SGS Economics & Planning

CITY OF MONASH - OPEN SPACE CONTRIBUTION RATE PLANNING

FINAL REPORT
OCTOBER 2018

Prepared for
City of Monash

Independent insight.

SGS Economics and Planning Pty Ltd
ACN 007 437 729
www.sgsep.com.au
Offices in Canberra, Hobart, Melbourne, Sydney

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EXECUTIVE SUMMARY

Background

The Draft Monash Open Space Strategy 2018 is being finalised and will guide Monash City Council on its open space program. The strategy establishes priorities for open space planning, determines capital works and identifies future open space requirements. It will also recommend an open space contribution rate for inclusion as a revised Schedule to Clause 53.01 (Public Open Space Contribution and Subdivision) of the Monash Planning Scheme.

SGS was engaged to provide advice on the feasibility and appropriateness of revising open space contribution rates within Monash City Council.

This report provides an independent analysis of open space contribution requirements for the City of Monash based on expected rates of growth. This allows for a critical evaluation of the feasibility of applying new open space contribution rates for developments of three or more dwellings in the City of Monash, and an assessment of the most appropriate rate to apply.

Existing access to open space

Levels of access to open space can be assessed through looking at the provision rate open space overall, and the accessibility of open space for residents. Two measures were used to assess access: accessible open space per capita and the amount of open space accessible within 400 metres.

These measures provide useful guidance for open space planning and reveal priority areas for new open spaces. Analysis has identified areas with low levels of open space provision per capita, and a municipal wide average of 85 per cent of the population with access to open space within 400 metres (below the target of 95 per cent). These findings indicate a need for greater expenditure in open space, which can be supported through an appropriate open space contribution rate.

Population trends

The City of Monash is projected to experience steady population growth across the municipality. In 2028, the City of Monash is expected to be home to 206,907 residents; an additional 14,057 residents from 2016. This will create greater pressure on existing open spaces. Without funding for new open spaces, there will be a reduction in the open space per capita rates and an increase in the number and proportion of residents who do not have access to open space within 400 metres. The growth in population provides further justification for the implementation of an appropriate open space contribution rate to improve existing open spaces and acquire new ones.

Open Space Provision Standards

Open space standards have been incorporated into planning schemes and open space strategies to ensure equitable access to open space across municipalities. Currently, open space assessments are largely quantitative in nature, with a focus on quantity and proximity measures.

A number of Melbourne based local governments apply a per capita provision rate to determine open space standards, and typically range between 24 and 30.3 square metres per capita. 30 square metres is a reasonable open space provision rate standard, based on national and international norms.

The Draft Monash Open Space Strategy 2018 identifies that open space is to be provided within 400m of every residence in the municipality, giving consideration to barriers that prevent access to open space.

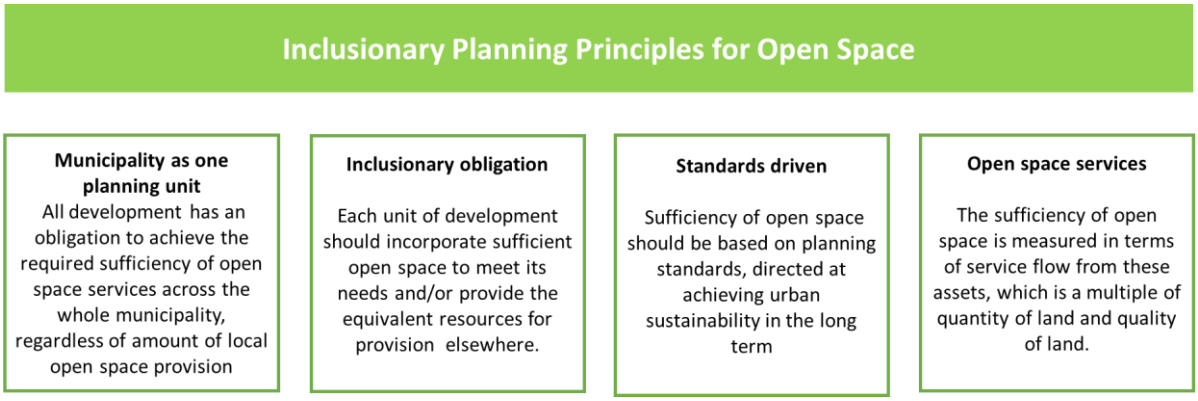
However, increasingly the importance of assessments that also include a qualitative basis is acknowledged, to ensure that open space is not only accessible, but of a high quality.

Calculating open space requirements

The calculation of open space contribution requirements is founded on four key principles described below and in Figure 1.

1. The City of Monash is considered a single planning unit for open space planning purposes. Clause 53.01 allows for open space contributions collected to be spent anywhere within the municipality, that is, not necessarily in the vicinity of where the collections are made.
2. An inclusionary requirements approach means that all development should provide sufficient open space services to meet its need as indicated by planning standards. This can be through land or cash in kind contributions, and it is at Council's discretion how these are collected.
3. All existing and future residents of the City of Monash are entitled to have access to a reasonable standard of open space. Planning standards for per capita provision rates provide a starting point for determining open space requirements.
4. Open space services are a combination of the quality of open space and the quantity of open space. Planning for future open space acquisitions and upgrades should seek the most equitable distribution of open space services across the City.

FIGURE 1 INCLUSIONARY PLANNING PRINCIPLES FOR OPEN SPACE



Source: SGS Economics & Planning Pty Ltd

Open Space Services

'Services' refers to a combination of the quantity and quality of open space. *Better quality open spaces deliver a greater amount of open space 'services' to the local community than poorer quality open spaces* ***of the same size.*** Better quality open spaces can have a range of improvements, including: increased infrastructure, improved maintenance, etc.

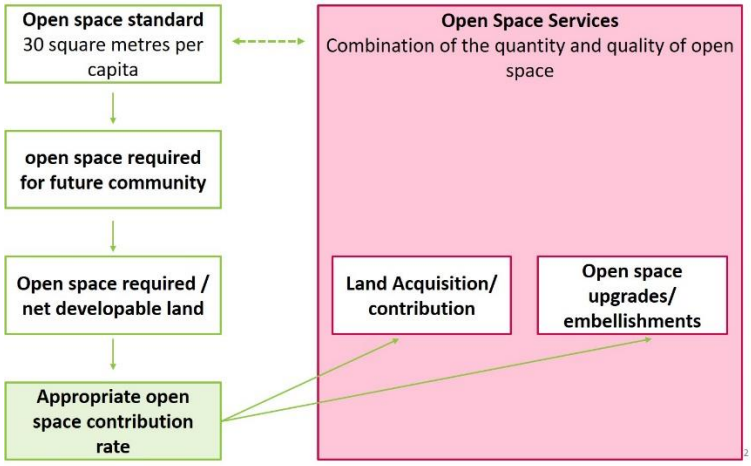
Conceptually then, by improving the quality of open space via increased investment the intensity and diversity of uses that can occur there is also increased. It provides a higher level of 'service.'

In an established area like Monash, it is difficult to provide significant additional quantum of land for open space. Improving Open Space *Services*, through a combination of land acquisition, and improvements and upgrades to existing open space, is a more practical approach to improving open space.

To calculate how much open space *services* are required, the quantum of open space per capita is used as an *equivalent*.

Figure 2 illustrates the process of determining open space contribution rates, and the relationship between the contribution rate and open space services to be provided.

FIGURE 2: OPEN SPACE CONTRIBUTION RATE ASSESSMENT



Source: SGS Economics and Planning, 2018

Open Space Standards

The first step is to set an open space standard. The appropriate provision standard for the City of Monash is 30 square metres per capita, consistent with other local planning standards. This is used as an equivalent measure for open space services. A focus on open space services supports Council planning for improving the quality of open spaces, as well as the quantum of open spaces.

Open space required for future community

The second step identifies the open space requirements of the future City of Monash population. The per capita rate is applied to the projected population at 2028.

Open Space required / net developable land

The future quantum of open space required is then identified as a proportion of Monash's total land area. This informs the open space contribution rate.

It is calculated by estimating the total net developable urban area (net developable land) using property parcel information[1]. The future quantum of open space required is then divided by the net developable land.

