$0	0%	0%
	Capital works for construction of new open space			$0	0%	0%
7.5.A-4	Continue to investigate options to secure public access along the Yarra River between Coate Park and Rudder Grange.	High	YCC (MWC) Adjoining Land Holder			
	Land acquisition			$0	0%	0%
	Capital works for construction of new open space			$0	0%	0%
	Subtotal for additional open space			***$0***		
EXISTING OPEN SPACE						
7.5B-1	**Alphington Park** Undertake a major upgrade of the playground and picnic facilities in Alphington Park to primarily cater to the forecast population.	High	YCC	$2,502,455	30%	70%
7.5B-2	**Alphington Park Wetland** Continue to maintain and recognise the biodiversity values of the wetland. This includes advocating for ongoing protection for part of the wetland located on adjoining private land.	Ongoing	YCC (Adjoining land holder)	$0	0%	0%
7.5B-3	**Coate Park** Undertake minor upgrade with additional seating, improve the condition of the open grassed areas and continue to improve the biodiversity values of the reserve consistent with the existing masterplan.	High	YCC	$834,152	30%	70%
7.5B-4	**Fairfield Park** Continue to implement the masterplan including a major upgrade to the playground and picnic facilities at the park. Future upgrades are for both the existing and forecast population.	High	YCC	$2,502,455	70%	30%
7.5B-5	**Rudder Grange** Undertake a minor upgrade including a bridge or formalised safe path link between Coate Park and Rudder Grange, along with additional seats and continue to improve the biodiversity values.	Medium	YCC	$427,047	30%	70%
7.5B-6	**Yarra Bend Park (all precincts)** Continue to participate in the future planning and design for Yarra Bend Park to advocate for provision of additional structured sporting facilities where feasible and required in the context of limited additional space being available to cater to the sporting needs of the forecast population in the City of Yarra.	High and Ongoing	PV (YCC)	$0	0%	0%
	Subtotal for existing open space			***$6,266,108***		
	TOTAL FOR FAIRFIELD - ALPHINGTON			***$6,266,108***		