This leads to an open space contribution rate of 10 per cent for all commercial, residential and industrial land uses within Monash. This is illustrated in Table 1.

TABLE 1: OPEN SPACE CONTRIBUTION RATE CALCULATION

Step	Metric	Value
1	Planned population* (effective build out)	206,907 people
2	Total net developable urban area (total area of all developable lots in study area).	6,494 hectares
3	Open space required (@30m^2/capita)	620.72 hectares
4	Open space requirement from all developable land (value at step 3 divided by value at step 2)	10 per cent**

Source: SGS Economics and Planning, 2018, *id. forecasts, 2016.

** 9.56% is rounded up to 10%.

[1] This includes all land uses that are suited to redevelopment for commercial, industrial and residential land uses, and excludes schools, parklands, community facilities roads and other land used for transport

Recommendations

This inclusionary requirements approach is founded on the principle that all development must meet an open space standard, and is intended to ensure equitable access to open space across the whole municipality, in the long run. It does not burden development in under-supplied areas with greater costs for improving open space, instead recognising that the entire municipality is a singular planning area for open space, across which an acceptable standard of open space services must be met.

A contribution rate of 10 per cent of land value is recommended to deliver a reasonable standard of open space provision across the whole of Monash. This contribution rate reflects the need to ensure that all residents in the future (2028) have access to an appropriate level of open space services.

Council's existing open space contribution rates as specified in Clause 53.01 are considerably lower than this recommended contribution rate. When existing contribution rates are translated to provision rate standards, open space provision becomes as low as 6.3 square metres per capita (equivalent in open space services).

The adoption of a 10 per cent contribution rate in the City of Monash will allow Council to deliver projects identified in the open space strategy. The focus on open space services supports Council planning for high quality open spaces while also addressing gaps in access to open space across the municipality.

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1. INTRODUCTION

1.1 Background

The Draft Monash Open Space Strategy 2018 is being finalised and will guide Monash City Council on its open space program. The strategy establishes priorities for open space planning, determines capital works and identifies future open space requirements. It will recommend an open space contribution rate for inclusion as a revised Schedule to Clause 53.01 (Public Open Space Contribution and Subdivision) of the Monash Planning Scheme.

Monash City Council sought independent advice from SGS on the feasibility and appropriateness of open space contribution rates within the City of Monash. The current open space contribution rates set out in the Schedule to Clause 53.01 of the Monash Planning Scheme are:

TABLE 2: EXISTING OPEN SPACE CONTRIBUTION RATES IN MONASH

Type or location of subdivision	Amount of contribution for public open space
3 lots	2%
4 lots	3%
5 lots	4%
6 lots or more	5%
Other	5%

Source: Monash Planning Scheme, 2018

Open space contributions can be a percentage of the land intended to be used for residential, industrial or commercial purposes, or a percentage of the site value of such land, or a combination of both. It is at Council's discretion how open space contributions are collected.

Over the last 5 financial years, Monash City Council have collected between $2 and $5 million in open space contributions per year. These are summarised in Table 3.

TABLE 3:OPEN SPACE CONTRIBUTION COLLECTIONS 2013-2018

Financial Year	Open Space Contributions collected
2017-2018	$4.97 million
2016-2017	$4.22 million
2015-2016	$5.31 million
2014-2015	$3.03 million
2013-2014	$2.05 million

Source: Monash City Council, 2018

1.2 Purpose of Report

This report recommends and justifies a singular open space contribution rate that can be introduced at Clause 53.01 of the Monash Planning Scheme and be applied to the entire municipality.

This report provides an independent analysis of open space contribution requirements for the Monash City Council, based on the projected future population of the City in 2028. It presents a critical evaluation of the feasibility of applying an open space contribution rate for the development of three or more dwellings in the City of Monash, and an assessment of the most appropriate rate(s) to apply.

To this end, this report contains the following sections:

- Section 2: A review of residents' access to open space within the municipality. It includes an assessment of the quantity of open space available to residents and how close residents are to open space.
- Section 3: A review of population projections in the City of Monash between 2016 and 2028 to determine the scale and distribution of future growth.
- Section 4: A review of three standards that are used to assess open space provision: Quantity-based standards, proximity-based standards and quality-based standards. It discusses the concept of open space services, which underpins the strategic justification for developing open space contribution rates.
- Section 5: An assessment of appropriate open space contribution rates for the City of Monash based on the principle of inclusionary requirements.
- Section 6: Recommendations for the implementation of an appropriate open space contribution rate.

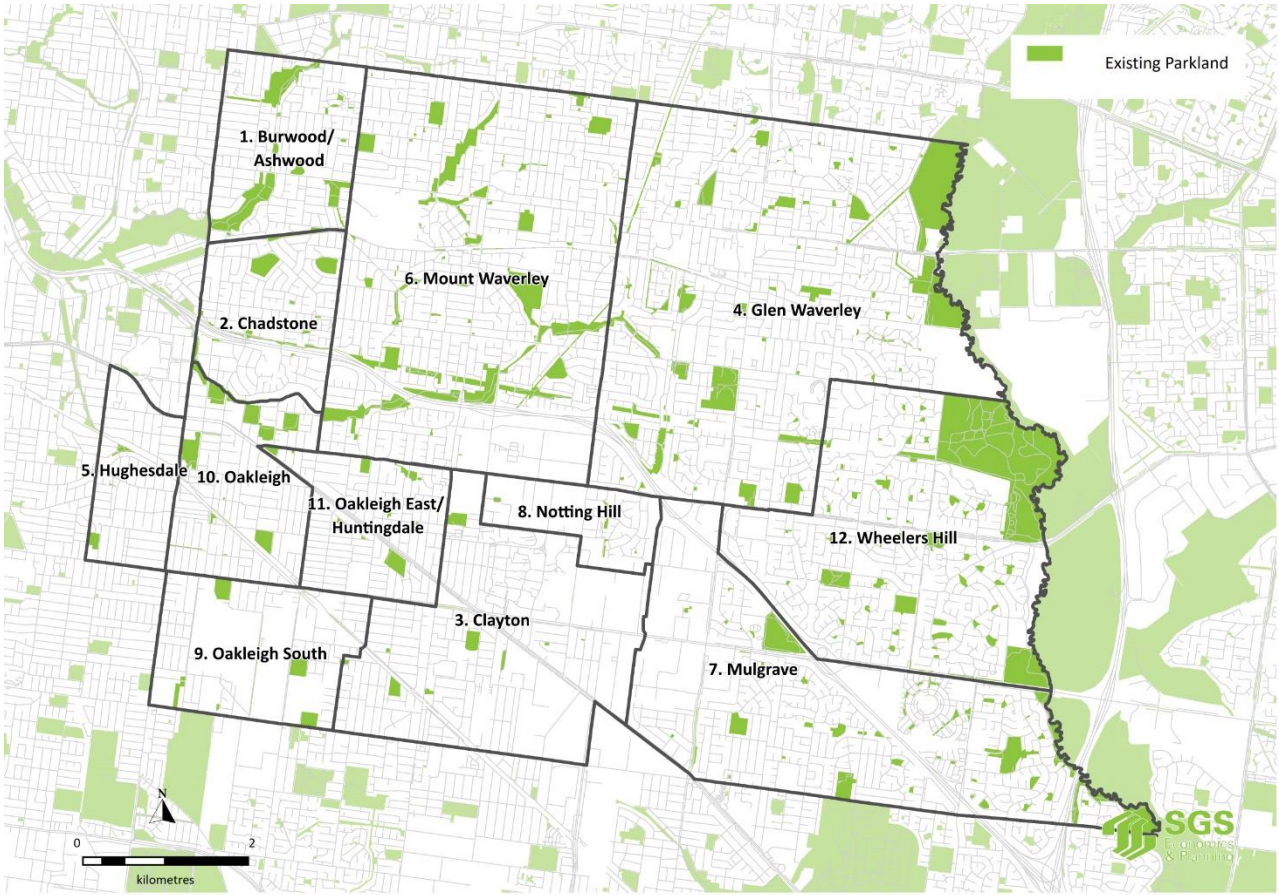
2. OPEN SPACE ACCESSIBILITY

This section reviews residents' access to open space within the municipality. It also includes an assessment of the quantity of open space available to residents and how close residents are to open space. These are key benchmarks in informing open space planning.

2.1 Spatial distribution of public open space

The City of Monash is home to over 1,000 hectares of open space, of which 512 hectares is owned by the Council and is publicly accessible. There are several major creeks within the municipality and open space is generally clustered along these corridors. The Dandenong Creek runs along the eastern boundary of the municipality and is home to a series of large regional parks and open spaces, including Jells Park and Mulgrave Reserve. Scotchmans Creek, Gardiners Creek and Damper Creek also form spines of open space that run through the municipality. Other local and district open spaces are distributed across the City with some areas such as Wheelers Hill enjoying access to a significantly larger proportion of open spaces.

FIGURE 3: EXISTING OPEN SPACE NETWORK



Source:SGS Economics and Planning, 2018

2.2 Open space provision rates

The variation in provision rate of open space is an important consideration for the Strategy.

The provision of open space per capita for 2016 and projected provision rate of open space per capita for 2028 are shown in Table 4, by precinct. It shows there is significant variation across the City of Monash; the following areas have high provision rates and are anticipated to continue to do so:

- Ashwood/Burwood,
- Mount Waverley,
- Mulgrave,
- Oakleigh and
- Wheelers Hill.

Other areas have considerably smaller provision rates (approximately 5 square metres per capita):

- Clayton,
- Hughesdale and
- Notting Hill

TABLE 4 PROVISION RATES BY PRECINCT

Precinct No.	Precinct	Population 2016	Population 2028	All Open Space (Ha) *	Monash Community Open Space (Ha)**	Square metres per capita 2016	Square metres per capita 2028
1	Ashwood/ Burwood	10,198	10,576	53.9	42.6	41.7	40.2
2	Chadstone	9,112	9,933	38.2	17.8	19.5	17.9
3	Clayton	20,611	23,963	39.5	12.0	5.8	5.0
4	Glen Waverley	42,272	44,152	256.6	106.7	25.2	24.2
5	Hughesdale	8,002	8,385	5.5	4.5	5.6	5.4
6	Mount Waverley	35,431	36,638	198.0	129.3	36.5	35.3
7	Mulgrave	20,526	20,861	95.4	64.9	31.6	31.1
8	Notting Hill	3,244	3,528	5.9	1.7	5.1	4.7
9	Oakleigh South	5,381	6,504	144.4	16.3	30.2	25.0
10	Oakleigh	8,352	10,004	34.4	33.0	39.6	33.0
11	Oakleigh East/ Huntingdale	8,804	9,155	12.1	10.6	12.0	11.6
12	Wheelers Hill	20,917	23,210	250.1	72.8	34.8	31.4
Total		**192,850**	**206,907**	**1134.0**	**512.1**	**26.6**	**24.8**

Source: City of Monash, 2018, SGS Economics and Planning 2018

2.3 Access to open space

One of the core principles in the draft Monash Open Space Strategy is for all residents to have access to open space within 400 metres walking distance of their residence. This is in line with Clause 56.05-02 Standard C13 of the Planning Scheme and VPA Precinct Structure Plan guidance for local parks within 400m (of 95 per cent of all dwellings)[2].

An analysis of gaps in access to the open space network was conducted, using the existing road network to determine how far each property parcel is from open space[3]. Importantly, this analysis excluded some open spaces based on access constraints, encumbrances and use constraints due to small size, as follows:

- All private land (e.g. Golf Courses owned by Golf Clubs)
- All restricted public land (e.g. Golf Courses owned by council)
- Visual amenity spaces, accessways and trails smaller than 0.1 hectare
- Relaxation/contemplation spaces smaller than 500 square metres
- Small to medium utility/buffer/environmentally constrained sites

It indicated that currently, 85 per cent of Monash residents have access to open space within 400 metres. This varies considerably across the municipality, as shown in Table 5. Key findings include:

- 50 per cent of residents in Clayton, (10,306 people) do not have access to open space within 400 metres
- 39 per cent of Hughesdale residents do not have access to open space
- over 90 per cent of residents in Glen Waverley, Mount Waverley, Mulgrave and Wheelers Hill have access to open space within 400 metres.

TABLE 5: RESIDENTS WITH ACCESS TO OPEN SPACE WITHIN 400 METRES

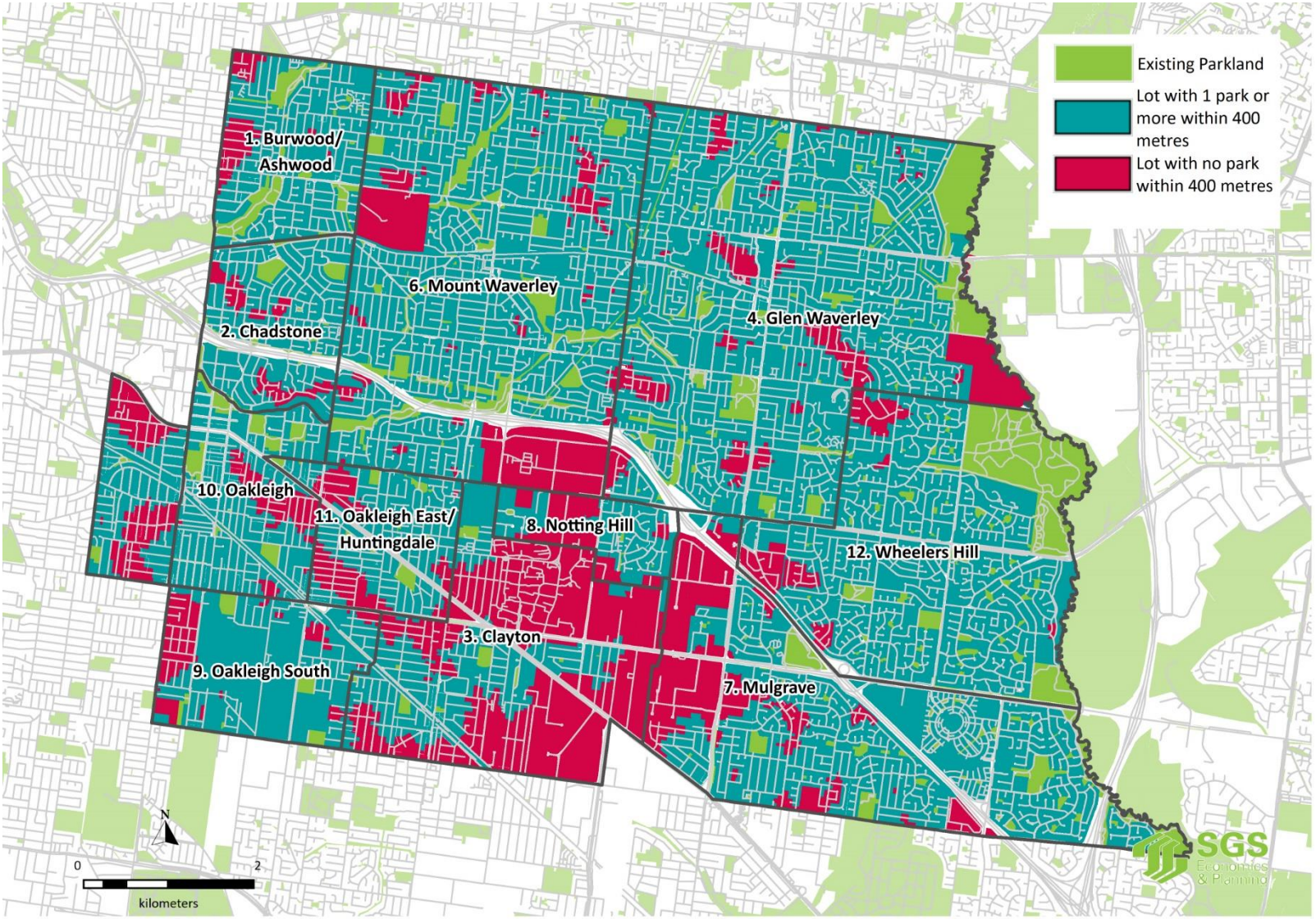
Precinct	No. of people with access to open space within 400m	No. of people without access to open space within 400m	% of population with access to open space within 400m
Ashwood/ Burwood	8,770	1,428	86%
Chadstone	7,927	1,185	87%
Clayton	10,226	10,384	49.5%
Glen Waverley	39,313	2,959	93%
Hughesdale	4,881	3,121	61%
Mount Waverley	32,951	2,480	93%
Mulgrave	18,884	1,642	92%
Notting Hill	3,147	97	97%
Oakleigh South	4,036	1,345	75%
Oakleigh	6,348	2,004	76%
Oakleigh East/ Huntingdale	7,307	1,497	83%
Wheelers Hill	19,662	1,255	94%
Total	**163,923**	**28,928**	**85%**

Source: SGS Economics and Planning , 2018

Figure 4 illustrates the current distribution of access to the existing open space network.