Fitzroy

Strategy Action No.	ACTION	Priority	Respon-sibility	Total Cost	Proportion of cost for existing population	Proportion of cost for new population
ADDITIONAL OPEN SPACE						
7.8A-1	Provide a new Small Local open space in the southern part of open space sub-precinct Fitzroy A. This open space will primarily provide for the forecast future population that will be living and working this southern part of the precinct. The open space will have a role in mitigating urban heat island effect and provide facilities that meet the needs of the forecast future residents and workers and complement those provided in Garryowen Park.	Medium	YCC Developer			
	Land acquisition			$6,055,728	20%	80%
	Capital works for construction of new open space			$575,450	20%	80%
7.8A-2	Provide a new Local open space between Hanover and Gertrude Streets in open space sub-precinct Fitzroy B. This open space will be for both the existing and forecast population and the design will complement King William Reserve and assist to mitigate urban heat island effect as the urban density increases in this area.	High	YCC Developer			
	Land acquisition			$31,306,903	50%	50%
	Capital works for construction of new open space			$1,739,556	50%	50%
7.8A-3	Investigate options to increase the size of King William Reserve to increase the capacity of this existing open space to cater to the forecast population.	Medium	YCC Developer			
	Land acquisition			$3,130,690	20%	80%
	Capital works for construction of new open space			$312,146	20%	80%
7.8A-4	Provide a new Small Local open space in the southern part of open space sub-precinct Fitzroy C primarily for the forecast resident and worker population and also for the existing population.	High	YCC Developer			
	Land acquisition			$6,059,712	30%	70%
	Capital works for construction of new open space			$575,450	30%	70%
7.8A-5	Provide a new Small Local open space south of Gertrude Street in sub-precinct Fitzroy D. This is for both the existing and forecast population and to mitigate urban heat island effect.	Medium	YCC Developer			
	Land acquisition			$7,133,826	40%	60%
	Capital works for construction of new open space			$575,450	40%	60%
7.8A-6	Investigate options to expand the size of Greeves Street Reserve in sub-precinct Fitzroy D. This is primarily for the forecast population and to improve its role in mitigating urban heat island effect.	Medium	YCC Developer			
	Land acquisition			$7,133,826	10%	90%
	Capital works for construction of new open space			$575,450	10%	90%
	Subtotal for additional open space			***$65,174,186***		
EXISTING OPEN SPACE						
7.8B-1	**Atherton Reserve** Undertake a minor upgrade to install fitness equipment/outdated table tennis or other facilities adjacent to the path to increase the diversity of recreation facilities that encourage fitness and use of this open space. This will be for the both the existing and forecast population given the scale of forecast growth.	Ongoing	YCC	$834,152	50%	50%
7.8B-2	**Condell Street Reserve** Undertake a major upgrade to significantly expand the unstructured recreation and social facilities including the playground, picnic and barbecue facilities, paths and open grassed area. This will be for the both the existing and forecast population given the scale of forecast growth and complement the facilities at Atherton Reserve.	High	YCC	$1,020,589	50%	50%
7.8B-3	**Frank King Park** Investigate options to increase the size of the park by expanding it into the existing road reserve, primarily to cater to the forecast community.	High	YCC	$575,450	20%	80%
7.8B-4	**Garryowen Park** Continue to maintain.	Medium	YCC	$0	0%	0%
7.8B-5	**George Street Reserve** Undertake a minor upgrade to increase planting and seating to improve the function and use of this reserve.	Medium	YCC DHHS	$115,090	90%	10%
7.8B-6	**Greeves Street Reserve** Investigate options to expand the size of this open space to increase its function and use in the context of forecast population growth. Refer to Action 7.8A-6.	Ongoing	YCC	Refer to Action 7.8A-6	10%	90%
7.8B-7	**King William Reserve** Continue to maintain.	Ongoing	YCC	$0	0%	0%
7.8B-8	**Smith Reserve** Prepare and implement a masterplan for this reserve to improve the interface to Alexandra Parade, upgrade the play and picnic facility to cater to the increased levels of use anticipated in the future along with potential expansion of the overall size. This will be for the both the existing and forecast population.	Medium	YCC	$1,067,618	50%	50%
7.8B-9	**Whitlam Place** Continue to maintain.	Ongoing	YCC	$0	0%	0%
	Subtotal for existing open space			***$3,612,898***		
	TOTAL FOR FITZROY			***$68,787,084***		