[2] Clause 56.05-02
•Local parks within 400 metres safe walking distance of at least 95 percent of all dwellings. Where not designed to include active open space, local parks should be generally 1 hectare in area and suitably dimensioned and designed to provide for their intended use and to allow easy adaptation in response to changing community preferences
•Active open space of a least 8 hectares in area within 1 kilometre of 95 percent of all dwellings
[3] This includes consideration of the impact of crossing major roads

FIGURE 4: CURRENT ACCESS TO OPEN SPACE NETWORK



Source:SGS 2018. This map excludes access to: All private land (e.g.Golf Courses owned by Golf Clubs), All restricted public land (e.g. Golf Courses owned by council), Visual amenity spaces, accessways and trails smaller than 0.1 hectare, Relaxation/contemplation spaces smaller than 500 square metres and Small to medium utility/buffer/environmentally constrained sites It also excludes access to parks outside of Monash.

2.4 Key findings

Planning for open space should be informed by a range of considerations, including: the spatial distribution of open space across a municipality, and what this means for the rate of provision of open space as well as access that households have to open space.

Households in Wheelers Hill, Mulgrave and Mount Waverley currently enjoy excellent access to open space across both these measures. Clayton and Hughesdale consistently show poor access to open space.

This information provides useful guidance for open space planning, revealing priority areas for new open spaces, under existing conditions. Areas with low levels of open space provision per capita, and a municipal wide average of 85 per cent of the population with access to open space within 400 metres (below the target of 95 per cent) indicate a need for increased open space services.

3. POPULATION TRENDS

This section describes the population growth forecast for the City of Monash between 2016 and 2028, and implications for residents' access to the open space network.

3.1 Population forecasts

Population growth between 2016 and 2028 is anticipated to be distributed across the municipality as shown in Figure 5, with the greatest growth occurring in Oakleigh and Clayton,.

FIGURE 5: POPULATION GROWTH BY OPEN SPACE PRECINCT

Source: .id Forecasts 2017, SGS Economics and Planning, 2018

Table 6 summarises population growth expected to occur across the City of Monash between 2016 and 2028. Over this period, the population is projected to grow by 14,057, to nearly 207,000 by 2028. This growth implies a relatively modest average annual growth rate (AAGR) of around 0.59 per cent.

Table 6 also distinguishes growth in some centres from growth in surrounding suburbs. For example, Clayton Activity Centre (AC), and Clayton (Balance). Clayton (Balance) is the area of Clayton located outside of the Activity Centre.

TABLE 6. POPULATION BY PRECINCT 2016 TO 2028

Open Space Planning Precincts	2016	2018	2028	Change 2016-28	AAGR	Total Growth 16-28
Ashwood - Burwood	10,198	10,373	10,576	378	0.30%	4%
Chadstone	9,112	9,560	9,933	821	0.72%	9%
Clayton (AC)	12,145	12,527	13,010	865	0.57%	7%
Clayton (Balance)	8,466	8,692	10,953	2,487	2.17%	29%
Glen Waverley (AC)	14,603	14,894	15,619	1,016	0.56%	7%
Glen Waverley (Balance)	27,669	27,934	28,533	864	0.26%	3%
Hughesdale	8,002	8,074	8,385	383	0.39%	5%
Mount Waverley	35,431	35,620	36,638	1,207	0.28%	3%
Mulgrave	20,526	20,773	20,861	335	0.13%	2%
Notting Hill	3,244	3,329	3,528	284	0.70%	9%
Oakleigh South	5,381	5,559	6,504	1,123	1.59%	21%
Oakleigh (AC)	1,837	1,969	2,513	676	2.65%	37%
Oakleigh (Balance)	6,515	6,777	7,491	976	1.17%	15%
Oakleigh East - Huntingdale	8,804	8,881	9,155	351	0.33%	4%
Wheelers Hill	20,917	21,425	23,210	2,293	0.87%	11%
City of Monash	***192,850***	***196,385***	***206,907***	**14,057**	**0.59%**	**7%**

Source: .id Forecasts 2017, SGS Economics and Planning, 2018

The precincts expected to accommodate the greatest quantum of population increase are Clayton (Balance) (+2,487), Wheelers Hill (+2,293), Mount Waverley (+1,207), and Oakleigh South (+1,123).

In percentage terms, the regions expected to accommodate the greatest increase in population are Oakleigh Activity Centre (2.59 per cent per annum), Clayton – Balance (+2.17 per cent), Oakleigh South (+1.59 per cent) and Oakleigh – Balance (+1.17 per cent). No other region is expected to record an AAGR of greater than 1 per cent, with most expected to grow at an annual rate of less than 0.5 per cent.

Population projections for Oakleigh Activity Centre

Whilst .id Forecasts produce separate population estimates and projections for activity centres in Clayton and Glen Waverley, they do not do so for Oakleigh. Council, however, wish to understand how population growth is likely to vary within and outside the Oakleigh Activity Centre (Oakleigh AC). To inform this, SGS has devised an approach based on small area population growth forecasts by travel zone.

Given the Oakleigh AC does not neatly align to the boundaries of the travel zones used to project population growth, SGS has broken these travel zones down into smaller-scale mesh blocks. A growth rate for the surrounding areas was then calculated using small area population growth forecasts and applied to the mesh blocks outside of the Oakleigh AC. The balance of total population growth anticipated for the travel zones in question is then distributed to the Oakleigh AC.

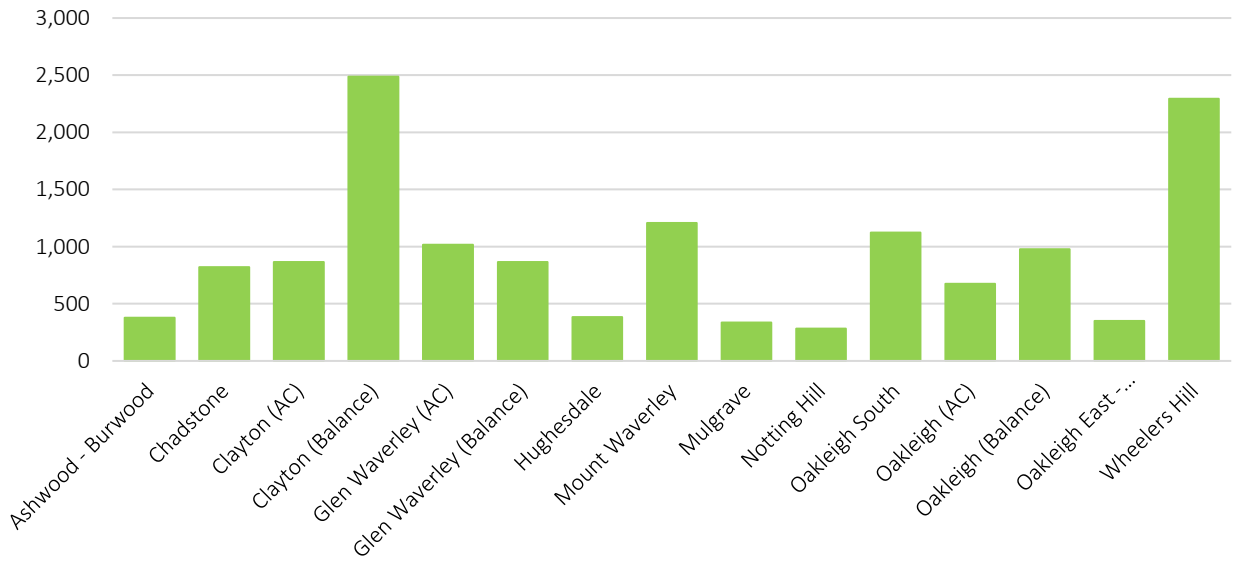
This approach reveals that expected population growth rates within and outside the Oakleigh AC are 2.65 per cent and 1.17 per cent respectively.

Intensity of expected urban change across Monash.

Figure 6 presents anticipated population growth across Monash regions in absolute terms, showing clearly that Wheelers Hill and Clayton – Balance will accommodate the greatest absolute increases in population between 2016 and 2028. Whilst this figure is useful, it doesn't take into consideration the proportional changes in population and consequently, the anticipated intensity of development.

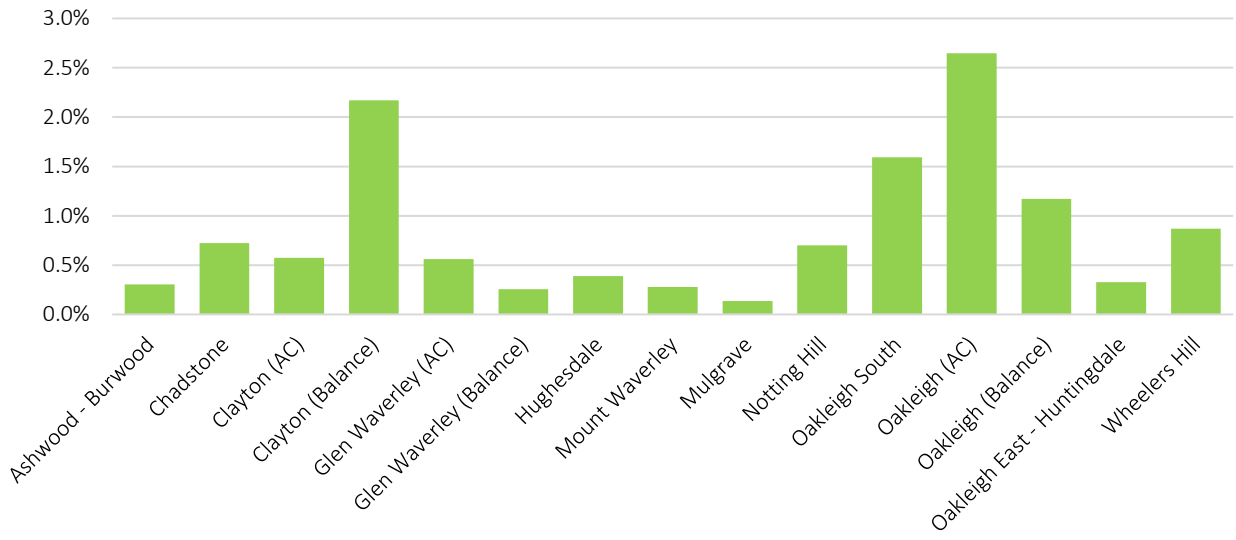
Figure 7 shows proportional growth rates, recognising that the populations of some suburbs. This figure provides a clearer indication as to the likely intensity of development across various parts of Monash, revealing that Clayton – Balance, Oakleigh AC and Oakleigh South are expected to see annual population growth in excess of 1.5 per cent, with population growth across most other Monash regions forecast to be very low. Figure 6 and Figure 7 both indicate that future population growth will be incremental, distributed and not concentrated in Activity Centres.

FIGURE 6. ABSOLUTE POPULATION GROWTH BY MONASH OPEN SPACE PLANNING PRECINCT, 2016 TO 2028



Source: .id Forecasts, SGS Economics and Planning, 2018

FIGURE 7. PROPORTIONAL POPULATION GROWTH BY MONASH OPEN SPACE PLANNING PRECINCT, 2016 TO 2028



Source: .id Forecasts, SGS Economics and Planning, 2018

3.1 Key findings

The City of Monash is projected to experience steady population growth, distributed across the municipality. This will create greater pressure on existing open spaces and without funding for new open spaces, will see a reduction in the open space per capita rates (as shown in Table 4), and an increase in the number and proportion of residents who do not have access to open space within 400 metres. The growth in population provides further justification for the implementation of an appropriate open space contribution rate to improve existing open spaces and acquire new ones.

4. OPEN SPACE PROVISION STANDARDS

The preceding sections have outlined the current and future provision rates and levels of access to open space, given the current and projected scale and distribution of population growth.

This section describes considers these rates in the context of open space provision standards: Quantity, Proximity and Quality. It introduces the concept of open space services to link quantity and quality standards.

Open space standards have been incorporated into planning schemes and open space strategies to ensure equitable access to open space across municipalities. Currently, open space assessments are largely quantitative in nature, with a focus on quantity (provision rates) and proximity measures (access to open space). However, increasingly the importance of assessments that also include a qualitative basis is acknowledged, to ensure that open space is not only accessible, but of a high quality.

A focus on quantitative measures may potentially lead to insufficient consideration on the quality of parks themselves, leading to poor quality spaces that are underused.

A more sophisticated approach to planning open space is required, taking into account the quality and use of open space. This is particularly important in the context of challenges such as projected population growth and changing population structures and demographics which change the community's needs for open space.

Qualitative measures are also important to consider in cases where it may be too expensive for Councils to acquire new land (particularly in the inner suburbs). Such an approach provides an alternative measure for Council to improve the open space network by improving the quality of the open space assets they already have so they can perform at a higher function and support a broader range uses.

4.1 Quantity Based Standards

Metrics for 'best practice' in open space allocations differ somewhat between countries. In the US, for example, researchers have found that 4ha of open space per 1000 people is considered the norm, compared to 2.83ha open space per 1000 people in the UK.

In comparison, the standards in Australia vary; the National Capital Commission (Canberra, 1981) proposes 4ha per 1000 people, Queensland 4 to 5ha per 1000 people[4] and South Australia currently requires a 12.5% open space contribution, which generally translates to 3.8 ha per 1000 people in greenfield areas.

Precinct Structure Planning Guidelines prepared by the Growth Areas Authority[5] recommend that:

[4] Local Government Research and Development Fund (2011) Best Practice Open Space in Higher Density Developments Project: Research Findings. Local Government Research Project into Best Practice Open Space Provision for Higher Density Infill Development Project.

[5] https://www.vpa.vic.gov.au/wp-content/Assets/Files/PSP%20Guidelines%20-%20PART%20TWO.pdf

- major employment areas should have 2% net developable land as public open space, with a passive recreation function.
- Other areas (which are predominantly residential but include a mix of land uses) should have 10% of the net developable area as public open space, of which 6% is active open space.[6]

Melbourne based local governments included in Table 7 illustrate a range between 24 and 30.3 square metres per capita. 30 square metres is considered a reasonable benchmark to apply as an open space standard, based on national and international norms.

TABLE 7: OPEN SPACE PROVISION STANDARDS

Source	Total open space provision rate (m^2 per capita)	Total open space provision rate (Ha/1000 people)
American Park and Outdoor Art Association (1901)	20.0	2.0
British National Playing Fields Association (1938)	24.3	2.4
US National Recreation and Parks Association	40.0	4.0
NSW (as cited in Thompson, S. (2008). Design for Open Space (Fact Sheet). Your Development. URL: http://yourdevelopment.org/factsheet/view/id/72	28.3	2.8
Commonwealth of Australia - Joint Venture for More Affordable Housing (1989)	16.0*	1.6
Vic Gov - Planning for Community Infrastructure for Growth Areas (2008)	26.4**	2.6
Vic –default contribution in Subdivision Act (5%)	13.3*	1.3
City of Kingston open space strategy 2012	24	2.4
City of Wyndham Open Space Strategy 2045	30	3
Frankston City Council Open Space Strategy2016-2036	30.3	3.03
South Australian guidelines	12.5% net developable area	n/a
Precinct Structure Plan Guidelines Vic	10% net developable area	n/a

* Excludes higher order passive open space and based on suburban developments of 15 dwellings per hectare
** Comprising $10m^2$ for neighbourhood passive open space, $8.88m^2$ for neighbourhood active open space and $7.5m^2$ for higher order active open space

4.2 Proximity-Based Standards

While quantity standards provide an indicative measure of open space, in isolation these standards do not take into consideration location, access and quality of these spaces. For example, considerable areas of open space may be located outside of an open space precinct boundary that could be serving people within the adjoining community. However, as it is not directly located in the precinct, it is not taken into account resulting in an inaccurate understanding of access to open space.