Fitzroy North

Strategy Action No.	ACTION	Priority	Respon-sibility	Total Cost	Proportion of cost for existing population	Proportion of cost for new population
ADDITIONAL OPEN SPACE						
7.9A-1	Provide a new Small Local open space in sub-precinct North Fitzroy B to provide a new open space to address the gap in open space provision in the southern part of the sub-precinct for both the existing and forecast population.	Medium	YCC			
	Land acquisition			$5,669,992	40%	60%
	Capital works for construction of new open space			$575,450	40%	60%
7.9A-2	Investigate options to expand the size of Edwards Place by converting some of the existing road reserves to open space if feasible. Refer also to Action 7.9B-6.	Medium	YCC			
	Land acquisition			$0	0%	0%
	Capital works for construction of new open space			$0	0%	0%
	Subtotal for additional open space			***$6,245,442***		
EXISTING OPEN SPACE						
7.9B-1	**Batman Street Reserve** Undertake a major upgrade to this reserve including investigating options to irrigate the open grassed area and include unstructured recreation facilities appropriate to the needs of the existing and forecast community.	High	YCC	$312,146	50%	50%
7.9B-2	**Batson Reserve** Continue to maintain.	Ongoing	YCC	$0	0%	0%
7.9B-3	**Brookes Crescent Reserve** Continue to maintain.	Ongoing	YCC	$0	0%	0%
7.9B-4	**Bundara Street Reserve** Continue to maintain.	Ongoing	YCC	$0	0%	0%
7.9B-5	**Edinburgh Gardens** Continue to implement the recommendations of the CMP for the northern precinct. Undertake and implement an updated masterplan, particularly in the context of anticipated increased levels of use from the substantial forecast population in the City of Yarra.	High	YCC	$2,502,455	20%	80%
7.9B-6	**Edwards Place** Identify opportunities to increase the size of this open space converting existing road reserves to increase the function and use of this open space for the community when Edinburgh Gardens is being used for major events. This includes a major upgrade to expand the facilities.	Medium	YCC	$1,224,707	20%	80%
7.9B-7	**Holden Byrne Reserve** Undertake a major upgrade to expand the size and improve the quality of the playground and picnic facilities to increase the capacity of the reserve in the context of forecast growth.	Medium	YCC	$1,020,589	20%	80%
7.9B-8	**Janet Millman Reserve (Inner Circle Railway Linear Parklands)** Undertake a minor upgrade to improve seating and picnic facilities.	Medium	YCC	$115,090	80%	20%
7.9B-9	**Langdon Reserve** Undertake a major upgrade including review of the scale and location of the playground and inclusion of picnic facility, additional seating and larger open grassed area.	Low	YCC	$1,020,589	80%	20%
7.9B-10	**Liverpool Street Park** Continue to maintain.	Ongoing	YCC	$0	0%	0%
7.9B-11	**Mark Street Linear Park** Continue to maintain.	Ongoing	YCC	$0	0%	0%
7.9B-12	**Merri Creek Shared Trail –Upstream of St Georges Road** Investigate options to improve condition and definition of the shared trail and the secondary walking trails in this location.	Ongoing	YCC	$0	0%	0%
7.9B-13	**Ottery Reserve** Minor upgrade to improve access and upgrade seating to take advantage of the views down over the Merri Creek corridor.	High	YCC	$25,000	90%	10%
7.9B-14	**Piedmontes Corner** Continue to maintain.	Ongoing	YCC	$0	0%	0%
7.9B-15	**Porter Street Reserve** Continue to maintain.	Ongoing	YCC	$0	0%	0%
7.9B-16	**Raines Reserve** Continue to maintain.	Ongoing	YCC	$0	0%	0%
7.9B-17	**Rushall Reserve** Minor upgrade including for additional seating, drinking fountain and planting to make it more accessible for the local community.	Ongoing	YCC	$834,152	50%	50%
7.9B-18	**Thomas Kidney Reserve** Continue to maintain.	Ongoing	YCC	$0	0%	0%
7.9B-19	**Triangle Park** Continue to maintain this open space including protecting the existing mature trees in this space which is encumbered by traffic movement and noise.	Ongoing	YCC	$0	0%	0%
	Subtotal for existing open space			***$7,054,727***		
	TOTAL FOR FITZROY NORTH			***$13,300,170***		