Proximity-based measures are designed to indicate distribution and access to open space. They are generally expressed as the percentage of dwellings within walking distance of open space.

Victorian Planning Provisions in planning schemes provide guidelines for proximity-based pubic open space provision. Clause 56.05-2 Public Open Space Provision seeks to provide a network of quality, well-distributed, multi-functional and cost effective public open space. Standard C13 identifies the following proximity standards:

- Local parks within 400m safe walking distance of at least 95% of all dwellings.

[6] https://www.parksleisure.com.au/documents/item/2091

- Active open space of at least 8 hectares in area within 1km of 95% of all dwellings
- Linear parks and trails along waterways, vegetation corridors and road reserves within a 1km of 95% of all dwellings.

The Draft Monash Open Space Strategy 2018 identifies that open space is to be provided within 400m of every residence in the municipality, giving consideration to barriers that prevent access to open space. Monash applies 400m as a widely accepted 'walkable' distance for most residents, as indicated in various studies on walking distances and access to local destinations.

While important, these proximity/ access measures do not consider the quality of open space that is provided.

4.3 Quality-Based Standards

In order to meet the needs of a diverse and growing community, qualitative measures that reflect the quality and use of space need to be taken into consideration in open space planning to avoid producing bland and unused open spaces. In the UK, CABE (2005) advises that 'quantitative national standards should be used with care' and instead advocate for standards that are set locally to address local needs, demographics and economic patterns. CABE argue that an understanding of the types of green space and their suitability for multiple uses is important.

Use of public open space is influenced by a variety of factors. Concerns of safety and security, poor facilities and environmental problems such as litter and vandalism are some reasons identified in a UK study investigating what deters use of open space. These are primarily amenity and maintenance issues that can be addressed through quality upgrades. Quality of green urban space can be understood and categorized into four dimensions (Malek et al). These are:

- natural factors such as tree coverage and biodiversity.
- design considerations including accessibility, recreational facilities and amenities.
- social factors such as inclusiveness and ability to meet a range of needs.
- maintenance and services.

CABE (2005) identified 8 key qualities of successful green spaces. These can be used as an assessment guide that takes into consideration the qualitative dimensions of open space. The criteria are:

- Sustainability: Good sustainable practice can provide numerous environmental and cost benefits. For example, the potential cooling effect of urban forests.
- Character and distinctiveness: A successful green space will usually promote and reflect the identity and culture of a local community.
- Definition and enclosure: A well-defined park, square or garden will possess a clear distinction between public and private spaces reflecting the legal ownership and rights of use. It will additionally indicate how people should use a space.
- Connectivity and accessibility: Parks, woodlands, river corridors and gardens should form a hierarchy of different types, sizes and scales of public space. The network of spaces should be integrated with the surrounding street pattern, and access points placed at major junctions. Integrated, safe attractive routes should link with the network of green spaces and encourage people to travel to work and school or to access local services on foot or by bicycle.
- Legibility: Refers to ease of understanding and is particularly important where safety and ease of movement are paramount. Such spaces might incorporate pathways, landmarks and gateways to help people orient themselves.
- Adaptability and robustness: Like other forms of development, green spaces need to adapt in the face of unpredictable social, economic and environmental change. CABE identifies the need for planners and clients to develop flexible approaches to green space

planning that include temporary uses for green space in areas of change and adapting areas outside of traditionally designated public open spaces to green space.

- **Inclusiveness:** Parks and public gardens should provide a resource for a wide range of people in terms of gender, ages and backgrounds. Public open space should be socially inclusive and accommodate a variety of uses.
- **Biodiversity:** Schemes of all scales should be designed to work with nature to encourage biodiversity in green spaces of all types.

4.4 Open Space Services

'Services' refers to a combination of the quantity and quality of open space. *Better quality open spaces deliver a greater amount of open space 'services' to the local community than poorer quality open spaces* ***of the same size.*** Better quality open spaces can have a range of improvements, including: increased infrastructure, improved maintenance, etc.

The quality of open space is increasingly important, particularly in higher density areas where providing additional public open space is challenging. Increased investment in open space can make it useable for a wider range of activities. Higher amenity parks include a broader suite of elements such as lighting, water features, increased planting, seating, shade trees and accessible pathways. This allows for the open space to be used by a wider range of people, for a broader range of activities. It also means the open space is more desirable for use throughout the day and into the evening.

Conceptually then, by improving the quality of open space via increased investment the intensity and diversity of uses that can occur there is also increased. It provides a higher level of 'service'.

4.5 Implications for Open Space Strategy

All three of measures of quantity, proximity and quality need to be considered when developing a strategy for an open space network.

In establishing the contributions mechanism, overall provision rates will be used to determine the overall open space *services* that are required.

Detailed planning will then consider quantity, quality and proximity standards to identify and prioritise the acquisitions, improvements and upgrades required across the municipality.

5. OPEN SPACE CONTRIBUTION FRAMEWORK

This section describes the conceptual framework and calculation method to arrive at an open space contribution rate for the City of Monash.

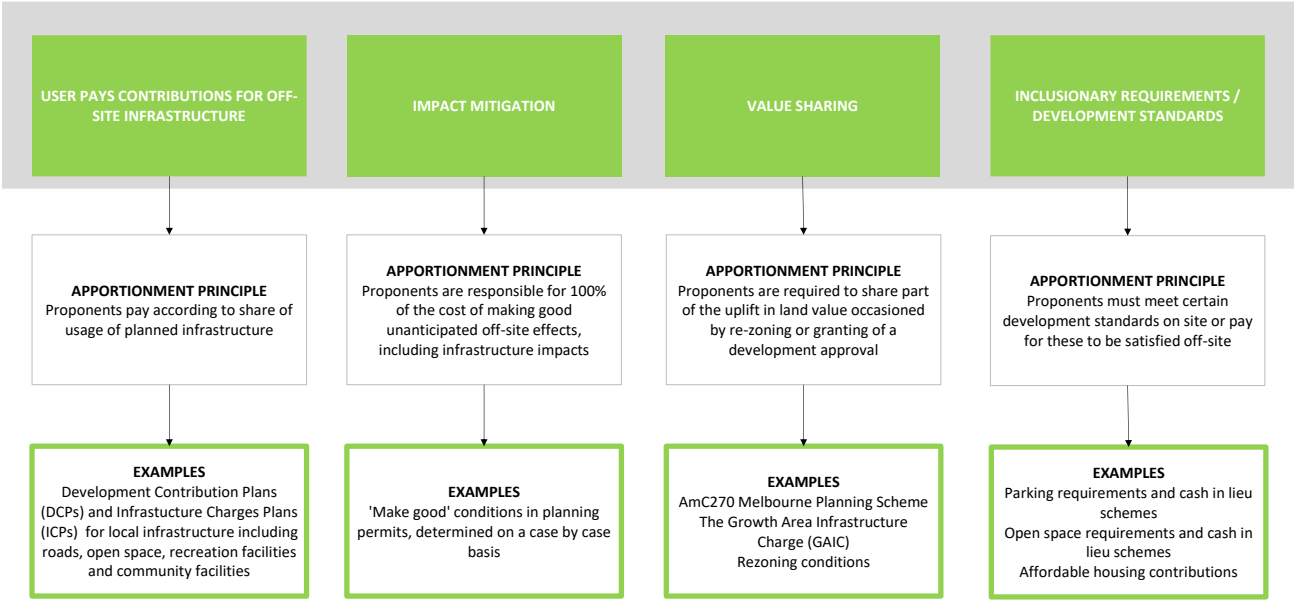
5.1 Public open space contributions in context

Public open space contributions exacted under the Subdivision Act or Clause 53.01 of the Planning Scheme need to be understood in the context of the broader spectrum of development contributions.

Each development contribution type or 'frame' has a separate justification and carries its own principles for fair apportionment. The conflation of these rationales leads to confused policy making, inefficient administration and litigation.

There are four development contribution frames as summarised in the following chart (Figure 8). The following paragraphs provide more explanation of the rationale and cost apportionment for each type in turn.

FIGURE 8 TYPES OF DEVELOPMENT CONTRIBUTION



Source: SGS Economics & Planning Pty Ltd

Development contribution type 1 - *User pays charges*

This category of development contributions is applied in Victoria via the 'DCP' and 'ICP' provisions of the Planning and Environment Act.

These contributions are premised on the *user pays principle*. This requires proponents to contribute cash or in-kind towards infrastructure benefitting their project, with the contributions linked to the proportion of usage of the infrastructure items in question. A nexus between the development and an infrastructure item is established when residents, workers or visitors of the development *make use of* the planned facility, and fair cost

apportionment is established by aligning share of cost with share of usage. Funds collected must be used for the delivery of the planned infrastructure or they must be returned to the current owners of the land which generated the user pays revenues. This is the accountability principle built into the DCP/ICP provisions of the Act.

This category of development contribution could be applied to open space exactions from development in the City of Monash. However, the discipline of apportioning cost according to share of projected usage is likely to mean that a relatively small part of parkland acquisition and embellishment outlays would be recovered from these charges, given that much of the usage catchment for these facilities is already established.

Development contribution type 2 - *Impact mitigation payments*

Proponents of development in Monash may be legitimately required to make compensatory payments or off-setting contributions to mitigate the unanticipated adverse effects of their projects on the natural, built or social environment. For example, if a development incorporates significantly more site coverage and would therefore result in stormwater runoff that exceeds the parameters which had been built into an area wide contribution scheme (DCP) for drainage, that particular proponent may reasonably be requested to meet 100 per cent of the cost of, say, an off-site retarding basin or tank to manage the additional flows.

This requirement is premised on the *'exacerbator pays' principle* where the party responsible for the damage must meet the full cost of making it good (even though others may subsequently benefit from the off-site retention facility). This is clearly distinct from the 'user pays' principle where, as noted, costs are shared according to projected share of usage.

As impact mitigation payments are applied to deal with unanticipated adverse effects of development they cannot be pre-notified in Planning Schemes. Instead, they are applied on a case by case basis via conditions on development consents.

This category of development contribution is not especially relevant to the task of generating funds for open space provision in Monash, though it may be applied from time to time to preserve the functionality and amenity of existing open space.

Development contributions type 3 - *Value sharing requirements*

Value sharing requirements are premised on another, separate and distinct, principle relating to the efficient regulation of community sanctioned development rights.

Regulation of land use and development through planning schemes in Victoria represents a form of restriction on market access necessitated by the objective of economic efficiency. The State deliberately and systematically rations access to 'development rights' via planning regulations. Governments apply this rationing because it is expected to generate a net community benefit (that is, an efficiency or welfare gain) compared to allowing urban development to proceed on a 'laissez faire' basis.

The value of regulated development rights is capitalized into the price of land. For example, other things equal, a piece of land which is enabled for use as a major shopping centre will be more valuable than land without this privileged access to retail centre development rights. Similarly, land enabled for a multi-storey apartment building will be worth more than otherwise equivalent land designated for a single household dwelling, and so on. And land zoned for mixed use residential will be more valuable than land designated for industrial uses.

As occurs with other regulated markets, for example, commercial fisheries, mineral exploitation, broadcasting bandwidth and so on, it is appropriate to charge a licence fee for access to these regulated development rights[7].

Potentially, Council could also apply a de-facto 'licence fee' for the granting of additional development rights in established parts of the municipality through some form of floor area

[7] See Spiller, M., Spencer, A. and Fensham, P. (2017) Value capture through development licence fees, Occasional Paper published by SGS Economics & Planning Pty Ltd, February 2017.

uplift scheme such as that operated under the Melbourne Planning Scheme for the Central City (and now mooted for Fishermans Bend). Certainly, this approach could legitimately be applied when Council is contemplating re-zonings and other Planning Scheme amendments which confer additional development potential on particular pieces of land.

While value sharing is a justified form of development contribution in Monash, it is not clear that it can be relied upon to deliver base load revenues for the acquisition and development of open space in the established parts of the City.

Development contributions type 4 - *Inclusionary provisions*

Inclusionary provisions are premised on minimum acceptable standards of development with the proponent sometimes having the option to fulfil the required performance standard off-site through a cash or in-kind contribution. Cash-in-lieu schemes have been operated for the fulfilment of car parking requirements for decades and are now formalised in the Victoria Planning Provisions (VPP).

Cash payments in lieu of provision of 5 per cent (or more) of land for public open space upon approval of subdivision is another example of the 'inclusionary standards' premise for requiring cash or in-kind contributions from a development proponent.

Again, this premise is quite different to the other rationales for requiring cash or in-kind contributions (user pays, impact mitigation and value sharing) and could reasonably be applied in addition to all three of these other measures.

5.2 Appropriateness of the 'inclusionary provisions' frame

In our view, the inclusionary provisions frame is the most appropriate for the task of open space provision and development in the City of Monash.

This frame is in keeping with basic town planning principles that require all development to incorporate certain features so that in aggregate the neighbourhood, suburb or city in question is functional and sustainable. It recognises that land use can change over time, and so a fixed open space contribution rate across land use types in any given area is appropriate. It prioritises the provision of sufficient open space to meet the needs of the community, whether it be residents or workers.

Embedded in the inclusionary provisions frame is the idea that each unit of development should meet a particular standard or rate of open space provision, unless there are compelling reasons to provide a waiver or relaxation of such requirements (for example, a significant surplus of open space is already available at the municipal level).

The setting of these provision standards is clearly a crucial step. Open space provision standards are summarised in Table 7.

Importantly, the 'inclusionary provisions' frame does not burden future development with the responsibility of addressing pre-existing deficiencies in the supply of open space. It is therefore not a means of catching up on inadequate open space provision that may have happened previously. Instead, it focuses on ensuring all future development contributes to open space provision that meets a particular and designated provision rate standard.

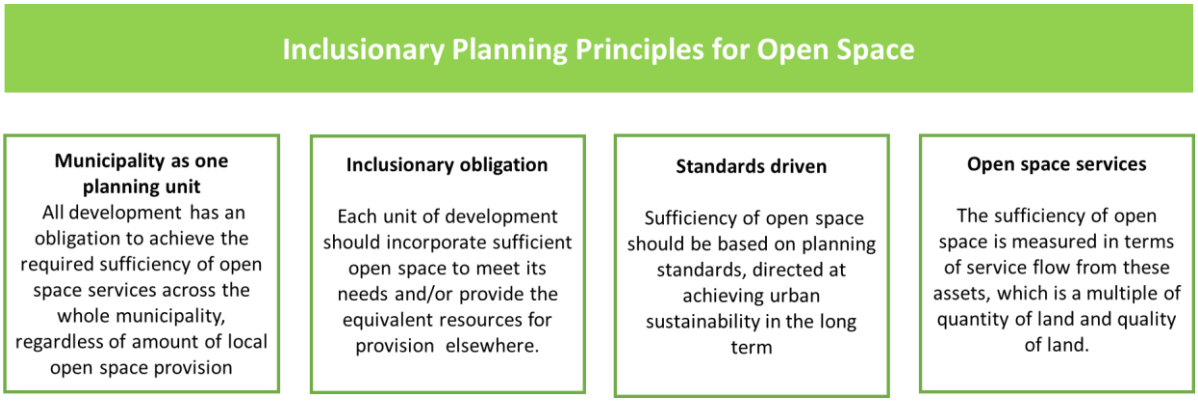
One upshot of the inclusionary provisions frame is quite a different cost apportionment outcome compared to user pays charges. This is because, in effect, each development project must equip itself with its required quantum of open space according to the adopted planning standard, albeit that this might be achieved through cash in lieu contributions for fulfilment of the required open space off-site.

5.3 Calculation of open space contribution requirements

The calculation of open space contribution requirements is founded on four key principles described below and in Figure 9.

1. The City of Monash is considered a single planning unit for open space planning purposes. Clause 53.01 allows for open space contributions collected to be spent *anywhere* within the municipality, not necessarily in the vicinity of the site from which collection was effected. This means that proponents in those Monash locations which are already well endowed with open space will have an equal obligation to meet Monash's aggregate open space requirement as proponents in areas which are, or will be, poorly endowed.
2. An inclusionary requirements approach means that all development should provide sufficient open space services to meet its need as indicated by planning standards. This can be through land or cash in kind contributions, and it is at Council's discretion how these are collected.
3. All existing and future residents of the City of Monash are entitled to have access to a reasonable standard of open space. Planning standards for per capita provision rates provide a starting point for determining open space service requirements.
4. Open space services are a combination of the quality of open space and the quantity of open space. Planning for future open space acquisitions and upgrades should seek the most equitable distribution of open space services across the City.