North Richmond

Strategy Action No.	ACTION	Priority	Respon-sibility	Total Cost	Proportion of cost for existing population	Proportion of cost for new population
ADDITIONAL OPEN SPACE						
7.10A-1	Provide a new Neighbourhood open space in Sub-precinct North Richmond A. There is potential to provide this on the DHHS land, central to the sub-precinct and accessible to the existing and forecast new population.	Very High	YCC DHHS Developer			
	Land acquisition			$0	0%	0%
	Capital works for construction of new open space			$4,170,758	50%	50%
7.10A-2	Provide a new Small Local open space in the sub-precinct North Richmond A, in the Bosisto/Cameron Street area north of Bridge Road as shown in Figure 7.10.F. This is to cater primarily to the forecast new population in the high change area in the south east portion of the sub-precinct.	Very High	YCC Developer			
	Land acquisition			$4,738,741	20%	80%
	Capital works for construction of new open space			$575,450	20%	80%
7.10A-3	Provide a Small Neighbourhood open space in sub-precinct North Richmond C primarily for the forecast population. This is to be located in the south east area of the sub-precinct in the vicinity of Murphy Street and improve the north south pedestrian connectivity between Bridge Road Murphy Street if feasible.	Very High	YCC Developer			
	Land acquisition			$43,849,703	10%	90%
	Capital works for construction of new open space			$2,135,235	10%	90%
7.10A-4	Provide a new Small Local open space in sub-precinct North Richmond C primarily for the future population. This is to be located in the northern part of the sub-precinct in the vicinity of Doonside Streeet/Victoria Gardens.	Very High	YCC Developer			
	Land acquisition			$3,800,308	20%	80%
	Capital works for construction of new open space			$575,450	20%	80%
	Subtotal for additional open space			***$59,845,645***		
EXISTING OPEN SPACE						
7.10B-1	**Annettes Place** Continue to maintain in the short term. In the longer term, undertake a major upgrade to substantially improve the useability and character of this open space to better cater to a diversity of users given the forecast increase in the resident population in the immediate catchment of this reserve.	Low	YCC	$2,085,379	20%	80%
7.10B-2	**Butler Street Park** Minor upgrade to improve planting.	Ongoing	YCC	$15,000	20%	80%
7.10B-3	**Citizens Park** Undertake major upgrades including to the playground and other unstructured recreation facilities, incorporate stormwater harvesting project to improve the sustainable water re-use and management of this reserve to cater to the increased levels of use that this park will receive in the future and assist to mitigate urban heat island effect.	Medium	YCC	$2,085,379	20%	80%
7.10B-4	**Egan Place Park** Investigate opportunities to expand the size of this open space primarily to cater to the forecast future population. Review and revise the open space design, maximising opportunities to integrate sustainable water re-use to increase the greening and the urban cooling role of this open space.	Medium	YCC	$312,146	50%	50%
7.10B-5	**O'Connell Reserve** Continue to maintain.	Ongoing	YCC	$0	0%	0%
7.10B-6	**Urban Art Square** Continue to maintain.	Ongoing	YCC	$0	0%	0%
7.10B-7	**Williams Reserve** Continue to maintain. In the medium term review the options to increase sustainable water re-use in the reserve.	Low	YCC	$347,911	50%	50%
7.10B-8	**Yarra River Trail – River St to Bridge Rd** Continue to undertake improvements where required to the natural biodiversity values, bank stabilisation and linear path connection.	Ongoing	YCC	$0	0%	0%
	Subtotal for existing open space			***$4,845,815***		
	TOTAL FOR NORTH RICHMOND			***$64,691,460***		

Attachment 2. Proportion of Existing and New Residential and Worker Populations by 2031

Table 10 - Existing and New Residential and Worker Population Proportions by 2031

	Existing and New Worker Population Proportions by 2031				Existing and New Residential Population Proportions by 2031				Existing and New Residential and Worker Population Proportions by 2031			
Precinct	Estimated Worker Population 2016	Estimated Worker Population by 2031	Proportion Existing Workers by 2031	Proportion New Workers by 2031	Estimated Residential Population 2016	Estimated Residential Population by 2031	Proportion Existing Residential Population by 2031	Proportion New Residential Population by 2031	Estimated Residential and Worker Population 2016	Estimated Residential and Worker Population by 2031	Proportion Existing Residential and Worker Population by 2031	Proportion New Residential and Worker Population by 2031
Abbotsford	12,057	15,972	75%	25%	8,849	12,671	70%	30%	20,906	28,643	73%	27%
Carlton North - Princes Hill	0	0	0%	0%	9,010	8,843	100%	0%	9,010	8,843	100%	0%
Central Richmond	10,140	13,176	77%	23%	13,888	17,269	80%	20%	24,028	30,445	79%	21%
Clifton Hill	921	1,266	73%	27%	6,792	7,432	91%	9%	7,713	8,698	89%	11%
Collingwood	14,810	25,168	59%	41%	9,141	14,347	64%	36%	23,951	39,515	61%	39%
Cremorne - Burnley - Richmond South	16,704	25,865	65%	35%	4,622	9,539	48%	52%	21,326	35,404	60%	40%
Fairfield - Alphington	0	0	0%	0%	2,894	9,099	32%	68%	2,894	9,099	32%	68%
Fitzroy	17,014	25,216	67%	33%	11,465	15,798	73%	27%	28,479	41,014	69%	31%
Fitzroy North	0	0	0%	0%	12,357	15,112	82%	18%	12,357	15,112	82%	18%
North Richmond	13,179	17,444	76%	24%	14,335	21,754	66%	34%	27,514	39,198	70%	30%

Attachment 3. City of Yarra Net Developable Area Estimates

Excludes all land zoned Public Use Zone, Public Recreation and Resource Zone, Public Park and Recreation Zone, Urban Floodway Zone and Transport Zone 1 and 2.

Table 11 - City of Yarra Net Developable Area Estimates x Precinct

Zone	Abbotsford (m2)	Carlton North - Princess Hill (m2)	Central Richmond (m2)	Clifton Hill (m2)	Collingwood (m2)	Cremorne, Richmond South and Burnley (m2)	Fairfield – Alphington (m2)	Fitzroy (m2)	Fitzroy North (m2)	North Richmond (m2)	City of Yarra Total (m2)
COMMERCIAL 1 ZONE	192,846	46,773	164,369	28,980	243,679	162,393	43,609	346,782	72,617	186,507	1,488,554
COMMERCIAL 2 ZONE	172,992	0	25,153	51,421	296,123	441,084	19,826	19,496	14,322	63,227	1,103,645
COMPREHENSIVE DEVELOPMENT ZONE - SCHEDULE 1		0								127,184	127,184
COMPREHENSIVE DEVELOPMENT ZONE - SCHEDULE 2		0				8,452					8,452
COMPREHENSIVE DEVELOPMENT ZONE - SCHEDULE 3		0				12,790					12,790
GENERAL RESIDENTIAL ZONE - SCHEDULE 1	4,365	128	2,289	344	7,184	2,717		6,629	7,185	4,173	35,013
GENERAL RESIDENTIAL ZONE - SCHEDULE 2	133,344	36,110	614,495	30,485	52,229	122,340		37,861	87,985	540,815	1,655,664
GENERAL RESIDENTIAL ZONE - SCHEDULE 3		12,855	11,831	15,193	107,882	6,289		85,517	82,501	223,862	545,930
GENERAL RESIDENTIAL ZONE - SCHEDULE 4		0	48,788	6,930		6,166		6,850		21,114	89,848
INDUSTRIAL 1 ZONE	269,095	0								102,085	371,181
INDUSTRIAL 3 ZONE	62,915	0				103,276				15,216	181,407
MIXED USE ZONE	33,864	1,630	90,024	56,529	192,320	5,988	188,740	199,811	121,508	146,197	1,036,612
NEIGHBOURHOOD RESIDENTIAL ZONE - SCHEDULE 1	376,378	1,180,449	654,067	806,085	239,196	260,046		549,597	1,356,957	248,902	5,671,678
NEIGHBOURHOOD RESIDENTIAL ZONE - SCHEDULE 2		0					635,924				635,924
NEIGHBOURHOOD RESIDENTIAL ZONE - SCHEDULE 3		0					3,850				3,850

Zone	Abbotsford (m2)	Carlton North - Princess Hill (m2)	Central Richmond (m2)	Clifton Hill (m2)	Collingwood (m2)	Cremorne, Richmond South and Burnley (m2)	Fairfield – Alphington (m2)	Fitzroy (m2)	Fitzroy North (m2)	North Richmond (m2)	City of Yarra Total (m2)
PRIORITY DEVELOPMENT ZONE - SCHEDULE 1	31,419	0									31,419
SPECIAL USE ZONE - SCHEDULE 1		0					500,673				500,673
SPECIAL USE ZONE - SCHEDULE 2	11,670	0									11,670
SPECIAL USE ZONE - SCHEDULE 3		0					29,899				29,899
SPECIAL USE ZONE - SCHEDULE 4	72,509	0									72,509
SPECIAL USE ZONE - SCHEDULE 5		0								21,696	21,696
SPECIAL USE ZONE - SCHEDULE 6		0			8,912						8,912
Total Net Developable Area (m2)	1,361,397	1,277,945	1,611,016	995,967	1,147,524	1,131,541	1,422,521	1,252,543	1,743,075	1,700,979	13,644,508
Total Net Developable Area (hectares)	**136.1**	**127.8**	**161.1**	**99.6**	**114.8**	**113.2**	**142.3**	**125.3**	**174.3**	**170.1**	**1,364**
Total Site Area (hectares)	**178.7**	**140.6**	**196.0**	**166.6**	**129.2**	**233.1**	**347.2**	**140.3**	**231.5**	**192.1**	**1,955.2**