FIGURE 9 INCLUSIONARY PLANNING PRINCIPLES FOR OPEN SPACE



Source: SGS Economics & Planning Pty Ltd

Under the inclusionary requirements frame, open space contribution rates have been calculated on the basis that *all* development will contribute towards the sustainable functioning of the planning unit, in the long term. That is, providing an adequate supply of public open space to the future community (of both workers and residents) should fall on residential and non-residential development.

As noted, the inclusionary provisions frame is driven by a required standard of open space services, which is in turn determined by appropriate planning standards.

Open Space Services

Open space standards help identify the Open Space Services required in an area. As discussed in section 4, Open Space Services are a combination of the quantity *and* quality of open space.

In an established area like Monash, it is difficult to ensure that significant additional quantum of land for open space is provided. Delivering Open Space Services, through land acquisition and improvements and upgrades to existing open space, is a more practical approach to open space planning.

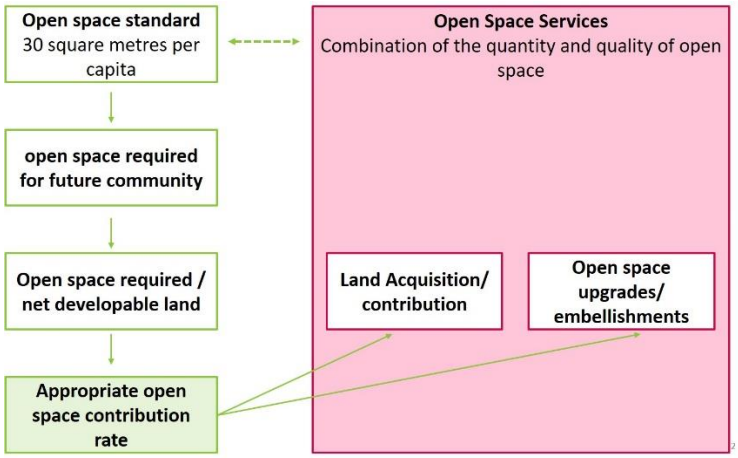
To calculate how much open space services are required, the quantum of open space per capita is used as an *equivalent*.

Based on this logic, the approach used to determine the contribution rate for each part of the study area is described below.

Open space contribution rate calculation

Figure 10 illustrates the process of determining open space contribution rates, and the relationship between the contribution rate and open space services to be provided.

FIGURE 10: OPEN SPACE CONTRIBUTION RATE ASSESSMENT



Source: SGS Economics and Planning, 2018

Open Space Standard

The first step is to set an open space standard. The appropriate provision standard for the City of Monash is 30 square metres per capita, consistent with other local planning standards. This is used as an equivalent measure for open space services. A focus on open space services supports Council planning for improving the quality of open spaces, as well as the quantum of open spaces.

Open space required for future community

The second step identifies the open space requirements of the future City of Monash population. The per capita rate is applied to the projected population at 2028.

Open Space required / net developable land

The future quantum of open space required is then identified as a proportion of Monash's total land area. This informs the open space contribution rate.

It is calculated by estimating the total net developable urban area (net developable land) using property parcel information[8]. The future quantum of open space required is then divided by the net developable land.

This leads to an open space contribution rate of 10 per cent for all commercial, residential and industrial land uses within Monash. This is illustrated in Table 8.

[8] This includes all land uses that are suited to redevelopment for commercial, industrial and residential land uses, and excludes schools, parklands, community facilities roads and other land used for transport

TABLE 8: OPEN SPACE CONTRIBUTION RATE CALCULATION

Step	Metric	Value
1	Planned population (effective build out)	206,907 people
2	Total net developable urban area (total area of all developable lots in study area).	6,494 hectares
3	Open space required (@30m^2/capita)	620.72 hectares
4	Open space requirement from all developable land (value at step 3 divided by value at step 2)	10 per cent*

Source: SGS Economics and Planning, 2018, *id. forecasts, 2016.

** 9.56% is rounded up to 10%.

Discussion

This approach ensures that the future community will have access to an adequate supply of public open space across the whole of Monash.

Using this method, a contribution rate equivalent to 10 per cent of land value – for both residential and non-residential development - would be required to deliver a reasonable standard of open space.

Council's existing open space contribution rates as specified in Clause 53.01 are considerably lower than this recommended contribution rate. When existing contribution rates are translated to provision rate standards, open space provision is as low as 6.3 square metres per capita.

TABLE 9: EXISTING OPEN SPACE CONTRIBUTION RATES AND IMPLIED PROVISION STANDARD

Open space contribution rate	Implied Provision standard (square metres per capita)
5%	15.7
4%	12.6
3%	9.4
2%	6.3

Source: SGS Economics and Planning, 2018

Impacts on development

The introduction of a higher open space contribution rate is likely to translate into a reduction in the residual land value of sites for developers. That is, there would be a reduction in the price that developers would be willing to pay to land owners. As long as the residual land value for the development project is greater than the existing capitalised value of the income from the site[9], development is likely to proceed.

For the projects where there is currently a small margin between the developer's residual land value and the capitalised income stream under existing use of the site, an increase in public open space contributions *may temporarily* forestall development. As the market continues to rise, so too will residual land values, and the impact of the contribution rate will no longer be a deterrent to incumbent landowners selling land for development.

[9] Equivalent to rental/lease income over a 25 year period.

6. CONCLUSIONS & RECOMMENDATIONS

This section provides recommendations for the implementation of an appropriate open space contribution rate.

A contribution rate of 10 per cent of land value is recommended to deliver a reasonable standard of open space provision across the whole of Monash. This contribution rate reflects the need to ensure that all residents in the future (2028) have access to an appropriate level of open space services. In Monash, an appropriate standard of open space services is based on the equivalent value of 30 square metres per capita.

This inclusionary requirements approach is founded on the principle that all development must meet an open space standard, and is intended to ensure equitable access to open space across the whole municipality in the long run. It does not burden development in under-supplied areas with greater costs for improving open space. Instead it recognises that the entire municipality is a singular planning area for open space, across which an acceptable standard of open space services must be met.

Currently, 10 per cent of net developable land area is used in Precinct Structure Plans as a guideline for open space provision. Applying this contribution rate in Monash would ensure open space services are funded at a standard which is consistent with local and international benchmarks.

In order to strategically justify a lower contribution rate for new development, there would need to be a clear commitment from Council to partially fund its open space program using rates. For example, if a 5 per cent contribution rate were to be applied, Council would need to fund the 50 per cent shortfall in open space costs in order to deliver open space services at the desired standard.

Alternatively, if Council selects a lower contribution rate in the absence of a commitment to partially funding open space, this would reflect their acceptance of a lower standard of open space provision across the municipality in the long run. That is, below local and international standards. Table 10 shows the provision standards that would be associated with different open space contribution rates.

TABLE 10:OPEN SPACE CONTRIBUTION RATES WHEN DIFFERENT PROVISION STANDARDS ARE APPLIED

Provision standard (square metres per capita)	Associated open space contribution rate
30	10%
25	8%
19	6%
16	5%

Source: SGS Economics and Planning, 2018

The adoption of a 10 per cent contribution rate in the City of Monash will allow Council to deliver projects identified in the open space strategy. The focus on open space services supports Council planning for high quality open spaces while also addressing gaps in access to open space across the municipality.

SGS Economics & Planning

Contact us

CANBERRA
Level 2, 28-36 Ainslie Place
Canberra ACT 2601
+61 2 6257 4525
sgsact@sgsep.com.au

HOBART
PO Box 123
Franklin TAS 7113
+61 421 372 940
sgstas@sgsep.com.au

MELBOURNE
Level 14, 222 Exhibition St
Melbourne VIC 3000
+61 3 8616 0331
sgsvic@sgsep.com.au

SYDNEY
209/50 Holt St
Surry Hills NSW 2010
+61 2 8307 0121
sgsnsw@sgsep.com.au